DRAFT EIA / EMP FOR PROPOSED ROUGH STONE AND GRAVEL QUARRY CATEGORY B1 - CLUSTER (CLUSTER AREA – 6.93.50 Ha.)

(Submitted for Public Hearing as per the provisions of EIA Notification 2006 & its amendments thereof)

APPROVED TOR Lr.No.SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023

PROPOSED QUARRY LEASE DETAILS			
SURVEY NOS	102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I		
VILLAGE	LEKKANAYAKKANPATTI		
TALUK	MARUNGAPURI		
DISTRICT	TIRUCHIRAPPALLI		
EXTENT	2.62.0 Ha		
PROPOSED PRODUCTION FOR FIVE YEARS	2,06,540 M³ OF ROUGH STONE & 38,752 M³ OF GRAVEL		
LAND	PATTA LAND		

(Sector No. 1(a) (Sector no.1 as per NABET)

Category of the Project: B1 Cluster Mining, Total Cluster Area – 6.93.50 Ha

Baseline Monitoring Period – October to December 2023

APPLICANT

THIRU.R. ARUMUGAM
S/o. RAMAIAH
47, NORTH STREET, LEMBALAKUDI PUDUKOTTAI DISTRICT,
PIN CODE- 622 412

ORGANIZATION

M/s. GLOBAL MINING SOLUTIONS

(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)

PLOT NO. 6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY,

KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455

NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110



MAY -2024



AMENDMENT PAGE

SL	Page No.	Section / Clause / Para / Line (as Applicable)	Date of Amendment	Amendment Made	Reasons of amendment	Signature of Person Authorizing Amendment
1						
2						
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8						
9						
10						

ACKNOWLEDGEMENT

M/s. Global Mining Solutions, Salem is very much thankful to Thiru.R. Arumugam , (Lessee) for the confidence and trust placed on our organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone and Gravel Quarry over a cluster area of 6.93.50 Ha at Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu and formulating the Environmental Management Plan (EMP). We also gratefully acknowledge the cooperation and assistance provided by concerned government authorities for collection of secondary information for the preparation of EIA/EMP report. Our sincere thanks to the local people of Lekkanayakkanpatti Village and the nearby villages for their whole hearted cooperation and constant involvement during the entire field study without which the study would not have been possible.

For: M/s. Global Mining Solutions

(M.Prabhu)

Managing Director

M. Prab



UNDERTAKING

In Line with MoEF & CC OM no. J - 11013/41/2006-IA.II (I) dated 5th October 2011, we hereby give our undertaking for owning the content and information in the EIA/EMP report submitted for EC of the proposed Rough Stone and Gravel Quarry over a cluster area of 6.93.50 Ha at Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

For Global Mining Solutions

Name: Manikandan Manickam

EIA Coordinator - Mining of Minerals

M/s. Global Mining Solutions



UNDERTAKING

In Line with MOEF&CC OM no. J-11013/41/2006-IA.II (1) dated 4th Aug 2009 and its Amendments, we hereby confirm that all Terms of Reference issued by Ministry of Environment, Forest and Climate Change vide Letter No: . SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023 for preparation of EIA/EMP report for the proposed Stone Quarry over a cluster area of 6.93.50 Ha at Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu, for the production of 2,06,540 Cu.m of Rough Stone and 38,752 Cu.m of Gravel from the proposed lease area and the details has been complied in the EIA/EMP report is factually correct.

The EIA/EMP report has been prepared by M/s. Global Mining Solutions (GMS), Salem. GMS is a NABET accredited consultant for preparation of EIA/EMP report of Mining of Minerals (Opencast only) vide certificate No. NABET/EIA/2326/IA 0110 valid till 04.01.2026.

For Global Mining Solutions

1.

Name: Manikandan Manickam

EIA Coordinator - Mining of Minerals

M/s. Global Mining Solutions









National Accreditation Board for Education and Training



Certificate of Accreditation

Global Mining Solutions

Plot No - 6 SF No 13/2 A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamil Nadu-636455

The organization is accredited as Category-8 under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations, Version 3: for preparing EIA-EMP reports in the following Sectors —

5.		Sector (as per)	64
No	Sector Description	NABET MOEFCO	Cat
	Mining of minerals-opencast mining only	1 1 (a) (i)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IAAC minutes dated February 10, 2023, posted on the QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance with the terms and conditions mentioned in QCI-NABET's letter of occreditation bearing no. QCI/NABET/ENV/ACO/23/2724 dated March 31, 2023. The accreditation needs to be renewed before the expiry date by Global Mining Solutions, Salem following the due process of assessment.

Sr. Director, NABET Date: March 31, 2023

Certificate No. NABET/EIA/2326/IA 0110 Valid up to January 4, 2026

For the updated List of Accredited EtA Consultant Organizations with approved Sectors please refer to the QCI-NABET website.



ANNEXURE - VII

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over a cluster area of 6.93.50 Ha at Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

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

EIA Coordinator Name: Manikandan Manickam

m. uhijuj

Signature & Date

Period of involvement: October 2023 to December 2023.

Contact information:

M/s Global Mining Solutions

Plot No.6, SF No. 13/2, A2, VS City, RC Chettypatty,

Kottamettupatty, Omalur,

Salem, Tamil Nadu - 636 455

S. No.	Functional areas	Name of the	Involvement (period and task**)	Signature and Date
1	AP	Dhanalakshmi Ramanathan	Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation	R. Dhans



	T	Γ		· · · · · · · · · · · · · · · · · · ·
			measures for air	
			pollution.	
			Period: October 2023 to	
			December 2023.	
2	WP	Abirami Kaliaperumal	Assessment of existing water quality, impact of the project on surface and ground water quality, suggested mitigation measures for minimizing the impact.	L. Shing
			Period: October 2023 to December 2023.	
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. Period: October 2023 to December 2023.	Ce Routh
4	SE	Sarasvathy K	Baseline SE study. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. Period: October 2023 to December 2023.	of a the



5	ЕВ	Saravanan S	Baseline data collection of related to ecology of the area. Period: October 2023 to December 2023.	Q Saravanya
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. Period: October 2023 to December 2023.	No - Marine Car
7	AQ	Srilatha Thiruveedhula	Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures. Period: October 2023 to December 2023.	T Smalte
8	NV	Dhanalakshmi Ramanathan	Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.	R. Dhams_



				T
			Period: October 2023 to	
			December 2023.	
9	LU	Dhanalakshmi Ramanathan	Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment. Period: October 2023 to December 2023.	R. Dhams_
10	RH	S.V. Prashant	Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker. Period: October 2023 to December 2023.	forashant.
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. Period: October 2023 to December 2023.	Droupy Snake.



12	GEO	Valliappan Meyyappan	Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area. Period: October 2023 to December 2023.	or continue.
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COMPLIANCE TO TERMS OF REFERENCE





THIRU.DEEPAK S.BILGI, LF.S. MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU

3rd Floor, PanagalMaaligai, No.1, Jeenis Road, Saidapet, Chennai - 600 015. Phone No. 044-24359973 Fax No. 044-243599759

TERMS OF REFERENCE (ToR) Lr No.SEIAA-TN/F.No.10439/SEAC/I(a)ToR-1631/2023 Dated:12 .12.2023.

To

Thiru. R. Arumugam,

S/o. Ramaiah,

47, North Street, Lembalakudi,

Pudukottai District - 622 412.

Sir / Madam,

Sub: SEIAA, Tamil Nadu - Proposed Rough Stone and Gravel Quarry lease over an extent of 2.62.00 Ha at S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H, and 102/11 of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu by Thiru. R. Arumugam - under project category - "BI" and Schedule S.No.1(a) "Mining of Minerals Projects" - ToR issued along with Public Hearing- preparation of EIA report - Regarding.

- Ref: 1. Online proposal No. SIA/TN/MIN/445806/2023 dated:25.09,2023.
 - Your application submitted for Terms of Reference dated:04.10.2023.
 - 3. Minutes of the 423th SEAC meeting held on 15:11:2023.
 - Minutes of the 678th SEIAA meeting held on 11.12.2023 & 12.12.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for

The proponent, Thiru. R. Arumugam has submitted an application for Terms of Reference (ToR) on 04.10.2023, for the Proposed Rough Stone and Gravel Quarry lease over an extent of 2.62.00

MEMBER SECRETARY

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SEIAA-TN

Ha at S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H, and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

The proposal is placed for appraisal in this 423rd meeting of SEAC held on 15.11.2023. The details of the project furnished by the proponent are available on the website (parivesh.nic.in).

The SEAC noted the following:

- The project proponent, Thiru. R. Arumugam has applied for Terms of Reference for the Proposed Rough Stone and Gravel Quarry lease over an extent of 2.62.00 Ha at S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H, and 102/11 of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
- The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
- As per the mining plan, the production for 5 years not to exceed 2,06,540m³ of rough stone and 38,752m³ of gravel upto the depth of 17m below ground level.

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

- The Project Proponent shall furnish the revised EMP based on the study carried out on impact
 of the dust & other environmental impacts due to proposed quarrying operations on the nearby
 agricultural lands for remaining life of the mine in the format prescribed by the SEAC
 considering the cluster situation.
- The PP shall provide the mitigation measures for the reserve forest located at a distance of 236 m from the mine boundary during the time of appraisal for obtaining the EC.

ANNEXURE

- 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.

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- (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.
- 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.
- The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
- 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.

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- 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.
- 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.
- 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.

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- 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.
- 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.

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- 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.
- 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.
- A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both
 within the mining lease applied area & 300m buffer zone and its management during mining
 activity.
- A detailed 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
- 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.

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- 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.
- 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 besidess attracting penal provisions in the Environment (Protection) Act, 1986.

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Appendix -I List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	Aegle marmelos	Vilvam	නිණකාර
2	Adenaanthera pavonina	Manjadi	மகுசார். ஆனைக்குக்றிமணி
3	Albizia lebbeck	Vangai	SUTSTILE.
4	Albizia amara	Usil	0.40
5	Baulania purpurea	Mantharai	மந்தானர
6	Bauhinia racemosa	Aathi	ஆத்தி
7	Bauhinia tomentos	Iruvathi	Bourss:
8	Buchanania axillaris	Kattuma	ant.Gua
9	Borassus flabellifer	Panai	LISTISTE
10	Butca monosperma	Murukkamaram	முக்கமும்
11	Bobax cerba	Ilavu, Sevvilavu	Brong
12	Calophyllum inophyllum	Punnai	Lishmon
13	Cassia fistula	Sarakondrai	ericentery.
14	Cassia roxburghii	Sengondrai	G#6Gardinop
15	Chloroxylon sweitenia	Purasamaram	புக மாம்
16	Cochlospermum religiosum	Kongu, Manjalliavu	கோங்கு, மஞ்சள் இஸ்வு
17	Cordia dichotoma	Naruvuli	நகுவுளி.
18	Creteva adansoni	Mavalingum	மானிலங்கம்
19	Dillenia indica	Uva, Uzha	0_FT
20	Dillenia pentagyna	SiruUva, Sitruzha	சிறு உசா
21	Diospyro sebenum	Karungali	கருங்காலி
22	Diospyro schloroxylan	Vaganai	வகணை
23	Ficus amplissima	Kalltchi	கல் இச்சி
24	Hibiscus tiliaceou	Aatrupoovarasu	and minimum as
25	Hardwickia binata	Aacha	ALD ST
26	Holoptelia integrifolia	Aayili	அயா மரம், ஆயிலி
27	Lannea coromandelica	Odhiam	அதியம்
28	Lagerstroemia speciosa	Poo Marudhu	A north
29	Lepisanthus tetraphylla	Neikottaimaram	தெப் கொட்டடை மரப்
30	Limonia acidissima	Vila maram	வியா மரம்
31	Litsen glutinos	Pisinpattai	அரம்பா புசின்பட்டை
32	Madhuca longifolia	Illuppai	ROUNDU
33	Manilkara hexandra	UlakkaiPaalai	E-NEGE LITERS
14	Minusops elengi	Magizhamaram	លម្បីប្រពន្ធប្រ
15	Mitragyna parvifolia	Kadambu	erpri
6	Morinda pubescens	Nuna	290000
7	Morinda citrifolia	Vellai Nuna	Gentleman garant
8	Phoenix sylvestre	Eachai	###IDJID
9	Pongamia pinnat	Pungam	Unisau

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40	Premna mollissima	Munnai	(ADMINISTRATION
41	Premna serratifolia	Narumunnai	200 Operania
42	Premna tomentosa	Malaipoovarasu	rosseo rissan
43	Prosepis cinerea	Vanni maram	sustrail acqub
44	Pterocurpus marsupium	Vengai	(Seurisenic
45	Pterospermum canescens	Vennangu, Tada	வெண்ணாங்கு
46	Pterospermum xylocarpum	Polavu	Hand
47	Puthranjiva roxburghi	Karipala	and anson
48	Salvadora persica	Ugaa Maram	maran undub
49	Sapindus emarginatus	Marupungan, Soapukai	Bertingsanti
50	Saraca asoca	Asoca	அசோவா
51	Strebbus asper	Piray maram	பிராய் மரும்
52	Stryclmos nuxcomic	Yetti	eriig
53	Strychnos potatorum	Therthang Kottai	தேத்தான் கொட்டை
54	Syzygium cumini	Naval	BTRIFG
55	Terminalia belleric	Thandri	part single
56	Terminalia arjuna	Ven marudhu	General மருது
57	Toona ciliate	Sandhana vembu	#ந்தன் வேர்பு
58	Theopesia populnea	Puvarasu	Chinate
59	Walsuratrifoliata	valsura	GIFFOREST
60	Wrightia tinctoria	Veppalai	Generation
61	Pithecellobium dulce	Kodukkapuli	GETBEETLEHN

Discussion by SEIAA and the Remarks:-

The subject was placed in the 678th authority meeting held on 11.12.2023 & 12.12.2023 The authority noted that the subject was appraised in the 423th SEAC meeting held on 15.11.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the conditions mentioned in 'Annexure B' of this minutes.

Annexure 'B'

Cluster Management Committee

- 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.

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- 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
- The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
- 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.
- The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
- 8. The committee shall furnish the Emergency Management plan within the cluster.
- The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
- 10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
- 11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

- 12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
 - a) Soil health & soil biological, physical land chemical features
 - b) Climate change leading to Droughts, Floods etc.
 - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
 - d) Possibilities of water contamination and impact on aquatic ecosystem health.
 - e) Agriculture, Forestry & Traditional practices.
 - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
 - g) Bio-geochemical processes and its foot prints including environmental stress.
 - h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity

13. Impact on surrounding agricultural fields around the proposed mining Area.

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

Forests

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

Water Environment

- 23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
- 24. Erosion Control measures.
- 25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
- 26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.

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- 27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
- 28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
- 29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
- The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

Energy

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

Climate Change

- 32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
- 33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

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

EMP

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

Risk Assessment

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

Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in &

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around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

- 39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.
- 40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
- 41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

A. STANDARD TERMS OF REFERENCE

- 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.
- 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.

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- 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.
- 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.

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- 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

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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

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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.

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- 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
 - 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.

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- 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.
- 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).
- 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.
- Capital cost of the project, estimated time of completion.
- 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.

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- 7. Details of village map, "A" register and FMB sketch shall be furnished.
- Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
- 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.
- EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
- Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
- 12. The EIA study report shall include the surrounding mining activity, if any.
- 13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
- 14. A study on the geological resources available shall be carried out and reported.
- 15. A specific study on agriculture & livelihood shall be carried out and reported.
- 16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
- 17. Site selected for the project Nature of land Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
- 18. Baseline environmental data air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population.
- 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
- The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.

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- 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.
- 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.
- 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-11013/41/2006-1A.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-I1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31th December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.
 - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent willtake

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further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

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Copy to:

- The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
- The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
- The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
- Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan,
 CGO Complex, New Delhi 110003
- 5. The District Collector, Tiruchirappalli District.
- 6. The Assistant Director, Department of Geology & Mining, Tiruchirappalli District
- 7. Stock File.

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POINT WISE COMPLIANCE OF TOR CONDITIONS

S.No	TOR Points	Reply	Page No
A. Tol	R in Addition to Standard ToR		
1	The Project Proponent shall	Air pollution control measures and	180,189,198
	furnish the revised EMP based on	air quality modeling for GLC are	
	the study carried out on impact of	detailed in section 4.5.3 of Chapter	
	the dust & other environmental	4.	
	impacts due to proposed	The mitigation measures prescribed	
	quarrying operations on the	by SEAC-TN for the Quarry located	
	nearby agricultural lands for	within 1 km from Reserve Forest	
	remaining life of the mine in the	are detailed in Section 4.3 of	
	format prescribed by the SEAC	Chapter 4.	
	considering the cluster situation.	Anticipated impacts and its	
		mitigation measures due to this	
		quarry operation are detailed in	
		Chapter 4.	
2	The PP shall provide the	The mitigation measures prescribed	180 & 189
	mitigation measures for the	by SEAC-TN for the Quarry located	
	reserve forest located at a	within 1 km from Reserve Forest	
	distance of 236 m from the mine	are detailed in Section 4.3 of	
	boundary during the time of	Chapter 4.	
	appraisal for obtaining the EC.	Anticipated impacts and its	
		mitigation measures due to this	
		quarry operation are detailed in	
		Chapter 4.	
B. AN	NEXURE - I		
1	In the case of existing/operating	Not applicable. This is a fresh	-
	mines, a letter obtained from the	quarry project.	
	concerned AD (Mines) shall be		
	submitted and it shall include the		
	following:		
	i. Original pit dimension		-



	T		
	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	The details of survey on the	125
	proposed mining area and latest	structures within 300m radius is	
	VAO certificate regarding the	given in section 3.5 of Chapter 3	
	location of habitations within	and the VAO certificate is enclosed	
	300m radius from the periphery	as Annexure – 4.	
	of the site.		
3	The proponent is requested to	A Site survey has been conducted	125
	carry out a survey and	to identify and list structures	
	enumerate on the structures	located within a 500 m radius from	
	located within the radius of (i) 50	the proposed Quarry and structures	
	m, (ii) 100 m, (iii) 200 m and (iv)	located within 500 m radius are	
	300 m (v) 500m shall be	given in section 3.5 of Chapter 3.	
	1	i	



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
occupants, whether it belongs to the owner (or) not, places of worship, industries, factories,
the owner (or) not, places of worship, industries, factories,
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 A detailed hydro-geological report -
hydrological report indicating the of the proposed project will be
impact of proposed quarrying incorporated in the Final EIA/EMP
operations on the waterbodies Report.
like lake, water tanks, etc are
located within I km of the
proposed quarry.
5 The Proponent shall carry out Bio The bio diversity study has been 160
diversity study through reputed carried out by our FAE is given in
Institution and the same shall be section 3.7.7 of Chapter 3. The
included in EIA Report. comprehensive bio diversity study
through reputed institution will be
incorporated in the Final EIA/EMP
Report.
6 The DFO letter stating that the The DFO letter will be incorporated -
proximity distance of Reserve in the Final EIA/EMP Report.
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 Not applicable. This is a fresh -
an existing (or old) quarry where quarry project.
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	The ultimate depth for this proposal	-
	fresh/virgin quarries, the	(first five years) is 17m BGL only.	
	Proponent shall submit a	The slope stability study will be	
	conceptual 'Slope Stability Plan'	carried out for second five years	
	for the proposed quarry during	plan for this project.	
	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	Affidavit will be incorporated in the	-
	stating that the blasting	Final EIA/EMP Report.	
	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, IIII Class		
	mines manager appointed by the		
	proponent.		
10	The PP shall present a conceptual	Controlled blasting techniques	115
	design for carrying out only	using delay detonators and	
	controlled blasting operation	optimum charge per delay will be	
	involving line drilling and muffle	implemented in this quarry. The	
	blasting in the proposed quarry	details on blasting parameters are	
	such that the blast-induced	given in section 2.8.2 of Chapter 2.	
	ground vibrations are controlled		
	as well as no fly rock travel		
	beyond 30 m from the blast site.		
11	The EIA Coordinators shall obtain	The PP has not carried out any	-
	and furnish the details of	quarrying operation before this	
	quarry/quarries operated by the	project.	
	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	Not applicable. This is a fresh	-
	carried out the mining activity in	quarry project.	
	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?		



	<u></u>		1
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 comer coordinates of the mine	Project coordinates superimposed	132,133,
	lease area, superimposed on a	in satellite imagery and topo map	170 , 171
	High-Resolution Imagery/Topo	given as Figure No – 3.5 and Figure	& 173
	sheet, topographic sheet	3.6.	
	geomorphology, lithology and	The geology and geomorphology	
	geology of the mining lease area	map are provided in Figure No.3.16,	
	should be provided. Such an	3.17, Chapter 3.	
	Imagery of the proposed area		
	should clearly show the land use	The Soil map is provided under	
	and other ecological features of	Figure No. 3.19, Chapter-3.	
	the study area (core and buffer	The 10km Radius Index plan	
	zone).	showing buffer zone is given in	
		Figure No.3.5 & Figure 3.6 in	
		Chapter – 3.	



16	The PP shall carry out Drone	Fresh lease. It will be complied after	_
10	·	·	
	video survey covering the	3	
	cluster, green belt, fencing, etc.,	operation.	
17	The proponent shall furnish	Photographs of the site are	109
	photographs of adequate fencing,	provided in Figure 2.6 of Chapter-2.	
	green belt along the periphery	As per Precise Order condition, PP	
	including replantation of existing	have provided safety distance of 7.5	
	trees & safety distance between	m & 10m to the adjoining patta land	
	the adjacent quarries & water	and government land. A kuttai is	
	bodies nearby provided as per	located adjacent to the project site	
	the approved mining plan,	in eastern side.	
		Green belt will be developed over	
		an area of 0.70 hectares. The work	
		of the same is under process.	
18	The Project proponent shall	The geological reserves -	102
	provide the details of mineral	7,86,000 m³ of rough stone and	
	reserves and mineable reserves,	52,400 m ³ of Gravel for 32m BGL.	
	planned production capacity,		
	proposed working methodology	The mineable reserves –	
	with justifications, the	2,56,905 m³ of rough stone and	
	anticipated impacts of the mining	$38,752$ m 3 of gravel for 32 m	
	operations on the surrounding	BGL.	
	environment, and the remedial	The proposed total production	
	measures for the same.	quantity (First five years) is	
		2,06,540 m ³ of rough stone and	
		38,752 m³ gravel upto a depth of	
		17m below ground level for the	
		period of five years.	
		,	
		Details are given in Chapter 2.	
19	The Project Proponent shall	Complied. Please refer figure 10.1	244
	provide the Organization chart	of Chapter 10.	
	indicating the appointment of	- C. G. G. C.	
	various statutory officials and		
	various statutory officials affu		



	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	A detailed hydro-geological report	-
	conduct the hydro-geological	of the proposed project will be	
	study considering the contour	incorporated in the Final EIA/EMP	
	map of the water table detailing	Report.	
	the number of groundwater		
	pumping & open wells, and		
	surface water bodies such as		
	rivers, tanks, canals, ponds, etc.		
	within I 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	The baseline data were collected	124 &236
	baseline data for the	(October – December 2023) for the	
	environmental and ecological	environmental components	
	parameters with regard to	including land, soil, water, air,	
	surface water/ground water	noise, biology, socio-economy, and	
	quality, air quality, soil quality &	the results have been discussed in	



	flora /fauna including traffic /	Chapter 3. Traffic density survey is	
	vehicular movement study.	detailed in section 7.4.2 of Chapter	
		4.	100 0 0 0
22	The Proponent shall carry out the	cumulative impact study due to	180 & 230
	Cumulative impact study due to	mining operations in cluster are	
	mining operations carried out in	given in Section 7.4 of Chapter 7.	
	the quarry specifically with	Anticipated impacts and its	
	reference to the specific	mitigation measures for various	
	environment in terms of soil	attributes are detailed in Chapter 4.	
	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	Rain water harvesting Plan is given	194 & 193
	management with recharging	in section 4.4.4 of chapter 4. Water	
	details along with water balance	balance is shown in Figure 4.1.	
	(both monsoon & non-monsoon)		
	be submitted.		
24	Land use of the study area	Land use of the study area	158, 129
	delineating forest area,	delineating forest area, agricultural	
	agricultural land, grazing land,	land, grazing land, wildlife	
	wildlife sanctuary, national park,	sanctuary, national park, migratory	
	migratory routes of fauna, water	routes of fauna, water bodies,	
	bodies, human settlements and	human settlements and other	
	other ecological features should	ecological features has been	
	be indicated. Land use plan of the	discussed in Section 3.7.6, of	
	mine lease area should be	Chapter 3. details of surrounding	
	prepared to encompass	ecological sensitive features have	
	preoperational, operational and	been provided in Table 3.2 under	



	post operational phases and	Chapter 3. Land use plan of the	
	submitted. Impact, if any, of	project area showing pre-	
	change of land use should be	operational, operational and post-	
	given.	operational phases are discussed in	
	giveiii	Table 2.4 under Chapter 2.	
25	Details of the land for storage of	Not Applicable.	_
23	Overburden/Waste Dumps (or)	Not Applicable.	
	Rejects outside the mine lease,	No dumps have been proposed	
	such as extent of land area	outside the lease area.	
	distance from mine lease, its land	There is no overburden / waste	
	use, R&R issues, if any, should be	generation from this quarry, the	
	provided.	entire mined out minerals will be	
		directly transported to the needy	
		buyers.	
26	Proximity to Areas declared as	This condition is not applicable to	-
	'Critically Polluted'(or) the	this project because this project is	
	Project areas which attracts the	not located in proximity to the areas	
	court restrictions for mining	of areas declared as 'Critically	
	operations, should also be	Polluted' (or) the project areas	
	indicated and where so required,	which attracts the court restrictions	
	clearance certifications from the	for mining operations.	
	prescribed Authorities, such as		
	the TMCB (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	The rain water falling in the quarry	194
	measures proposed to be	will be harvested in the sump at the	
	adopted in the Project should be	lowest level of the quarry. This	
	given. Details of rainwater	sump will act as a settling pond to	
	harvesting proposed in the	prevent solids escaping along with	
	Project, if any, should be	discharge, before outlet. etc.	
	provided.		
L		1	



	T	Tananda 6 m	
		Towards surface runoff	
		management, a garland drain will	
		be constructed around the quarry	
		and will be connected to a settling	
		pond with silt traps. The	
		supernatant clear water from the	
		settling pond will be flow to the	
		downstream users.	
		Rain water harvesting plan is given	
		in section 4.4.4 of Chapter 4.	
28	Impact on local transport	This is a small quarry and the	-
	infrastructure due to the Project	production is very less. 3 Nos. of	
	should be indicated.	5T/10T tippers will be used for	
		transport. The trips will be	
		minimum. Hence no major impact	
		on transport is expected.	
29	A tree survey study shall be	The details on tree survey covering	160
	carried out (nos., name of the	300 m radius is given in section	
	species, age, diameter etc.,) both	3.7.7 of chapter 3.	
	within the mining lease applied		
	area & 300m buffer zone and its		
	management during mining		
	activity.		
30	A detailed mine closure plan for	The mine closure plan details are	118 & 237
	the proposed project shall be	given in section 2.9 of Chapter 2	
	included in EIA-/EMP report	and section 7.5 of Chapter 7.	
	which should be site-specific.		
31	As a part of the study of flora and	Accepted. It will be done.	-
	fauna around the vicinity of the		
	proposed site, the EIA		
	coordinator shall strive to		
	educate the local students on the		
	importance of preserving local		
i	I		



	flora and fauna by involving them		
	flora and fauna by involving them		
	in the study, wherever possible.		
32	The purpose of Green belt around	A detailed green belt development	213
	the project is to capture the	plan has been provided in section	
	fugitive emissions, carbon	4.7.3 of Chapter 4.	
	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	Tatler / one year old Saplings	The FAE of ecology and biodiversity	-
	raised in appropriate size of	has advised the project proponent	
	bags; preferably ecofriendly bags	that saplings of one year old raised	
	should be planted as per the	in the ecofriendly bags should be	
	advice of local forest authorities /	purchased and planted with the	
	botanist / Horticulturist with	spacing of 3 m between each plant	
	regard to site specific choices.	around the proposed project area	
	The proponent shall earmark the	as per the advice of local forest	
	greenbelt area with GPS	authorities/botanist.	
	coordinates all along the	,	
	boundary of the project site with		
	at least 3 meters wide and in		
	between blocks in an organized		
	manner		
	mamilei		



34	A Disaster management Plan	A disaster management plan for the	228
	shall be prepared and included in	project has been provided in	
	the EIA,/EMP Report for the	Section 7.3 under Chapter 7.	
	complete life of the proposed		
	quarry (or) till the end of the		
	lease period.		
35	A Risk Assessment and	A risk assessment plan for the	224
	management Plan shall be	project has been provided in	
	prepared and included in the	Section 7.2 under Chapter 7.	
	EIA/EMP Report for the complete		
	life of the proposed quarry (or)		
	till the end of the lease period.		
36	Occupational Health impacts of	Occupational health impacts of the	217
	the Project should be anticipated	project and preventive measures	
	and the proposed preventive	have been discussed in detail in	
	measures spelt out in detail.	Section 4.9 under Chapter 4.	
	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	No public health implications are	-
	Project and related activities for	anticipated due to this project.	
	the population in the impact zone	Details of CER activities have been	
	should be systematically	discussed in Chapter 8.	
	evaluated and the proposed		
	remedial measures should be	Public health facilities will be further	
	detailed along with budgetary	aimed to be developed through CER	
	allocations.	activities wherein periodic health	



		checkups, medical camps for the	
		locals will be conducted.	
		locals will be conducted.	
38	The Socio-economic studies	No negative impact on socio-	-
	should be carried out within a 5	economic environment of the study	
	km buffer zone from the mining	area is anticipated and this project	
	activity. Measures of socio-	shall benefit the socio-economic	
	economic significance and	environment by offering	
	influence to the local community	employment for 23 people directly.	
	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	No litigation is pending in any court	-
	against the project, if any, with	against this project.	
	direction /order passed by any	, ,	
	Court of law against the Project		
	should be given.		
40	Benefits of the Project if the	Benefits of the project is given in	238
	Project is implemented should be	Chapter 8.	
	spelt out. The benefits of the		
	Project shall clearly indicate		
	environmental, social, economic,		
	employment potential, etc.		
41	If any quarrying operations were	Not applicable. This is a fresh	_
71	carried out in the proposed	quarry project.	
	quarrying site for which now the	quarry project.	
	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 EMP is planned for the entire	-
	the entire life of mine and also	life of the mine. The affidavit for the	
	furnish the sworn affidavit stating	same will be included in the Final	
	to abide the EMP for the entire life	EIA/EMP Report.	
	of mine.		
43	Concealing any factual	Agreed	-
	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.		
Anne	xure 'B'	<u> </u>	
Clust	er Management Committee		
1	Cluster Management Committee	There are two existing quarry and	-
	shall be framed which must	this present proposed quarry (2	
	include all the proponents in the	Existing + 1 Proposed), within a	
	cluster as members including the	500-metre radius. The proponent	
	existing as well as proposed	will take the initiative to form a	
	quarry.	cluster management committee	
		once environmental clearance is	
		obtained for this quarry.	
	I and the second	1	1



2	The members must coordinate	Agreed. It will be complied.	_
_	among themselves for the	- 1.5 2.2 2.2 dop.i.da.	
	effective implementation of EMP		
	as committed including Green		
	Belt Development, water		
	sprinkling, tree plantation,		
	blasting etc.,		
3	The List of members of the	Agreed The list of members of the	
3		Agreed. The list of members of the	-
	committee formed shall be	committee formed will be submitted	
	submitted to AD/Mines before the	to ad/mines after obtaining	
	execution of mining lease and the	Environmental Clearance.	
	same shall be updated every year		
	to the AD/Mines.		
4	Detailed Operational Plan must	Agreed. Details of the Operation	-
	be submitted which must include	plan for cluster mining operations	
	the blasting frequency with	will be submitted once we get	
	respect to the nearby quarry	environmental clearance.	
	situated in the cluster, the usage		
	of haul roads by the individual		
	quarry in the form of route map		
	and network.		
5	The committee shall deliberate	Risk management plan for the	
	on risk management plan	individual quarry is given in this	
	pertaining to the cluster in a	report. As far as cluster working	
	holistic manner especially during	condition is concerned, once the	
	natural calamities like intense	committee is formed, risk	
	rain and the mitigation measures	management as a cluster including	
	considering the inundation of the	inundation of clusters and the	
	cluster and evacuation plan.	evacuation plan will be elaborated.	
6	The Cluster Management	Environmental policy for the cluster	-
	Committee shall form	will be framed by the cluster	
	Environmental Policy to practice	management committee and the	
	sustainable mining in a scientific	policy will be in accordance with	
	and systematic manner in	EPA Act, 1986 and its amendments,	
		2., 2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	



	accordance with the law. The role	guidelines by MoEF&CC/SEIAA and	
	played by the committee in	other regulatory bodies. This policy	
	implementing the environmental	will be displayed in the quarry.	
	policy devised shall be given in		
	detail.		
7	The committee shall furnish	Agreed. It will be complied as	-
	action plan regarding the	mentioned in the Point No.4	
	restoration strategy with respect		
	to the individual quarry falling		
	under the cluster in a holistic		
	manner.		
8	The committee shall furnish the	Agreed. It will be complied as	-
	Emergency Management plan	mentioned in the Point No.4	
	within the cluster'		
9	The committee shall deliberate	Agreed. It will be complied as	-
	on the health of the workers/staff	mentioned in the Point No.4	
	involved in the mining as well as		
	the health of the public.		
10	The committee shall furnish an	Agreed. It will be complied as	-
	action plan to achieve sustainable	mentioned in the Point No.4	
	development goals with		
	reference to water, sanitation &		
	safety.		
11	The committee shall furnish the	Agreed. It will be complied as	-
	fire safety and evacuation plan in	mentioned in the Point No.4	
	the case of fire accidents.		
Impa	act study of mines		
12	Detailed study shall be carried out	in regard to impact of mining around	
	the proposed mine lease area cov	ering the entire mine lease period as	
	per precise area communication	order issued from reputed research	
	institutions on the following		
а	Soil health & soil biological,	The chemical and physical	155, 185
	physical land chemical features.	characteristics of the soil is given in	& 206
		section 3.7.5 of Chapter 3.	



		The anticipated impact and its	
		The anticipated impact and its	
		mitigation measures for soil	
		environment and biological	
		environment are detailed in section	
		4.2 & 4.7 of Chapter 4 respectively.	
b	Climate change leading to	No significant impact on climate	-
	Droughts, Floods etc.	change due to this project. This	
		proposed mining activity is a small	
		scale mining extent of 2.62.0Ha. of	
		patta land. The surrounding	
		environment is already subjected to	
		mining activities and based on the	
		past weather data its inferred that	
		there is no much of change in the	
		climate data of the region and the	
		district profile has no records or	
		past history of climate change	
		leading to droughts and floods.	
		The minor impact to climate change	
		will be controlled by adopting	
		suitable mitigation measures.	
		The anticipated impact and its	
		mitigation measures for various	
		environmental attributes are	
		detailed in chapter 4.	
С	Pollution leading to release of	Considering that the quantum of	-
	Greenhouse gases (GHG), rise in	production is less, only 1 no of	
	Temperature, & Livelihood of the	excavator, 3 tippers will be	
	local people.	engaged. These equipment's will be	
		properly and regularly maintained.	
		Besides, regular vehicular emission	
		tests will be done for the transport	
		vehicles to ensure minimal impact	
		due to carbon emissions. To further	



	Т		
		mediate the carbon emissions, a	
		good greenbelt and plantation plan	
		has been planned wherein 350	
		number of plants will be planted	
		inside the mine lease and 1000 nos	
		will be planted outside the mine	
		lease area.	
d	Possibilities of water	The total water requirement is 6.0	-
	contamination and impact on	KLD. It will be outsourced from the	
	aquatic ecosystem health.	nearby villages. So no impact in the	
		project area due to water usage.	
		The wastewater generation in the	
		form of runoff water during rainy	
		season will be collected in the	
		bottom quarry through proper	
		drainage pattern and the collected	
		water will be used for plantation	
		and dust suppression during dry	
		season. However, there is no	
		wastewater discharge from this	
		quarry is being anticipated. So,	
		possibilities of water contamination	
		and impact on aquatic ecosystem	
		health is not envisaged.	
е	Agriculture, Forestry &	There are no Agriculture, forest	-
	Traditional practices.	area and traditional practices within	
		the project area. However, there	
		are some agricultural land around	
		the project site. It may be affected	
		due to the quarry operation as such	
		dust particles sedimentation in the	
		agricultural land. It will be	
		controlled at the source level by	
<u> </u>		<u>, </u>	



		proper dust suppression as such	
		wet drilling, controlled blasting and	
		water sprinkling on the project	
		roads and project surrounding	
		roads. As per Air Quality Modelling,	
		the impact of the air quality limited	
		to 400m radius. So, there is no	
		impact for the Agriculture, Forestry	
		& Traditional practices located	
		nearby.	
f	Hydrothermal/Geothermal effect	The proposed quarry operation is	-
	due to destruction in the	Opencast Mechanized operation	
	Environment.	with drilling, blasting, excavation,	
		loading and transportation. So the	
		effect of Hydrothermal/Geothermal	
		is not envisaged.	
g	Bio-geochemical processes and	This is a simple mining operation,	-
	its foot prints including	so bio-geochemical processes are	
	environmental stress.	not envisaged.	
h	Sediment geochemistry in the	Water Bodies:	-
	surface streams.	Core Zone – Nil	
		Buffer Zone :	
		Kuttai – adjacent to the lease area	
		in eastern side.	
		Seasonal Odai – 300 m (NE)	
		Tank – 800 m – E	
		• Palar River – 1.40 km – SW	
		Due to mining operation there may	
		be minimum impact to the nearby	
		kuttai and odai due to dust	
		sedimentation. It will be controlled	
		by wet drilling, water sprinkling and	
		plantation.	
			i l



Agric	ulture & Agrobiodiversity		
13	impacts on surrounding	Agreed. It is described in the point	-
	agricultural fields around the	no. 12 (e) of this ToR Compliance	
	proposed mining Area.	Annexure-B	
14	impacts on soil flora & vegetation	The chemical and physical	155, 185
	around the project site.	characteristics of the soil is given in	& 206
		section 3.7.5 of Chapter 3.	
		The anticipated impact and its	
		mitigation measures for soil	
		environment and biological	
		environment are detailed in section	
		4.2 & 4.7 of Chapter 4 respectively.	
15	Details of type of vegetations	There is no standing trees or	-
	including no. of trees & shrubs	vegetation within the mine lease	
	within the proposed mining area	area.	
	and. If so, transplantation of such		
	vegetations all along the		
	boundary of the proposed mining		
	area shall committed mentioned		
	in EMP.		
16	The Environmental Impact	The ecological details have been	160 & 206
	Assessment should study the	provided in Section 3.7.7 under	
	biodiversity, the natural	Chapter 3 and measures have been	
	ecosystem, the soil micro flora,	provided in Section 4.7 under	
	fauna and soil seed banks and	Chapter 4.	
	suggest measures to maintain		
	the natural Ecosystem.		
17	Action should specifically suggest	All the essential environmental	180
	for sustainable management of	protective measures will be	
	the area and restoration of	followed by the proponent to	
	ecosystem for flow of goods and	manage the surrounding	
	services.	environment and restore the	
		ecosystem, as discussed in Chapter	
		4.	



18	The project proponent shall study	The impact of project on the land	181
	and furnish the impact of project	environment has been discussed in	
	on plantations in adjoining patta	Section 4.1 under Chapter 4.	
	lands, Horticulture, Agriculture		
	and livestock.		
Forest	ts		
19	The project proponent shall	Forest in buffer zone:	-
	detailed study on impact of	Reserve Forest - 280m (W)	
	mining on Reserve forests free	Chinnayampatti R.F - 2.97km (W)	
	ranging wildlife	Vellimalai R.F - 3.62km (S)	
		Madukamalai R.F - 4.06km (SW)	
		Karumalai R.F - 5.3km (S)	
		Nedunkuttu R.F - 6.80km (SW)	
		Reserve Forest - 2.09km (NW)	
		Velamalai R.F - 5.0km (NW)	
		Mamalai R.F - 6.6km (NE)	
		The anticipated impact and its	
		mitigation measures for Reserve	
		forest and biological environment	
		are detailed in section 4.3 and	
		section 4.7 of Chapter 4.	
		The project proponent shall do	
		barbed wire fencing work and	
		develop a green belt around the	
		lease area to prevent wildlife from	
		entering the site.	
20	The Environmental Impact	The impacts of the project on forest	189 & 206
	Assessment should study impact	is given in section 4.3 and ecology	
	on forest, vegetation, endemic,	and biodiversity have been	
	vulnerable and endangered	discussed in Section 4.7 under	
	indigenous flora and fauna	Chapter 4.	
21	The Environmental Impact	There are no standing trees within	-
	Assessment should study impact	lease area.	



Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. Water Environment 23 Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within I 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 section 4.3. There are no protected areas, National. Parks, environmentally sensitive areas Corridors and Wildlife pathways near project site. Water Environment A detailed hydrogeological report will be included in the final EIA/EMP report.		T	I	
numbered and action suggested for protection. 22 The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. Water Environment 23 Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within I km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 24 Erosion Control measures. The mitigation measures for Reserve forest are detailed in section 4.3. There are no protected areas, National Parks, environmentally sensitive areas Corridors and Wildlife pathways near project site. A detailed hydrogeological report will be included in the final EIA/EMP report. A detailed hydrogeological report will be included in the final EIA/EMP report.				
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in this quarry has been envisaged. However, there may be erosion due		entire mine lease period.		
However, there may be erosion due	24	Erosion Control measures.	There is no waste generation (OB)	-
			in this quarry has been envisaged.	
the rainy season and that is limited			However, there may be erosion due	
			the rainy season and that is limited	



		within quarry area. The control	
		measures are explained in Chapter	
		·	
		4.	
25	Detailed study shall be carried	Complied. The study details are	124
	out in regard to impact of mining	incorporated in Chapter 3.	
	around the proposed mine lease	Anticipated impacts and its	
	area on the nearby Villages,	mitigation measures are detailed in	
	Water-bodies/ Rivers, & any	Chapter 4.	
	ecological fragile areas		
26	The project proponent shall study	There is no wastewater generation	-
	impact on fish habitats and the	from this Quarry, so this is not	
	food WEB/ food chain in the	applicable.	
	water body and Reservoir.		
27	The project proponent shall study	Section 2.9 provides the land-use	118
	and furnish the details on	pattern at present and at the end of	
	potential fragmentation impact	the quarrying period.	
	on natural environment by the	The post mining land use plan	
	activities.	showing afforestation and water	
		body is shown in Figure No- 2.9.	
28	The project proponent shall study	The Flora and Fauna study covering	160
	and furnish the impact on aquatic	10 km radius are detailed in section	
	plants and animals in water	3.7.7 of chapter 3.	
	bodies and possible scars on the	The impacts anticipated with	
	landscape, damages to nearby	respect to the environment of the	
	caves, heritage site, and	project area is very negligible and it	
	archaeological sites possible land	will be minimized within the project	
	form changes visual and	area.	
	aesthetic impacts	Greenbelt / Plantation will be	
		carried out to enhance the	
		vegetative growth and aesthetic in	
		the safety zone area.	
29	The Terms of Reference should	the safety zone area. The impact of mining on soil	185
29	The Terms of Reference should specifically study impact on soil	·	185



	physical, chemical components		
	and microbial components.		
30	The Environmental Impact	·	190
	Assessment should study on	mitigation measures for Water	
	wetlands, water bodies, rivers	Environment are detailed in section	
	streams, lakes and farmer sites.	4.4 of Chapter 4.	
Energ	Э У		
31	The measures taken to control	The measures taken to control	180
	Noise, Air, Water, Dust Control	noise, air, water, and dust have	
	and steps adopted to efficiently	been given under Chapter 4.	
	utilize the Energy shall be		
	furnished		
Clima	ite Change		
32	The Environmental Impact	The carbon emission and the	195
	Assessment shall study in detail	measures to mitigate carbon	
	the carbon emission and also	emission have been discussed in	
	suggest the measures to mitigate	Section 4.5 under Chapter.	
	carbon emission including	Only the best equipment will be	
	development of carbon sinks and	used, and it will be properly and	
	temperature reduction including	regularly maintained. Regular	
	control of other emission and	vehicular emission tests will be	
	climate mitigation activities.	conducted on the transport vehicles	
33	The Environmental Impact	to ensure minimal carbon	_
	Assessment should study impact	emissions.	
	on climate change, temperature	To further reduce carbon emissions,	
	rise, pollution and above soil &	a good greenbelt plan has been	
	below soil carbon stock.	planned.	
Mine	Closure Plan	pamear	
34	Detailed Mine Closure Plan	The mine closure plan details are	118 & 237
54	covering the entire mine lease	·	110 & 257
		given in section 2.9 of Chapter 2	
	period as per precise area	and section 7.5 of Chapter 7.	
	communication order issued.	The budget details for the	
		progressive mine closure plan are	
		shown in Table 10.2.	



EMP			
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 10.	240
36 Biok	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	Total EMP Cost for 5 years is 214.69 lakhs i.e., Rs.24.94 Lakhs of Capital + Recurring cost Rs. 189.75 lakhs for Five year, which is including the cost of Rs. 3.70 Lakhs (capital) and Rs. 0.41(Recurring) for Greenbelt development.	-
	Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and management plan for this project has been provided in Section 7.2 under Chapter 7.	224
	ter Management Plan		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid,/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire	Disaster Management plan are detailed in section 7.3, Chapter 7.	228



	mine lease period as per precise		
	area communication order		
	issued.		
Other			
39		There are no historical places,	
39		• • •	_
	furnish VAO certificate with	schools, cemeteries, temples, bird	
	reference to 300m radius regard	sanctuaries, and wildlife	
	to approved habitations, schools,	sanctuaries within 500 meters of	
	Archaeological sites, Structures,	the proposed project area. In this	
	railway lines, roads, water bodies	regard, the project proponent has	
	such as streams, odai, vaari,	received an official letter from the	
	canal, channel, river, lake pond,	Village Administrative Officer, The	
	tank etc.	letter copy enclosed as Annexure –	
		4.	
40	As per the MoEF& cc office	The concerns raised during the	-
	memorandum F.No.z2-6512017-	public consultation and all the	
	tA.III dated: 30.09.2020 and	activities proposed will be updated	
	20.10.2020 the proponent shall	in the final EIA report.	
	address the concerns raised		
	during the public consultation		
	and all the activities proposed		
	shall be part of the Environment		
	Management plan.		
41	The project proponent shall study	Complied. The PP has framed detail	-
	and furnish the possible pollution	solid waste management system for	
	due to plastic and microplastic on	the project are and the same will be	
	the environment. The ecological	executed by proper awareness and	
	risks and impacts of plastic &	sign boards. The sign boards will be	
	microplastics on aquatic	in two language i.e., Vernacular	
	environment and fresh water	language (Tamil) and common	
	systems due to activities,	language (English). The plastic	
	contemplated during mining may	waste generation is very negligible	
	be investigated and reported.	and it will be collected from the	
	,	source level in specific dustbin and	



		disposed through the municipal	
		bins.	
C. Sta	indard ToR		
1	Year-wise production details since 1994 should be given,	Not applicable. This is a New Proposal for Quarrying Rough Stone	-
	clearly stating the highest	and Gravel.	
	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	This proposed project area is	-
	support of the fact that the	classified as Patta land registered in	
	proponent is the rightful lessee of	the name of the Applicant, vide	
	the mine should be given.	patta No.1235. The copy of the	
		Patta, Adangal and A-Register are	
		enclosed as Annexure -6.	
3	All documents including approved	Noted & agreed. All documents	-
	mine plan, EIA and public	including approved mine plan, EIA	
	Hearing should be compatible	and Public Hearing are compatible	
	with one another in terms of the	with one another in terms of the	
	mine lease area, production	mine lease area, production levels,	
	levels, waste generation and its management, mining technology	waste generation and its management, mining technology	
	etc. and should be in the name of	etc. and is in the name of the	
	the lessee.	lessee.	
4	All comer coordinates of the mine	Project coordinates superimposed	132,133,
	lease area, superimposed on a	in satellite imagery and topo map	170 , 171
	High -Resolution Imagery/ topo		& 173



	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).	given as Figure No – 3.5 and Figure 3.6. The geology and geomorphology map are provided in Figure No.3.16, 3.17, Chapter 3. The Soil map is provided under Figure No. 3.19, Chapter-3. The 10km Radius Index plan showing buffer zone is given in	
		Figure No.3.5 & Figure 3.6 in Chapter – 3.	
5	Information should be provided in Survey of India Topo sheet in I:50,000 scare 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.	The following map in 1:50,000 Scale: Geology map of the project area covering 10km radius – Figure No. 3.16. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3.17. Drainage map – 3.15 and Lithology Map – 3.18.	132,133, 170 , 171 & 173
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.	(a) Precise Area Communication: The Project Proponent has obtained Precise Area Communication from the Assistant Director, Department of Geology and Mining, Tiruchirappalli, vide RC.NO. 302/2023/Mines, dated 11.08.2023 The letter copy enclosed as Annexure – 1. (b) Mining Plan Approval:	-



		The project proponent has prepared	
		mining plan under rule L9(I),41 &42	
		of Tamil Nadu Minor Mineral	
		Concession Rules, 1959 and the	
		same has been approved by the	
		Assistant Director, Dept. of Geology	
		& Mining, Tiruchirappalli vide	
		RC.NO.302/2023/Mines, dated	
		23.08.2023. The approval letter	
		along with approved plan is	
		enclosed as Annexure – 2.	
7	It should be clearly stated	The proponent will frame a well-	240 - 244
	whether the proponent company	planned environmental policy. Its	
	has a well laid down Environment	details are provided under Section	
	Policy approved by its Board of	10.1, Chapter-10. Monitoring	
	Directors? If so, it may be spelt	Mechanism is detailed under	
	out in the EIA Report with	Section .10.3.	
	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,	Various risks likely to arise due to	224 & 205
	including subsidence study in	mining activities are detailed under	
	case of underground mining and	section 7.2, Chapter-7. This being	
	slope study in case of open cast	an opencast mine, subsidence is not	
	mining, blasting study etc. should	applicable. The impact due to	
	be detailed. The proposed	ground vibrations due to blasting is	
	safeguard measures in each case	given in para 4.6.3, Chapter-4.	
	should also be provided.		
9	The study area will comprise of I0	Noted & Agreed	-
	km zone around the mine lease	The study area considered for this	
	from lease periphery and the	study is 10 km radius and all data	
	data contained in the EIA such as	contained in the EIA report such as	
	waste generation etc. should be	waste generation etc., is for the Life	
	for the life of the mine / lease	of the Mine / lease period.	
	period.		
10	Land use of the study area	The land use of the study area was	158
	delineating forest area,	studied to demarcate various LULC	
	agricultural land, grazing land,	categories and its details are	
	wildlife sanctuary. national park,	provided under section 3.7.6. Of	
	migratory routes of fauna, water	Chapter-3. The land use pattern at	
	bodies, human settlements and	present and at the end of the	
	other ecological features should	quarrying period has been provided	
	be indicated. Land use plan of the	in Table 2.4, Chapter-2. The	
	mine lease area should be	Conceptual plan of mine lease area	
	prepared to encompass	is shown in Figure No- 2.9.	
	preoperational, operational and		
	post operational phases and		
	submitted. Impact, if any, of		
	change of land use should be		
	given.		
		<u> </u>	



11	Details of the land for any Over	There is no waste generation	-
	Burden Dumps outside the mine	anticipated in this quarry operation	
	lease, such as extent of land	since the entire excavated material	
	area, distance from mine lease,	will be utilized. Hence, there is no	
	its land use, R&R issues, if any,	external overburden dump	
	should be given.	involved.	
12	Certificate from the Competent	There is no Forest Land involved in	-
	Authority in the State Forest	the proposed project area. The	
	Department should be provided,	proposed project area is a patta	
	confirming the involvement of	land. Approved Mining Plan is	
	forest land, if any, in the project	enclosed in Annexure – 2.	
	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	Not Applicable. The proposed	-
	the broken-up area and virgin	project area does not involve any	
	forestland involved in the Project	Forest Land.	
	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	Not Applicable. The project doesn't	-
	recognition of forest rights under	attract Recognition of Forest Rights	
	the Scheduled Tribes and other	Act, 2006.	
	Traditional Forest Dwellers	,	
	(Recognition of Forest Rights)		
	Act,2006 should be indicated.		
15	The vegetation in the RF / PF	Reserve Forest - 280m (W)	-
	areas in the study area, with	Chinnayampatti R.F - 2.97km (W)	
	necessary details, should be	Vellimalai R.F - 3.62km (S)	
	given.	Madukamalai R.F - 4.06km (SW)	
		Karumalai R.F - 5.3km (S)	
		Nedunkuttu R.F - 6.80km (SW)	
		Reserve Forest - 2.09km (NW)	
		Velamalai R.F - 5.0km (NW)	
		Mamalai R.F - 6.6km (NE)	
		The flora details in buffer zone are	
		detailed in section 3.7.7 of Chapter	
		3.	
16	A study shall be got done to	The mining lease area and the 10	-
	ascertain the impact of the	km buffer zone from the periphery	
	Mining Project on wildlife of the	of the core zone is devoid of	
	study area and details furnished.	declared ecologically sensitive	
	Impact of the project on the	features like national parks,	
	wildlife in the surrounding and	biospheres, sanctuaries, etc.	
	any other protected area and		
	accordingly, detailed mitigative		
	measures required, should be		
	worked out with cost implications		
	and submitted.		
17	Location of National Parks,	Not Applicable. There are No	-
	Sanctuaries, Biosphere Reserves,	National Parks, Biosphere Reserves,	
	Wildlife Corridors, Ramsar site	Wildlife Corridors, and	
1	Tiger/ Elephant	Tiger/Elephant Reserves within 10	
	Reserves/(existing as well as	Tigely Elephane Reserves Within 10	



	T		
	proposed), if any, within I0 km of	km Radius from the periphery of the	
	the mine lease should be clearly	project area.	
	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	A detailed study of flora and fauna	160
	study area [core zone and buffer	composition in the core and buffer	
	zone (10 km radius of the	zone of the project has been made.	
	periphery of the mine lease)]	The details are furnished in section	
	shall be carried out. Details of	3.7.7.	
	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 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	Not Applicable	_
	'critically Polluted' or the project	Терпсине	
	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	Not Applicable	-
	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	The mining activities will be carried	-
	for the project Affected people	out within the mine lease area only.	
	(PAP) should be furnished. While	The entire mine lease area of 2.62.0	
	preparing the R&R Plan, the	Ha is a patta land. There is no	



	relevant State/ National	population within the ML area.	
	Rehabilitation & Resettlement	Hence, the question of R& R does	
	policy should be kept in view. In	not arise.	
	respect of SCs /STs and other	not arise.	
	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		
	·		
	3 //		
	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.	Baseline Data were collected for	124
22	, , -		124
	March-May (Summer Season); October-December (post	One Season (Post Monsoon Season) October – December 2023 as per	
	October-December (post monsoon season); December-	CPCB Notification and MoEF & CC	
	February (winter season)]		
	, , ,	Guidelines and Detailed in Chapter 3.	
	primary baseline data on ambient air quality as per CPCB	5.	
	air quality as per CPCB Notification of2009, water		
	·		
	quality, noise revel, soil and flora		
	and fauna shall be collected and		
	the AAQ and other data so		
	compiled presented date-wise in		



	I		
	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	Air Quality Modelling for prediction	198 & 233
	carried out for prediction of	of incremental GLC's of pollutant	
	impact of the project on the air	was carried out using AERMOD view	
	quality of the area. It should also	and Detailed in Section 4.5.3.	
	take into account the impact of		
	movement of Vehicles for	Air Quality Modelling For Cluster are	
	transportation of mineral. The	detailed in section 7.4.1 of Chapter	
	details of the model used and	7.	
	input parameters used for		
	modeling should be provided.		
	The air quality contours may be		
	shown on a location map clearly		
	indicating the location of the site,		
	location of sensitive receptors, if		
	any, and the habitation. The wind		
	roses showing pre-dominant		
	wind direction may also be		
	indicated on the map.		
	1		



			
24	The water requirement for the	The total water requirement for the	193
	Project, its availability and source	project is 6.0 KLD. The required	
	should be furnished. A detailed	water will be procured from outside	
	water balance should also be	agencies initially and later	
	provided. Fresh water	rainwater harvested in the mine pit	
	requirement for the Project	shall be used other than drinking	
	should be indicated.	purpose. Water Balance diagram is	
		presented in Figure No – 4.1.	
25	Necessary clearance from the	Not Applicable	-
	Competent Authority for drawl of	Water for dust suppression,	
	requisite quantity of water for the	greenbelt development and	
	Project should be provided.	domestic use will be sourced from	
		accumulated rainwater/seepage	
		water in mine pits and purchased	
		from local water vendors through	
		water tankers on daily requirement	
		basis.	
26	Description of water conservation	Rain water will be diverted into	193
	measures proposed to be	working area by constructing drains	
	adopted in the Project should be	to store and use for dust	
	given. Details of rainwater	suppression and greenbelt	
	harvesting proposed in the	development. Details are presented	
	Project, if any, should be	in section 4.4.4.	
	provided.	The total water requirement for the	
		project will be 6.0 KLD comprising	
		Drinking and domestic 2.0 KLD,	
		Dust suppression 2.5 KLD,	
		Greenbelt 1.5 KLD. The water will	
		be sourced initially from outside	
		agencies. Later the rainwater	
		collected in the mine pit sump will	
		be used for this purpose. The water	



		balance diagram for the same is	
		shown in Figure No 4.1.	
27	Impact of the Project on the	Impact Studies and Mitigation	190
	water quality, both surface and	Measures of Water Environment	
	groundwater, should be assessed	including Surface Water and Ground	
	and necessary safeguard	Water are discussed in Section 4.4.	
	measures, if any required, should		
	be provided.		
28	Based on actual monitored data,	The quarrying activity will not	-
	it may clearly be shown whether	intersect ground water table as	
	working will intersect	quarrying is proposed upto a depth	
	groundwater. Necessary data	of 17 m bgl and water table is found	
	and documentation in this regard	at a depth of 56 m BGL.	
	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-ali4		
	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	Not applicable	_
	or otherwise, passing through the		
	lease area and modification /		
	diversion proposed, if any, and		
	diversion proposed, it any, and		



	the impact of the same on the			1	
	·				
	hydrology should be brought out.				
30	Information on site elevation,	Site Elevation	220 m		-
	working depth, groundwater	above MSL	from MSL		
	table etc. Should be provided	Ultimate	17 m bgl		
	both in AMSL and bgl. A	Depth			
	schematic diagram may also be	Ground water	56 m		
	provided for the same.		BGL.		
31	A time bound Progressive	Greenbelt Dev	elopment Pla	an &	
	Greenbelt Development Plan	Recommended	·		
	shall be prepared in a tabular	for Greenbelt	•		
	form (indicating the linear and	detailed in Secti	•		
	quantitative coverage, plant	0.70 hectares		llotted	
	species and time frame) and	for greenbelt de			
	submitted, keeping in mind, the	Tor greenbeit de	velopiliellei		
	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	This is a small guarry and the	_
32	·	This is a small quarry and the	_
	infrastructure due to the Project	production is very less. 3 Nos. of	
	should be indicated. Projected	5T/10T tippers will be used for	
	increase in truck traffic as a	transport. The trips will be	
	result of the Project in the	minimum. Hence no major impact	
	present road network (including	on transport is expected.	
	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	Temporary Infrastructure & other	122
	facilities to be provided to the	facilities will be provided to the Mine	
	mine workers should be included	Workers after the grant of quarry	
	in the EIA Report.	lease and the same has been	
		discussed in Section 2.10.5 of	
		Chapter 2.	
34	Conceptual post mining land use	At the conceptual stage the	118
	and Reclamation and Restoration	quarried-out land will be fenced and	
	of mined out areas (with plans	lower benches will be allowed to	
	and with adequate number of	collect rain water to act as a	
	sections) should be given in the	temporary reservoir and Greenbelt	
	EIA report.	development will be carried out on	
		the top bench, unutilized areas and	
		haul roads.	



		Mine closure plan is detailed in	
		Section 2.9 of Chapter 2.	
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	Section 2.9 of Chapter 2. Details of occupational health and safety aspects are given under the Section 4.9 & Section 10.4.	217
36	measures with required facilities proposed in the mining area may be detailed. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No Public Health Implications anticipated due to this project. Details of CER are discussed under Chapter No. 8,	238
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.	This project provides employment to 23 people directly. Local people will be hired for unskilled labour. Through CER, nearby schools, hospitals will be benefitted. For CER, INR 5.0 Lakh is allocated. Based on the demand of the people during public hearing, further funds will be allocated, if necessary.	-



38	Detailed Environmental	Environmental Management plan	240
	Management Plan (EMP) to	details are given in Chapter 10.	
	mitigate the environmental	actano are given in enapter 101	
	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	During public hearing process, the	-
	commitment of the Project	opinions and demands of the people	
	Proponent on the same along	will be noted. The replies and	
	with time bound Action Plan with	commitment made by the	
	budgetary provisions to	proponent along with time bound	
	implement the same should be	action plan wherever applicable will	
	provided and also incorporated in	be provided in Final EIA/EMP report.	
	the final EIA/EMP Report of the		
	Project.		
40	Details of litigation pending	There is no litigation pending	-
	against the project, if any, with	against the project.	
	direction /order paced by any		
	Court of Law against the Project		
	should be given.		
41	The cost of the Project (capital	Project Cost is Rs. 75,92,000/-	-
	cost and recurring cost) as well	CER Cost is Rs.5.0/- lakhs	
	as the cost towards	EMP Cost	
	implementation of EMP should be	Capital Cost is Rs. 24.94/- Lakhs	
	clearly spelt out.	Recurring Cost is Rs. 189.75/-	
		Lakhs for five years.	
42	A Disaster management Plan	Disaster management plan are	228
	shall be prepared and included in	provided under section 7.3 of	
	the EIA/EMP Report.	Chapter-7.	



43	Benefits of the Project if the	Detailed in Chapter 8.	238
	Project is implemented should be		
	spelt out. The benefits of the		
	Project shall clearly indicate		
	environmental, social, economic,		
	employment potential, etc.		
44			
Α	Executive Summary of the	Yes, Enclosed	
	EIA/EMP Report	·	
В	All documents to be properly	All the documents are properly	-
	referenced with index and	referenced with index and	
	continuous page numbering.	continuous page numbering.	
С	Where data are presented in the	Yes, Complied	-
	Report especially in Tables, the		
	period in which the data were		
	collected and the sources should		
	be indicated.		
D	Project Proponent shall enclose	Baseline monitoring results are	
	all the analysis/testing reports of	detailed in Chapter 3. Original	
	water, air, soil, noise etc. using	Baseline monitoring reports will be	
	the MoEF&CC/ NABL accredited	made available during appraisal of	
	laboratories. All the original	the project.	
	analysis/testing reports should		
	be available during appraisal of		
	the Project,		
E	Where the documents provided	Yes, complied	-
	are in a language other than		
	English, an English translation		
	should be provided.		
F	The Questionnaire for	Yes, complied	-
	environmental appraisal of		
	mining projects as devised earlier		
	by the Ministry shall also be filled		
	and submitted.		



G	While preparing the EIA report,	Noted & Agreed -
	the instructions for the	Noted & Agreed
	Proponents and instructions for the Consultants issued by	
	,	
	MoEF&CC vide O.M. No. J- I	
	1013/41/2006-IA.11 0) dated	
	4th August, 2009, which are	
	available on the website of this	
	Ministry, should be followed.	
Н	Changes, if any made in the basic	Noted & Agreed -
	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-l l0l	Yes, Complied -
	I161812010-1A.II (I) dated	
	30.5.2012, certified report of the	
	status of compliance of the	
	conditions stipulated in the	
	Environment Clearance the	
	existing operations of the project,	
	should be obtained from the	
	Regional office of Ministry of	
L		



	Environment, Forest and Climate		
	Change, as may be applicable.		
J	The EIA report should also	Surface Plan and Geological Plan –	
	include (i) surface plan of the	Figure No. 2.8.	
	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.		



1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project.

EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

Rough Stone are the major requirements for construction industry. This EIA report is prepared by considering Cumulative load of all proposed & existing quarries located within 500 m radius of the project area.

This proposal is towards obtaining environmental clearance for Rough Stone and Gravel Quarry located at survey nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu, for production capacity of 2,06,540 m³ of Rough Stone and 38,752 m³ of Gravel for 5 years. The mining plan has prepared and same was approved by Assistant Director, Dept. of Geology & Mining, Tiruchirappalli vide Rc.No.302/2023/Mines dated 23.08.2023.

This proposed project comes under cluster classification, based on the Assistant Director, Geology & Mining, Tiruchirappalli letter, vide Rc.No.302/2023/Mines dated 23.08.2023. So this project has to obtain Terms of Reference for conducting EIA studies. Two existing quarries plus this proposed quarry found within the 500m radius of this project site. Total Cluster area (1 Proposed + 2 Existing) is 6.93.5 Ha including this lease area, and are detailed in below Table. Cluster area



calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016. Satellite image of Quarries in Cluster is shown in Fig 1.1.

Table - 1.1 Cluster Mines Details				
Extent	Proponent	Status of lease		
2.65.0 Ha	Tvl.RR. Infra Construction	Existing		
1.66.5 Ha	J. Magarunisa	LAISUNG		
2.62.0 Ha	R. Arumugam	Proposed		
	2.65.0 Ha 1.66.5 Ha	Extent Proponent 2.65.0 Ha Tvl.RR. Infra Construction 1.66.5 Ha J. Magarunisa		

Total extent is **6.93.5 Ha** including this proposed project.

As per MoEF&CC OM: F.No.L-11011/175/2018-IA-II(M), dated 12.12.2018, the common EIA/EMP report has to be prepared for the cluster area based on ToR recommended by SEIAA. Therefore, the applicant applied for ToR through Parivesh website vide online proposal no. SIA/TN/MIN/445806/2023. The ToR proposal was placed in 423rd SEAC meeting, dt 15.11.2023. Then ToR has been issued by the SEIAA vide Lr.No. SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023 to prepare the draft EIA report as per the recommended ToR for conducting Public hearing and obtaining Environmental Clearance from the SEIAA.



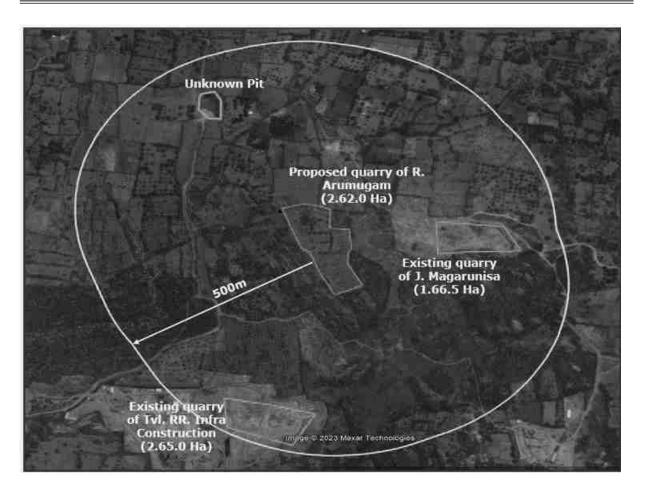


Figure 1.1 Satellite Image showing cluster quarries

1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1 IDENTIFICATION OF PROJECT

The applicant Thiru. R. Arumugam, proposed to quarry Rough Stone and Gravel for the period of five years in patta land over an area of 2.62.0 Ha located in survey nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu. The proposed project details are given below.

Table -1.2 Project Identification

Name of the Project	Rough Stone and Gravel Quarry of Thiru.R. Arumugam
	survey nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I
	Village: Lekkanayakkanpatti



Location of the Project	Taluk: Marungapuri
	District: Tiruchirappalli
	State: Tamil Nadu
Extent	2.62.0 Ha.
Type of Land	Patta Land registered in the name of the Applicant, vide patta No.1235. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7.

1.2.2 IDENTIFICATION OF PROJECT PROPONENT

Table -1.3- Details of Project Proponent

Name of the Project Proponent	Thiru.R. Arumugam
Communication address	S/o. Ramaiah
	No. 47, North Street,
	Lembalakudi Pudukottai District,
	Pin Code- 622 412
Mobile No.	7871484409
Email ID	Ramaiyaharumugam81@gmail.com

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 NATURE AND SIZE OF THE PROJECT

The quarrying operation is proposed to be carried out by Opencast semi–Mechanized Mining Method by jack hammer drilling, slurry blasting by forming 5.0 m bench height and 5.0 m bench width. Excavator and tippers are proposed for Loading and transportation. Geological Resources are estimated as 7,86,000 m³ of Rough Stone, 52,400 m³ of Gravel for 10 years upto 32m BGL. whereas Mineable reserves are estimated as 2,56,905 m³ of Rough Stone, 38,752 m³ of Gravel formation upto a depth of 32 m BGL. The applicant has proposed to carry



out 2,06,540 m³ of Rough Stone and 38,752 m³ of Gravel formation for first five years up to the depth of 17 m bgl. The above said reserves and productions are as per Approved mining plan.

1.3.2 NATURE OF THE PROJECT

Sector	1(a) Non-Coal Mining		
Туре	Fresh Quarry Lease Area		
Category	B1 (Cluster Situation)		
Mineral	Minor mineral of Rough Stone and Gravel		

1.3.3 LOCATION OF PROJECT

The proposed Quarry lease area is situated at S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu. The area lies in the north latitude of 10°20'06.49"N to 10°20'15.63"N and eastern longitude of 78°20'44.53"E to 78°20'50.95"E. Location of the proposed project is shown in Figure 2.1 and the satellite imagery of the project site is shown in Figure 2.2.

1.4 IMPORTANCE OF THE PROJECT TO THE REGION

Gravel and Rough stone will continue to be a staple in construction, decoration and industry for years to come. As recycling picks up, mining and quarries may slow down, but we will always need rough stone in general construction and industry.

Natural gravel is often used in walkways, driveways and decorative hardscaping for several reasons.



1.5 REGULATORY COMPLIANCES

Understanding of the applicable environmental legislative framework is crucial for understanding the scope of the EIA study. With respect to prevention and control of environmental pollution, the following Acts and Rules of MoEF&CC (Ministry of Environment Forests and Climate Change), GoI (Government of India) govern the proposed project. The applicable environmental legislation for the proposed mining project is detailed below,

- Environment protection Act, 1986
- EIA Notication, 2006 & Subsequent amendments
- Water Pollution (Prevension & Control) Act, 1974
- Air Pollution (Prevention & Control) Act, 1981
- Noise Pollution (Regulation 7 Control) Rules, 2000
- Mines Act, 1952
- Tamil Nadu Minor Mineral Concession Rules, 1959
- Mines and Minerals (development and regulation) Act,1957
- Minor Minerals Conservation and Development Amendment Rules 2018
- State Minor Mineral Concession Rules (GMMCR), 2017
- Explosive Act ,1884
- Explosive Rules, 2008
- Hazardous and other Wastes (management and Transboundry Movement)
 Rules, 2016
- Batteries (Management and Handling) Rules 2010
- Solid Waste Management Rule 2016

1.5.1 STATUTORY DETAILS:

a) District Survey Report:

The proposed quarry lease is located in Tiruchirappalli District. The District Survey Report for Tiruchirappalli District has been issued by the Collector, Dept. of Geology and Mining, Tiruchirappalli, This DSR has been prepared in line with MoEF & CC S.O. 3611(E) dated 25.07.2018.



b) Precise Area Communication:

The Project Proponent has obtained Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tiruchirappalli, vide Rc.No.302/2023/Mines dated 11.08.2023. **The letter copy enclosed as Annexure – 1.**

c) Mining Plan Approval:

The project proponent has prepared Mining Plan under rule 19 (1), 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Assistant Director, Dept. of Geology & Mining, Tiruchirappalli vide Rc.No.302/2023/Mines dated 23.08.2023. **The approval letter along with approved plan is enclosed as Annexure – 2.**

d) 500m radius quarry features:

The project proponent has obtained an official letter from Assistant Director, Dept. of Geology & Mining, Tiruchirappalli vide Rc.No. 302/2023/Mines dated 23.08.2023. **The letter copy enclosed as Annexure – 3.**

e) VAO certification regarding 300 meter features of the project area.

There are no historical places, schools, cemeteries, HT and LT lines, temples, bird sanctuaries, and wildlife sanctuaries within 300 metres of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Lekkanayakkanpatti village, dated 02.09.2023.**The letter copy enclosed as Annexure –4.**

f) Blasting Agreement:

The Project Proponent have agreement with Selvam Explosives to carry out the blasting operation for the proposed quarry. **The Blasting Agreement is enclosed as Annexure – 6.**



g) Land document of the proposed lease area:

It is a Patta land registered in the name of the Applicant, vide patta No.1235.

The copy of the Patta, Adangal and A-Register are enclosed as

Annexure -7.

1.5.2 SCREENING

As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006 and its subsequent amendments the proposed mining project falls under 'Category B1(Cluster Situation)', which requires Environmental Clearance from the State Environmental Impact Assessment Authority (SEIAA). The project proponent has appointed M/s. Global Mining Solutions, Salem, who are accredited by the National Accreditation Board for Education and Training (NABET), Quality Council of India (QCI), New Delhi, under the registration number NABET/EIA/2326/IA 0110. Their role is to carry out an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) study in compliance with the Ministry of Environment, Forest and Climate Change (MoEF & CC) requirements.

1.5.3 SCOPE OF THE STUDY

In line with the prescribed Terms of Reference (TOR), the area comprising 10 km radius around the proposed mine lease boundary is considered as the study area. The EIA/EMP report has been prepared following the generic structure specified in the EIA Notification 2006. The detailed studies have been conducted as per prescribed Standard TOR issued by SEIAA, Tamil Nadu vide Lr.No. SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023. The point wise compliance for the ToR has been incorporated in this EIA/EMP report.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for this applied project area. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust



generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the Period of October to December 2023 for various environmental components so as to assess the anticipated impacts due the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to this proposed project.

The scope of study broadly covered as below,

- Literature review and collection of secondary data relevant to the study area.
- Establish the baseline environmental aspects in and around the proposed project covering 10 km radius.
- Identify various existing pollution loads due to various mining activities.
- Predict incremental levels of pollutants in the study area due to the proposed operations.
- Establishing and analyzing demographic profile including sex ratio, literacy rate, SC/ST, workers classification, land use categorization, etc in the project influenced area
- Evaluate the predicted impacts on various environmental attributes in the study area by using scientifically developed and widely accepted environmental impact assessment methodologies.
- Prepare an Environment Management Plan (EMP) outlining the measures for improving the environmental quality and identify critical environmental attributes that are required to be monitored in the post-project scenario.
- To assess the impacts on human settlement in the project influence area Socio-Economic Assessment
- Cumulative impact assessment for the quarries in cluster.



1.6 NEED AND JUSTIFICATION OF THE PROJECT

- Proposed mining project will fulfill the local market requirement for real estate and infrastructure industry. This project will also provide employment to local people helping them earn livelihood.
- Employment generated consequent to the mining activity in the project will be benefit local and rural population and will have multiplier effects on local economy.
- The Project will give tremendous boosts to the local and regional economy benefiting the population.
- The social benefits arising out of this proposal can be expressed in terms of increase in the standards of living of local population, educational opportunities, training and development of skills etc.

1.7 STRUCTURE OF THE REPORT

As per the new guidelines of the MoEF & CC the report has been divided into the following chapters and presented as follows:

1. Introduction

This chapter describes the profile of the project proponent, name and contact address with email, project consultants, the purpose of the project, brief description of the project, applicable environmental regulations, objectives and methodology for EIA studies etc.

2. Project Description

This chapter gives a brief description of the project such as the type of project, need for the project, its location, approachability, layout, etc of the proposed project, the project implementation schedule, estimated cost of development etc



3. Description of the Environment

This chapter presents details of the baseline environmental status for microclimate, air quality, noise, water quality (surface and ground), soil quality, flora, fauna and socioeconomic status etc.

4. Anticipated Environmental Impacts & Mitigation Measures

This chapter discusses the possible sources of pollution and environmental impacts due to the project during operation phases and suggests the mitigation measures.

5. Analysis of Alternatives (Site And Technology)

This chapter discusses the analysis of the various alternatives for the technology as well as the site and gives the selection of the most feasible alternative.

6. Environmental Monitoring Program

This chapter discusses the details about the environmental monitoring program during operation phases. The technical aspects of monitoring the effectiveness of mitigation measures are covered in this chapter.

7. Additional Studies

This chapter covers information about the additional studies conducted for this project such as the Risk Analysis, Emergency Response and Disaster Management Plan.

8. Project Benefits

This chapter presents the benefits from this project

9. Environmental Cost Benefit Analysis

This chapter deals with the Environmental Cost Benefit Analysis which is recommended during the scoping stage.



10. Environmental Management Plan

This chapter deals with the EM for the proposed sand mining projects and indicates the measures proposed to minimize the likely impacts on the environment during and operation phases and budgetary allocation for the same.

11. Summary and Conclusion

This chapter deals with the overall justification for implementation of the project and explanation of how, adverse effects have been mitigated.

12. Disclosure of Consultant

This chapter deals with the details of consultants engaged and the NABET accreditation details of environmental consultants.



2.0 PROJECT DESCRIPTION

2.1 TYPE OF THE PROJECT

The proposed activity is the extraction of Rough Stone by open cast mechanized mining method and proposed to produce 2,06,540 m³ of Rough Stone, 38,752 m³ of Gravel formation for five years up to the depth of 17m bgl.

2.2 LOCATION OF THE PROJECT

The proposed quarry project is located in survey nos. S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu as shown in Figure 2.1. The area is represented by Survey of India Toposheet No. 58 J/07. The lease boundary with Geo Co-ordinates is shown in Figure 2.2. the area lies in the north latitude of 10°20'06.49"N to 10°20'15.63"N and eastern longitude of 78°20'44.53"E to 78°20'50.95"E. Latitude and Longitude of all boundary pillars are given in Table 2.3 and the satellite imagery of the project site is shown in Figure 2.2.

Table 2.1 Boundary Coordinates of the Project

Сомпоно	Co- ordinates					
Corners	Latitude	Longitude				
1	10° 20' 06.49"N	78° 20' 48.74"E				
2	10° 20' 08.72"N	78° 20' 47.53"E				
3	10° 20' 10.77"N	78° 20' 46.76"E				
4	10° 20' 11.16"N	78° 20' 46.07"E				
5	10° 20' 15.17"N	78° 20' 44.53"E				
6	10° 20' 15.63"N	78° 20' 46.25"E				
7	10° 20' 15.44"N	78° 20' 47.35"E				
8	10° 20' 15.10"N	78° 20' 48.35"E				
9	10° 20' 13.16"N	78° 20' 48.33"E				
10	10° 20' 13.10"N	78° 20' 49.88"E				
11	10° 20' 11.07"N	78° 20' 50.05"E				
12	10° 20' 10.80"N	78° 20' 49.78"E				
13	10° 20' 09.65"N	78° 20' 49.74"E				
14	10° 20' 07.45"N	78° 20' 50.95"E				



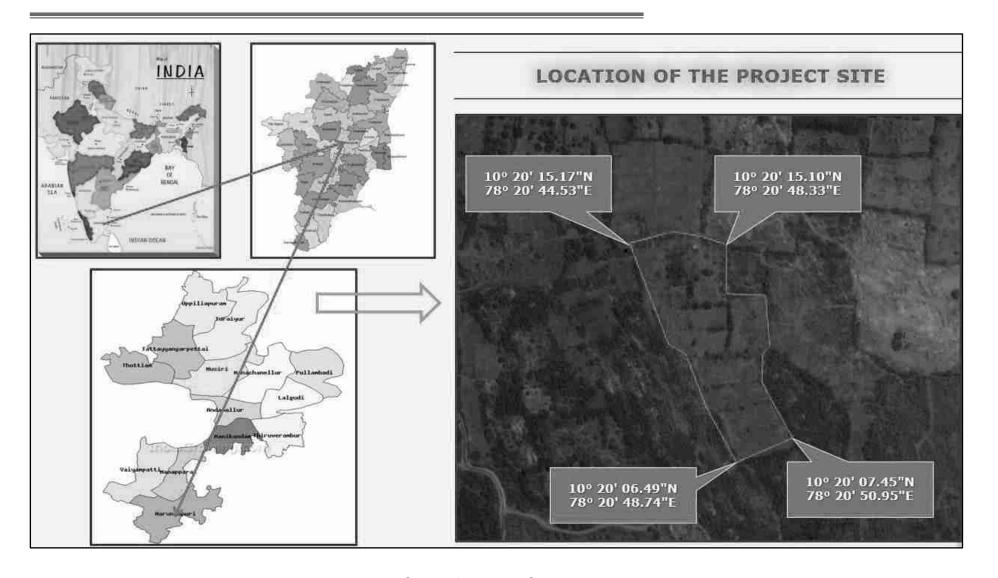


Figure 2.1 Location Map

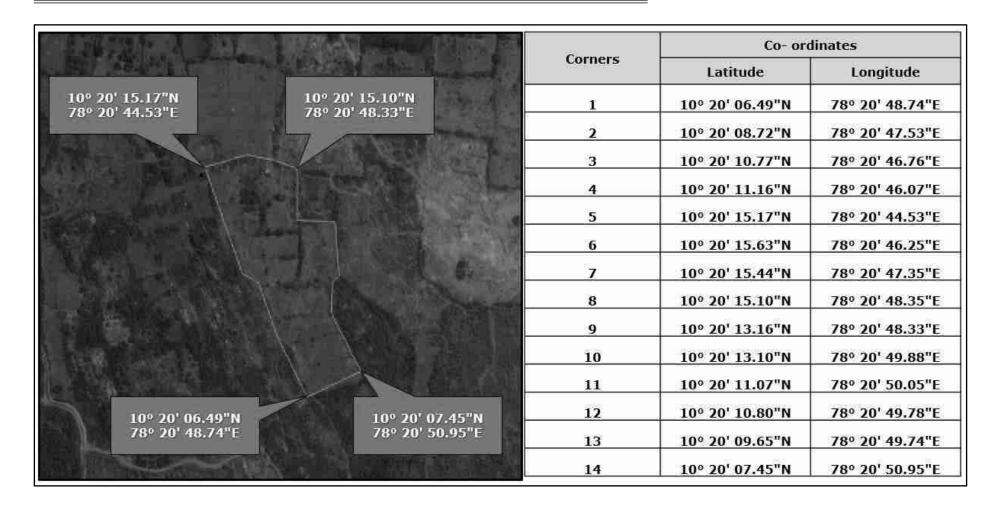


Figure 2.2 Google Map showing corners coordinates



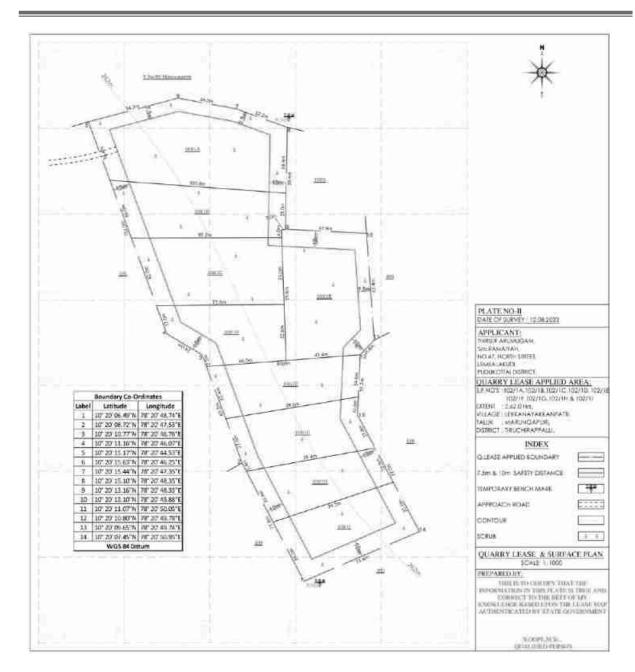


Figure 2.3 Lease Plan

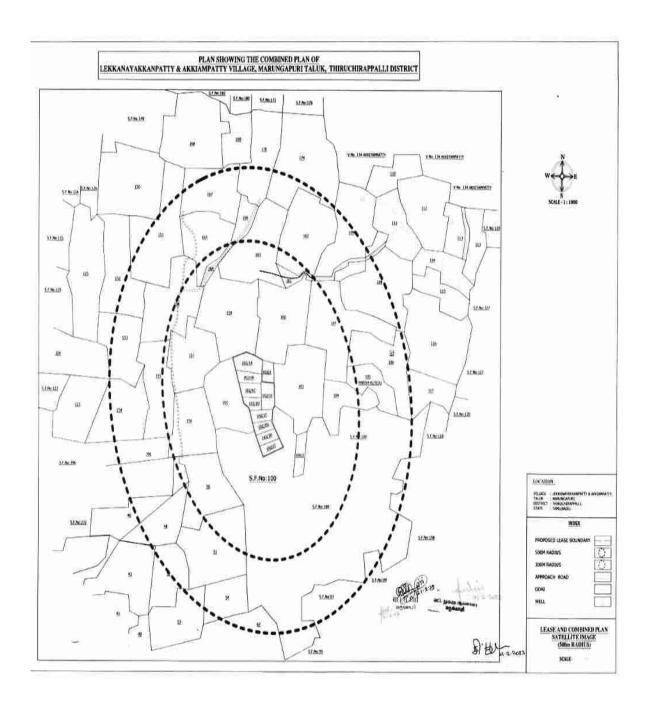


Figure 2.4 VILLAGE MAP SHOWING 300m AND 500m RADIUS OF

THE PROJECT AREA



2.2.1 LEASE DETAILS

This proposed project area is classified as Patta land registered in the name of the Applicant, vide patta No.1235. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7. & does not fall within 10 km radius of any Eco – sensitive zone, Wild life Sanctuary, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves. The M.L area details are presented in below Table.

Table 2.2 Mine Lease Area and its Ownership

Location	S.F. No	Area in Ha	Patta no	Remarks
	102/1A	0.48.50		
	102/1B	0.27.50		
Lekkanayakka	102/1C	0.33.00		
npatti Village,	102/1D	0.23.00	1235	It is a Patta land in the name of the Applicant, vide Patta No.1235. The copy of the Patta, Adangal and A-
Marungapuri	102/1E	0.38.00		
Taluk, Tiruchirappalli	102/1F	0.23.00		
District	102/1G	0.23.00		Register are enclosed as
	102/1H	0.20.00		Annexure -7
	102/1I	0.26.00		
Total		2.62.00		

Site Connectivity

- ♣ There is an existing road from the area leads to Kottaiyur Natham Akkiyampatti village road on Western side of the area.
- ➡ The Nearest Railway line is Tiruchirappalli Dindigul line which is about 23.6 km on northwestern side of the area.
- ➡ The National Highway (NH-785) Natham Thuvarankurichi is about 1.8km on northern side of the area.
- ➡ The State Highway (SH-71A) Manapparai Thuvarankurichi is about 6.4Km on northeastern side of the area.



Table 2.3 Site Connectivity

Nearest Roadway	The National Highway (NH-785) Natham- Thuvarankurichi -
	1.8km(N) and The State Highway (SH-71A) Manapparai –
	Thuvarankurichi is - 6.4Km (NE).
Nearest Village	Sigampatti – 1.0 km (NW)
Nearest Railway	Vaiyampatti – 23.13 km (N)
Nearest Airport	Tiruchirappalli – 62.0 Km (NE)

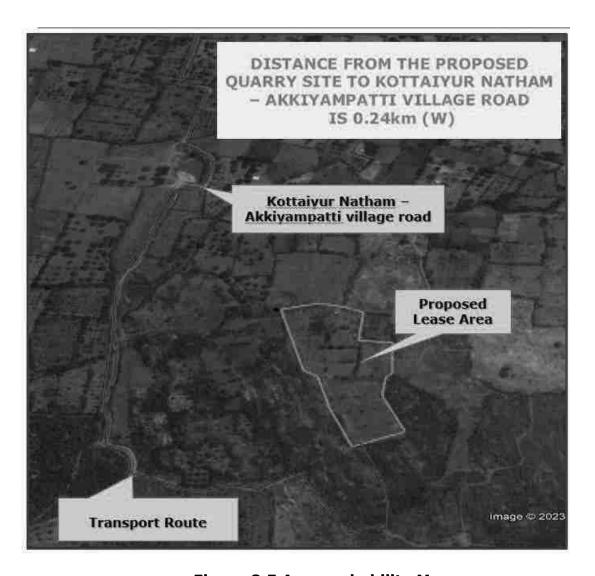


Figure 2.5 Approachability Map











Figure 2.6 Site Photographs

2.3 LAND USE PATTERN OF THE PROJECT AREA

The entire project site is Patta land registered in the name of the Applicant, vide patta No.1235. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7. The land use pattern of the mine lease area as of today and conceptual stage given in Table No. 2.4.



Table 2.4 Land use pattern of the Project area

Description	Present Area in Ha.	Area in use during the quarrying period (Ha)
Quarrying pit	NIL	1.90.0
Infrastructure	NIL	0.01.0
Roads	NIL	0.01.0
Greenbelt	NIL	0.70.0
Unutilized	2.62.0	0.00.0
Total	2.62.0	2.62.0

During operation & in the Post mining stage, the Safety Zone of 0.70.0 Ha., will be planted and maintained with 400 numbers of saplings. In the conceptual stage, the quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

2.4 TOPOGRAPHY AND DRAINAGE

The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 2 m (Avg) Gravel formation and sloping towards Southeastern side of the area, the altitude of the area is above 262 m (maximum) from MSL. No water bodies is found nearby the applied area.

2.5 GEOLOGY

2.5.1 REGIONAL GEOLOGY

The Tiruchirappalli district exposes crystalline rocks of Archaean and Proterozoic age, Upper Gondwana Formations, sedimentary rocks of Mesozoic age, Miocene and Quaternary sediments.

Lithology	Group	Age
Alluvium, Soil and Morrum		Recent
Ferrogeneous sandstone		Tertiary
Marl and Marly Limestone		Upper Cretaceous
Clastic bedded limestone and		
Marl		



Massive pink coral limestone Grey Shale		Lower Cretaceous
Conglomerate and Sandstone		Upper Gondwana
	Unconformity	-
Syenite Complex Ultra-basic complex(s)	Alkali Group	Proterozoic
Mixed gneisses, amphibolites, pyroxenites, calc-gneisses, Charnockite, Garnetiferous Gneiss and Crystalline rocks	Charnockite Group	Archaean

2.5.2 LOCAL GEOLOGY

The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high- grade metamorphic rock.

The strike of the Charnockite formation is N45°E – S45°W with vertical dipping. The general geological succession of the area is given as under.

Age	Rock Type
Recent	Gravelly Soil
	Unconformity
Archaean	Dolerite dyke
	Charnockite
	Peninsular
	Gneissic complex and Calc Gneiss

2.6 SIZE AND MAGNITUDE OF THE OPERATION

The proposed activity is the extraction of Rough Stone and Gravel by open cast mechanized mining method over an extent of 2.62.0 Ha and produce 2,06,540 m³ of Rough Stone, 38,752 m³ of Gravel formation for five years up to the depth of 17m bgl. The details of geological and mineable reserves in the lease area have been provided below in the subsequent sub section.



2.7 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone and Gravel were calculated based on Cross-Section Method to cover the maximum lease area.

2.7.1 GEOLOGICAL RESOURCES

The quarrying is restricted up to a depth of 32 m Below ground level only. Availability of Resources is given below.

Table 2.5 Available Geological Resources

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel formation in m ³	Geological Resources of Rough stone in m ³
	118	98	2	23128	23128	-
XY-AB	118	98	30	346920	-	346920
		То	tal		23128	346920
	65	105	2	13650	13650	-
XY-CD	65	105	30	204750	-	204750
	Total				13650	204750
	107	73	2	15622	15622	-
XY-EF	107	73	30	234330	-	234330
	Total				15622	234330
		Grand 1	Γotal	52400	786000	

Gravel Formation : 52,400 m³

The Geological Resources of Rough stone : 7,86,000 m³

2.7.2 MINEABLE RESERVES

The mineable reserves are calculated by considering bench formation and leaving 7.5 m (Safety Barrier all around the applied area) and 10 m safety distance in applied lease areas.



Table 2.6 – Available Mineable Reserves

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m³	Mineable Reserves of Rough stone in m ³
	I	110	78	2	17160	17160	-
	II	108	73	5	39420	-	39420
	III	101	60	5	30300	-	30300
XY-AB	IV	95	47	5	22325	-	22325
	V	88	34	5	14960	-	14960
	VI	82	21	5	8610	-	8610
			Total			17160	115615
	I	65	87	2	11310	11310	-
	II	65	82	5	26650	-	26650
	III	65	69	5	22425	-	22425
XY-CD	IV	65	56	5	18200	-	18200
A1-CD	V	64	43	5	13760	-	13760
	VI	58	30	5	8700	-	8700
	VII	51	17	5	4335	-	4335
			Total		11310	94070	
	I	97	53	2	10282	10282	-
	II	95	48	5	22800	-	22800
XY-EF	III	88	35	5	15400	-	15400
	IV	82	22	5	9020	-	9020
	Total					10282	47220
	256905						

The mineable reserve is computed as 2,56,905m³ of Rough stone 38,752m³ of Gravel formation upto a depth of 32m below ground level only.

2.8 PROCESS DESCRIPTION AND TECHNOLOGY

2.8.1 PROCESS DESCRIPTON

The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.



- Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy buyers.
- Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.
- The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. The process diagram is provided in Figure 2.7. The production plan and cross section is given in Figure 2.8 and conceptual plan and conceptual cross section is given in Figure No. 2.9

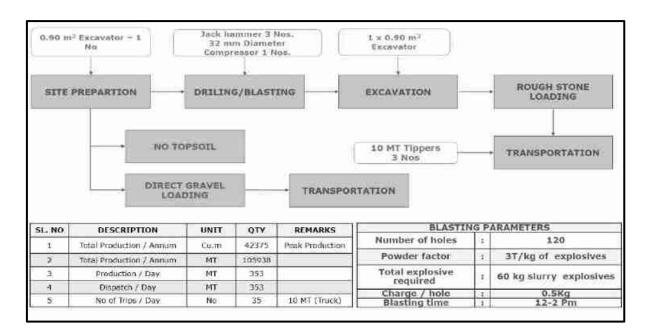


Figure 2.7 Process Flow Diagram

Table 2.7 – Machinery Details

S.NO	Name of the Equipment	Capacity	Requirement
1	Jack hammer	32 mm Dia	3
2	Compressor	-	1
3	Excavator	0.9 Cu.m	1
4	Tippers	5 / 10 T	3



2.8.2 DRILLING AND BLASTING PARAMETERS

Drilling and Blasting will be carried out as per parameters given below,

Diameter of the hole	32-36 mm
Spacing	0.6m
Depth	1 to 1.5 m
Burden of hole	0.6m
Pattern of hole	Zigzag
Inclination of hole	70° from horizontal
Number of holes	120
Powder factor	6Ts/Kg of Explosives
Total explosive required	60 Kg slurry Explosives
Charge / hole	0.5Kg
Blasting time	12-2 Pm

2.8.3 TYPE OF EXPLOSIVE

Small dia, 25mm slurry explosive are proposed for shattering and heaving effect for removal of rough stone. No deep hole drilling or primary blasting is proposed.

2.8.4 STORAGE OF EXPLOSIVES

No proposal for storage of explosives within the project area, the applicant will engage authorized explosive agency to carry out the blasting and it will be supervised by competent and statutory foreman / mines manager as per DGMS guidelines.

2.8.5 PRODUCTION SCHEDULE

The year wise production schedule upto lease period of 5 years is given below, the year wise production is given in Figure 2.9.



Table 2.8 Year wise Production Plan

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Mineable reserve of Rough stone in m ³
I	XY-AB	I	110	78	2	17160	17160	-
		II	108	73	5	39420	-	39420
			Total				17160	39420
	XY-CD	I	65	87	2	11310	11310	-
II	XI-CD	II	65	82	5	26650	-	26650
11	XY-EF	I	65	53	2	6890	6890	-
	A1-EF	II	65	48	5	15600	-	15600
			Total				18200	42250
	XY-EF	I	32	53	2	3392	3392	-
		II	30	48	5	7200	-	7200
III	AI-Er	III	88	35	5	15400	-	15400
		IV	82	22	5	9020	-	9020
	XY-CD	III	30	69	5	10350	-	10350
			Total				3392	41970
IV	XY-CD	III	35	69	5	12075	_	12075
1V	XY-AB	III	101	60	5	30300	-	30300
			Total				-	42375
V	XY-AB	IV	95	47	5	22325	-	22325
_ v	XY-CD	IV	65	56	5	18200	-	18200
Total								40525
	Grand Total							206540

The mineable reserve is estimated as 2,56,905m³ of Rough stone 38,752m³ of Gravel formation upto a depth of 32m below ground level only but **the applicant** has proposed to carry out 2,06,540m³ of Rough stone 38,752m³ of Gravel formation upto a depth of 17m below ground level for the period of first five years.



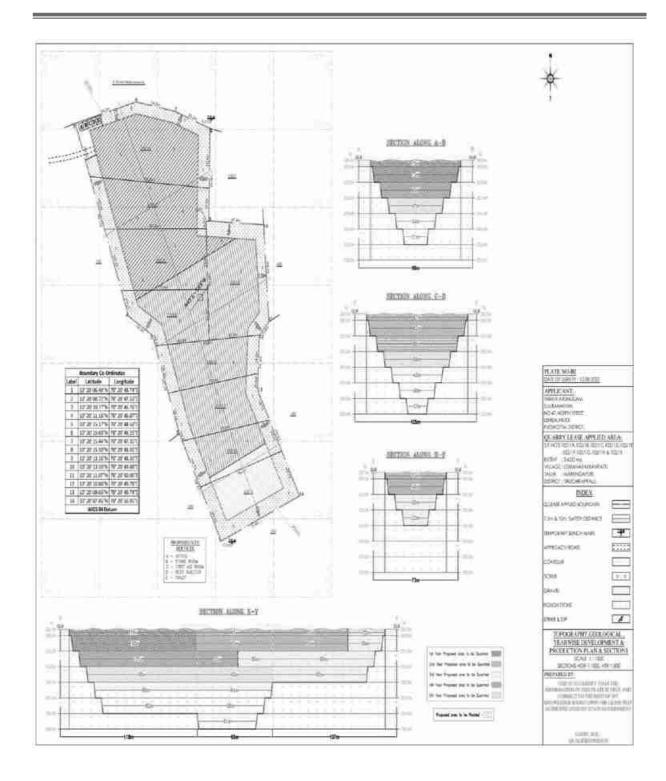


Figure 2.8 Production Plan and Cross Section



2.8.6 DISPOSAL OF WASTE

There is no overburden from this project, the entire mined out mineral will be directly loaded into tipper to the needy crushers/ other buyers for road project and construction works for filling and levelling low lying areas.

2.9 CONCEPTUAL MINING PLAN / FINAL MINE CLOSURE PLAN

Conceptual mining plan is prepared with an object of five years of systematic development of bench layouts, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructure etc.

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc. Conceptual cross section and mine closure plan is given in figure 2.9. The Mine closure budget is given in Table 10.2 of Chapter 10.

Table 2.9 - Ultimate Pit Dimension

Pit	Length in m (Max)	Width in m (Max.)	Depth in m (Max.)	
1	272	70	17	

Table 2.10 Post mining Land use Pattern

Description	Present Area in Ha.	Area in use during the quarrying period (Ha)
Quarrying pit	NIL	1.90.0
Infrastructure	NIL	0.01.0
Roads	NIL	0.01.0
Greenbelt	NIL	0.70.0
Unutilized	2.62.0	0.00.0
Total	2.62.0	2.62.0

• At the end of life of mine, the excavated mine pit / void of 1.90.0 Ha. will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.



- After mine closure the greenbelt (0.70.0 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure.
- The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.



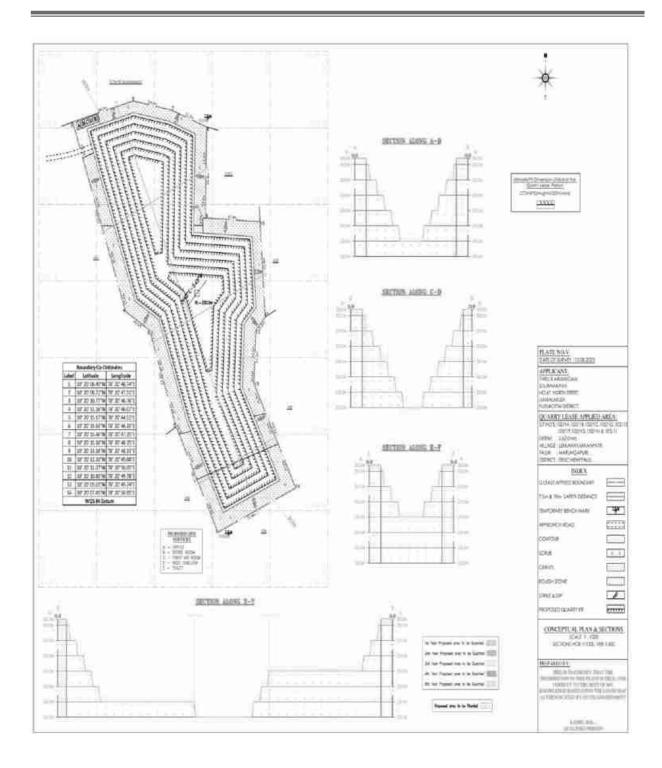


Figure 2.9 Conceptual Plan and Cross Section



2.10 PROJECT REQUIREMENT

2.10.1 WATER REQUIREMENT AND SOURCE

The total water requirement estimated for the quarry is 6.0 KLD. The required water will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose.

Table 2.11 Details of Water requirement

Activity	Water Requirement in KLD
Drinking & Domestic	2.0
Dust Suppression	2.5
Greenbelt Development	1.5
Total	6.0

2.10.2 POWER REQUIREMENT

All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.

2.10.3 FUEL REQUIREMENT

High speed Diesel (HSD) will be used for mining machineries.

i) For Rough Stone

Per hour excavator will consume	16 liters /hr	
Per hour excavator will excavate	50 m ³ of Rough Stone	
For 2,06,540 m ³	2,06,540 /50	
	= 4131	
So, Diesel consumption	=4131 X 16 litres	
	=66,096 litres of HSD	

ii) For Gravel

Per hour excavator will consume	10 liters /hr
Per hour excavator will excavate	100 m3 of Weathered Rock
For 38,752 m3	38,752/100
	= 388
So, Diesel consumption	=388 X 10 litres
	=3880 litres of HSD



The Total fuel consumption is around 69,976 litres of HSD for the entire period of life (5 years).

2.10.4 EMPLOYMENT GENERATION

The project will provide employment opportunities totally to 23 persons directly and 20 indirectly.

Skilled Operator		6 Nos
	Mechanic	1 No
	Mines Manager	
Fore Man / Mate		2 Nos
Semi-Skilled Driver		3 Nos
Unskilled Labours		10 Nos
	23 Nos	

2.10.5 INFRASTRUCTURE REQUIREMENT

This is a proposed project. Site services like mine office, first aid room, toilets etc. will be provided as semi-permanent structures.

2.10.6 PROJECT COST

The total project cost of this Rough stone and Gravel Quarry is Rs. 75,92,000/-

2.10.7 PROJECT IMPLEMENTATION SCHEDULE

- The proponent proposes to implement the production immediately after obtaining all the statutory approvals. The commercial operation will commence after the grant of Environmental Clearance. CTO and CTE will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the Environmental Clearance will be compiled before the start of mining operation. Expected project implementation schedule is provided below.
- This is a tentative schedule subject to various factor, hence unforeseen variations may occur.



Table 2.12: Proposed Schedule of Implementation

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





3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

As a precursor for the prediction of various types of environmental impacts likely to arise due to implementation of the project, it is essential to establish the baseline environmental setting of the project. Details of the baseline environmental parameters are required for decision making for the project design, implementation and operation from the environmental point of views. The data is to be generated through primary data collection (direct monitoring) and secondary sources (published data).

This chapter describes the environmental baseline data of core zone and surrounding areas of the project. The environmental baseline data includes the physical environment (comprising climate & meteorology, air, water, Noise and land components), biological environment and socio-economic environment, which may get affected due to the this proposed project.

3.2 STUDY AREA

The study area has been divided into two zones, namely, core and buffer zones. Core zone is considered as the total lease area of mine lease, while buffer zone encompasses an area of 10 km radius distance from the periphery of core zone. This chapter incorporates the description of existing environmental status in an area encompassed within 10 km radius from the boundary of mine lease. The environmental data for the following Environmental components were collected in the study area:

- Micro-meteorological monitoring in one of the representative locations.
- Ambient air quality study comprising gaseous, particulate matter at 6 different locations.
- Water quality analysis in 9 different locations (2 Surface Water & 6 Ground Water).
- Noise levels monitoring in 6 different locations
- Soil quality analysis in 3 locations.
- Flora & Fauna status.

- Land use & Land Cover.
- Hydrological study.
- Socio-economic survey.

3.3 STUDY PERIOD

The above-mentioned studies have been carried out systematically and meticulously as per relevant IS codes, CPCB, MoEF&CC guidelines during October to December 2023.

3.4 MONITORING LAB

The baseline information for air, water, noise, and soil was analysed by M/s. Shrient Analytical and Research Labs Pvt Ltd, # 416/15, Dharga Road, Perungalathur, West Tambaram, Chennai – 600 045. (Accredited by NABL as ISO/IEC/17025:2017) between October to December 2023.

3.5 ENUMERATIONS OF THE STRUCTURES LOCATED WITHIN 300M RADIUS FROM THE PROPOSED QUARRY SITE

Table 3.1 Structures within 300 m radius

RANGE	NO. OF STRUCTURES	Ref. Code	STRUCTURES DETAILS
0-50 m	0	0	-
50-100 m	0	0	-
100-150 m	0	0	-
150-200 m	1	1	Storage Shed - 161m(E))
200-250 m	0	0	-
250-300 m	1	2	Shed – 300m (N)



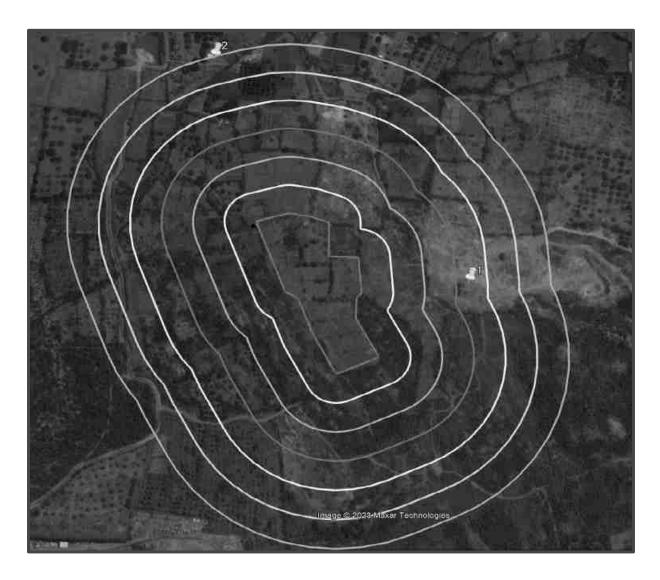
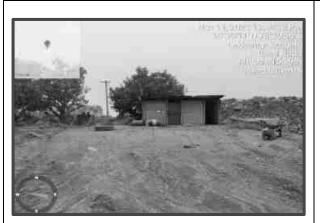


Figure 3.1 Structures within 300 m radius







1. Storage Shed – 161 m (E)

2. Shed - 300 m (N)

Figure 3.2 Photographs on Enumerations of the Structures within 300 m Radius



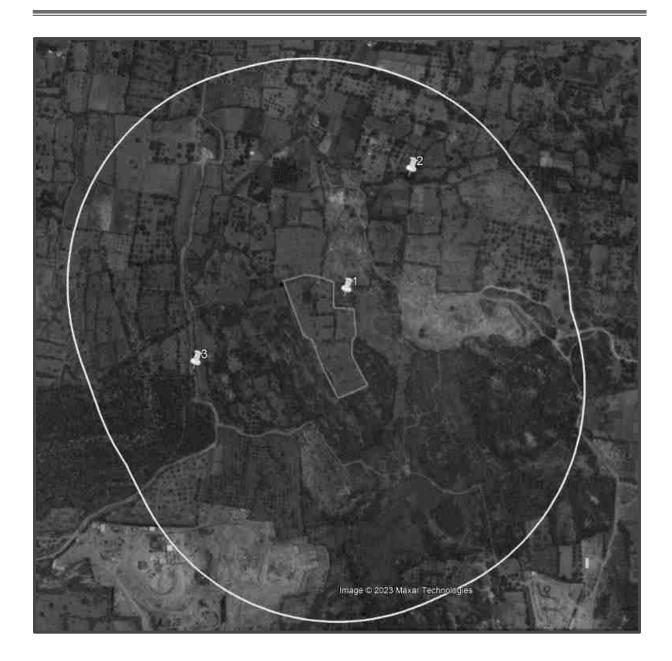


Figure 3.3 Environmental Features within 300 m radius







1. Kuttai – adjacent to the site

2. Odai - 300 (NE)



3. Kottaiyur Natham – Akkiyampatti village road – 240m (W)

Figure 3.4 Photographs on Environmental Features within 300 m radius

3.6 ENVIRONMENTAL SETTINGS OF THE PROJECT

The Environmental settings of the project covering 10km radius of study area is given in Table 3.2. The study area map is given in Figure- 3.6 and satellite image showing 10 km radius is given in Figure 3.5.

Table 3.2 Environmental Settings of the Study Area – 10 km radius

S.NO	Particulars	Description
1.	Latitude & Longitude	Latitude: 10°20'06.49"N to 10°20'15.63"N
		Longitude:78°20'44.53"E to 78°20'50.95"E
2.	Toposheet No.	58 J / 07
3.	The altitude of the area	220 m (MSL)



4.	Topography	Plain Terrain		
5.	Land use of M.L. area	Patta Land		
6.	Extent of the Lease area	2.62.0 Ha.		
7.	Nearest Highway	The National Highway (NH-785) Natham- Thuvarankurichi - 1.8km(N) and The State Highway (SH-71A) Manapparai - Thuvarankurichi is - 6.4Km (NE).		
8.	Nearest Railway Station	Vaiyampatti – 23.13 kr	m (N)	
9.	Nearest airport	Tiruchirappalli Airport -	- 62.0 Km - NE	
10.	Nearest Village	Sigampatti – 1.0 km (N	NW)	
11	Water Bodies	Core Zone - NIL		
		Buffer Zone		
		Within 1 l	cm Radius	
		Kuttai 1	Adjacent to the	
			eastern side of the	
			lease area	
		Odai	300 m (NE)	
		Tank	800 m (E)	
		1 km to 10 km Radius		
		Palar River	1.40 km - SW	
12.	Historical Places/Places of Tourist/ Archeological site	Nil within 10 km radius	5	
13.	Environmental Sensitive areas, Protected areas, National Park/ Wildlife Sanctuaries/Biosphere Reserves/Tiger Reserves/Migratory Corridors; Migratory routes etc	NIL within 10 km radiu	S	
14	Seismic Zone	Zone II (Least active)		
15	Reserved/Protected Forest	Reserve Forest - 280r	• •	
		Chinnayampatti R.F -	2.97km (W)	



		Vellimalai R.F - 3.62km (S)
		Madukamalai R.F - 4.06km (SW)
		Karumalai R.F - 5.3km (S)
		Nedunkuttu R.F - 6.80km (SW)
Reserve Forest - 2.09km (NW		Reserve Forest - 2.09km (NW)
		Velamalai R.F - 5.0km (NW)
		Mamalai R.F - 6.6km (NE)
16	Interstate boundary	NIL



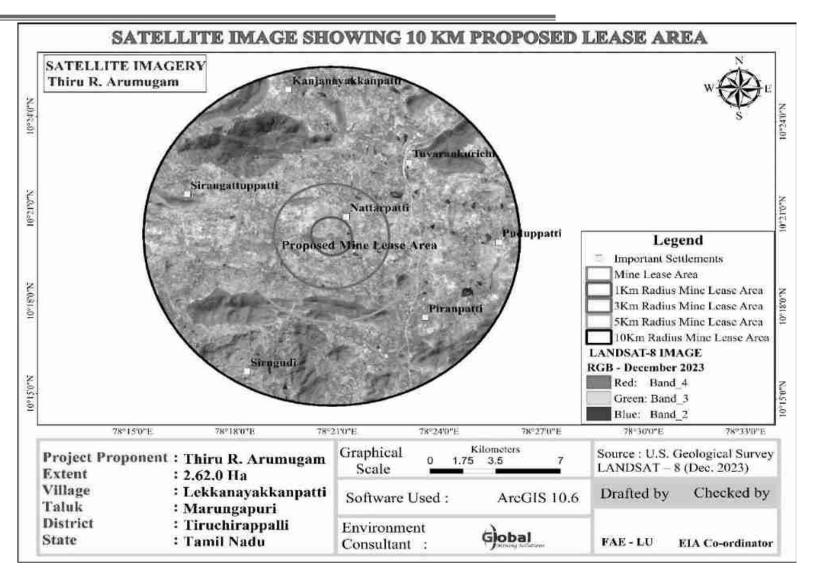


Figure 3.5 Satellite Image of the Study Area



Figure 3.6 Topo map Showing Study Area



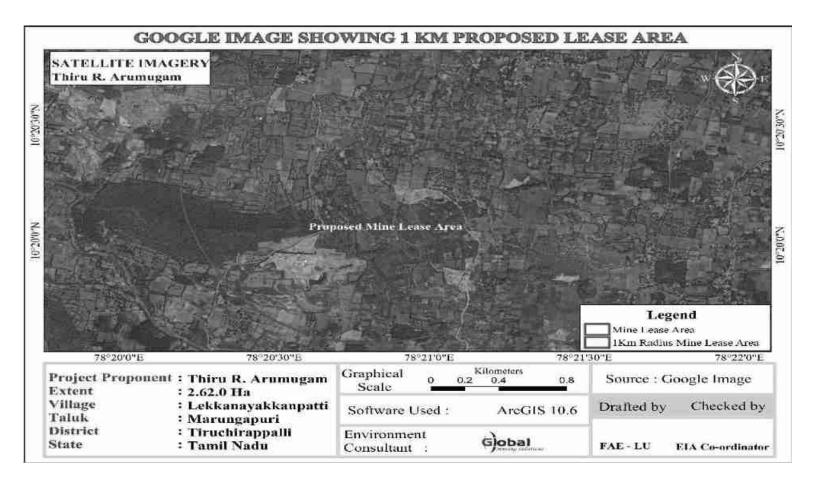


Figure 3.7 Google Image showing 1 km radius



3.7 EXISTING ENVIRONMENTAL SCENARIO

3.7.1 MICRO- METEOROLOGY

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

3.7.1.1 CLIMATE AND RAINFALL DATA

The climatic conditions of Tiruchirappalli are characterized by a tropical climate. In Tiruchirappalli, the quantity of rainfall during summers surpasses that of winters. As per the Köppen-Geiger classification, the prevailing weather conditions in this region are categorized under Aw. The average temperature in Tiruchirappalli is 28.6 °C | 83.4 °F. The rainfall here is around 823 mm | 32.4 inch per year.

Table 3.3 Rainfall Data

	Actual Rainfall in mm				
2017	2018	2019	2020	2021	Normal Rainfall in mm
690.0	506.6	635.0	796.6	1222.7	985

Seismic Sensitivity

The proposed project site falls in the seismic Zone II, low damage risk zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002.

Table 3.4 Meteorological Data Recorded at Site

S.No	Parameters	October to December 2023		
		Min	Max	Avg
1.	Temperature (0C)	20.8	34	26.62
2.	Relative Humidity (%)	40.72	100	79.05
3.	Wind Speed (m/s)	0	7.2	3.1
4	Predominant wind direction	Orientation Direction: Blowing From - NE Orientation Direction: Blowing Towards - SW		

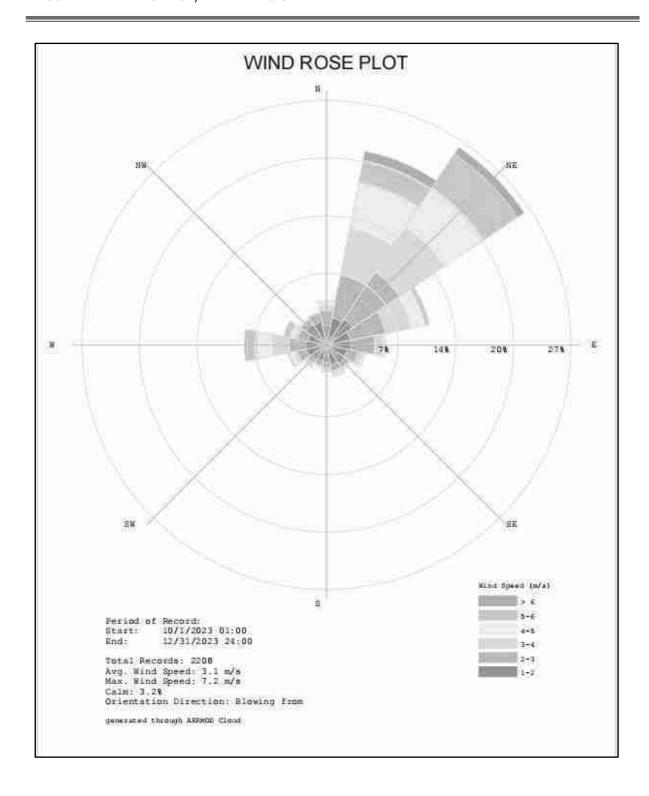


Figure 3.8 (a) Wind Rose Diagram – Blowing From (October – December 2023)



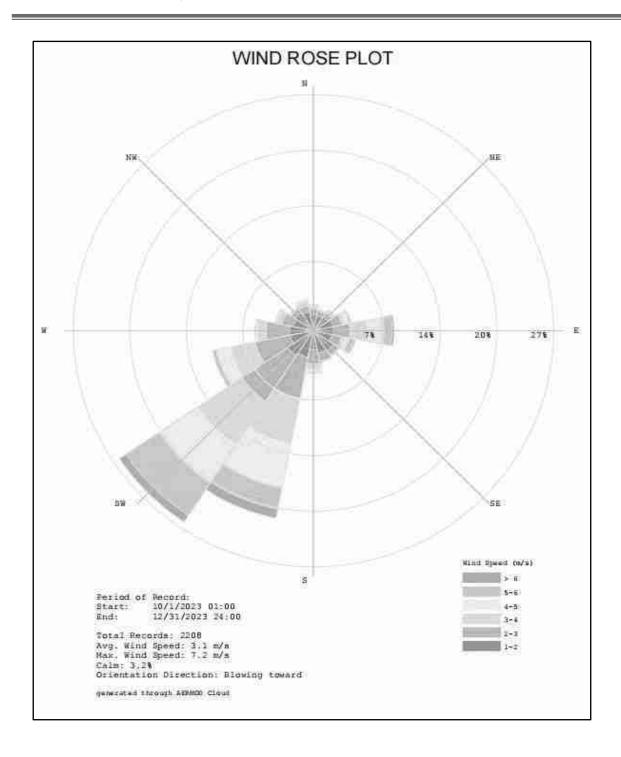


Figure 3.8 (b) Wind Rose Diagram – Blowing Towards (October – December 2023)



3.7.2 AIR ENVIRONMENT

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

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

3.7.2.1 SAMPLING & ANALYTICAL TECHNIQUES

Table 3.5 Methodology for Air Quality Monitoring

Parameter	Method
PM2.5	Gravimetric Method Beta -attenuation Method
PM10	Gravimetric Method Beta -attenuation Method
SO2	IS-5182 Part II (Improved West & Gaeke method)
NOx	IS-5182 Part II (Jacob & Hochheiser modified method)

3.7.2.2 FREQUENCY AND PARAMETERS FOR SAMPLING

Ambient air quality monitoring has been carried out with a frequency of two samples per week at Six (6) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period October to December, 2023. The baseline data of ambient air has been generated for PM₁₀, PM _{2.5}, Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2) and Carbon Monoxide Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.



It was ensured that the equipment was placed preferably at a height of at least 1.8 to 2.2 m above the ground level at each monitoring station, for negating the effects of wind-blown ground dust. The equipment was placed at open space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

3.7.2.3 AMBIENT AIR QUALITY MONITORING STATIONS

Six (6) monitoring stations were set up in the study area as depicted in Figure 3.9 for assessment of the existing ambient air quality. Details of the sampling locations are given below.

Table 3.6 – Ambient Air Quality Monitoring Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
1	A1	Within Mine Lease area	10° 20'11.72"N & 78° 20'47.65" E
2	A2	Seegampatti	10° 20'42.72"N & 78° 20'35.42" E
3	A3	Naveen Garden	10° 19'26.04"N & 78° 20'46.55" E
4	A4	Kottaiyur Natham	10° '19.10.40"N & 78° 20'12.02" E
5	A5	Akkiyampatti	10° 21'43.20"N & 78° 21'35.54" E
6	A6	Lekkanaykanpatti	10° 20'53.55"N & 78° 22'12.45" E



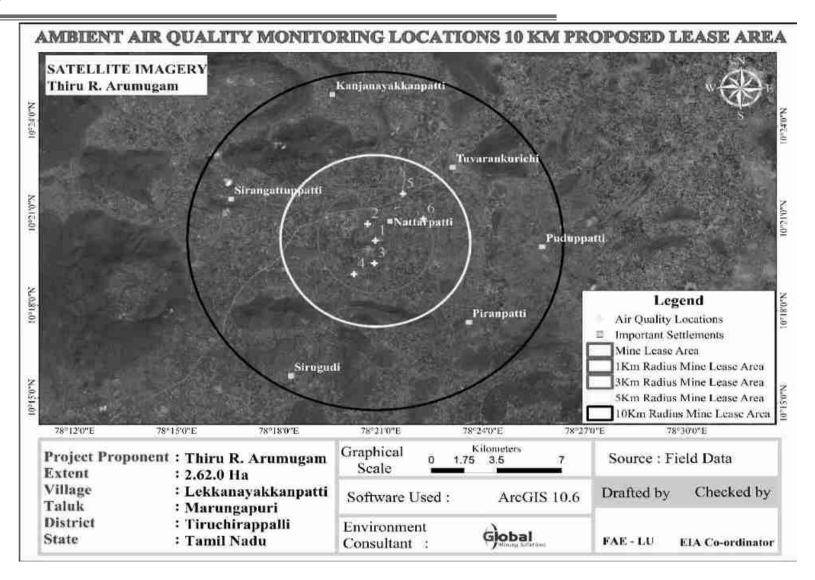
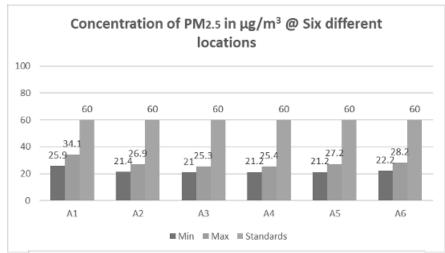
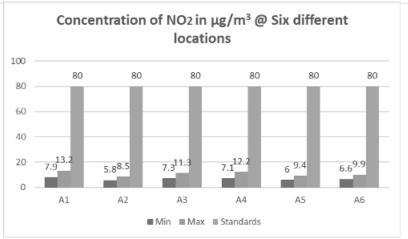


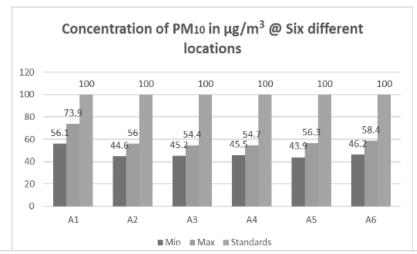
Figure 3.9 Ambient Air Quality Monitoring Locations

Table 3.7 Ambient Air Quality Data

	Ambient Air Quality										All Val	ue in μg/ι	m3	
	Parameters		PM10			PM2.5			SO2			NO2		
S.NO	Locations	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	
1	A1-Mine Lease Area	56.1	65.29	73.9	25.9	30.16	34.1	4.8	5.80	6.6	7.9	10.64	13.2	
2	A2 - Seegampatti	44.6	50.4	56.0	21.4	24.2	26.9	3.9	5.2	6.8	5.8	7.1	8.5	
3	A3 - Naveen Garden	45.2	49.5	54.4	21.0	23.0	25.3	3.5	4.2	5.0	7.3	9.2	11.3	
4	A4 - Kottaiyur Natham	45.5	50.1	54.7	21.2	23.3	25.4	3.5	4.6	5.8	7.1	9.4	12.2	
5	A5 - Akkiyampatti	43.9	49.7	56.3	21.2	24.0	27.2	4.2	5.5	6.9	6.0	7.3	9.4	
6	A6 - Lekkanaykanpatti	46.2	51.9	58.4	22.2	25.0	28.2	4.5	5.8	7.2	6.6	7.9	9.9	
7	CPCB NAAQS 2009		100			60	_		80			80		







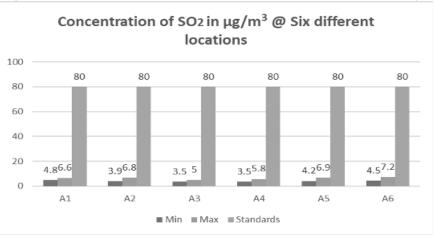


Figure -3.10 - Graphical Representation of Air Quality Data



3.7.2.4 DISCUSSION

From the table it is seen that, in core zone, the PM10 values were in the range of $56.1 - 73.9 \, \mu g/m3$. PM2.5 values in the range of $25.9 - 34.1 \, \mu g/m3$. SO2 levels were ranging from $4.8 - 6.6 \, \mu g/m3$ and NO2 levels were ranging from $7.9 - 13.2 \, \mu g/m3$. In buffer zone, the PM10 values were in the range of $43.9 - 58.4 \, \mu g/m3$. PM2.5 values were in the range of $21.0 - 28.2 \, \mu g/m3$. SO2 levels were ranging from $3.5 - 7.2 \, \mu g/m3$. NO2 levels were ranging from $5.8 - 12.2 \, \mu g/m3$. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM10, PM2.5, SO2, NO2 & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL $- 1144 \, \mu g/m3$).

3.7.3 WATER ENVIRONMENT

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the water quality characteristics for critical parameters and evaluate the impacts on agricultural productivity, domestic community usage, recreational resources and aesthetics in the vicinity. The water samples were collected and transported as per the standard quidelines issued by CPCB for analysis.

3.7.3.1 METHODOLOGY

Reconnaissance survey was undertaken and monitoring locations were selected based on:

- Location of the major water bodies
- Location of project site, their water intake and effluent disposal locations
- Likely areas that can represent baseline conditions
- The water samples were collected and were analyzed for physical, chemical, and biological characteristics as per guidelines issued by IS code No.10500/2012.

3.7.3.2 SURFACE WATER

The following water bodies are located within 10 km radius from the proposed project site:

Within 1 km Radius							
Kuttai 1	Adjacent to the eastern side of the lease area						
Odai	300 m (NE)						
Tank	800 m (E)						
1 km to 10 km Radius (Major Water Bodies)							
Palar River 1.40 km - SW							

The area is studded with few tanks that serve as the source for agriculture and also their surplus feeds adjoining tanks. The rainfall over the area is moderate, the rainwater storage in open wells, trenches is in practice over the area and the stored water acts as source of freshwater.

3.7.3.3 GROUND WATER

Geologically the entire district can be broadly classified into hard rock and sedimentary formations. In the total geographical area of 4403.83 sq.km in Tiruchirapalli district, nearly 90 percent is occupied by hard rocks of Archaen age. They are mainly granitic gneiss and Charnockite, Which are intruded by pegmatite veins. Almost 90 percent of the district i.e. Tiruchi, Samayapuram, Manapparai, Musiri, Thottiyam, Thuraiyur and Mannachanallur and part of Lalgudi taluks are covered by hard rocks of granite, gneisses and charnockite.

Whereas part of Lalgudi taluk is covered by sedimentary formation such as Gondwana, Cretaceous and Quaternary formations.

HARD ROCK FORMATION

GNEISSIC TYPE

Groundwater occurs under water table or phreatic conditions in weathered, jointed and fractured formations. The pore space developed in the weathered mantle acts as shallow granular aquifiers and forms the potential water bearing and yielding



zones. Water table is very shallow in river, canal and tank irrigated regions whereas it is somewhat deeper in other regions.

CHARNOCKITE TYPE

Groundwater occurs under water table conditions but the intensity of weathering, jointed and fractured formations and its development is much less when compared to gneissic formations. As a result, these are not termed, as potential water bearing zones excepting in a region where the intensity of weathering coupled with development of joints and fractures is greater. Sometimes the occurrence of Kankar material over charnockite hampers the permeability and well yielding capacity.

The scenario of ground water in Marungapuri Taluk, Tiruchirappalli District, is given below.

	Ground Water Level Status in Marungapuri											
S. No	Firka	Net Annual Ground water availabi lity	Existing gross ground water consum ption for irrigati on	Existing gross ground water consumpti on for domestic and industrial water supply	Existin g gross groun d water consu mption for all uses	Stage of ground water develop ment	Category					
1	Marung apuri	1,489.63	1,591.60	164.13	1,755.7 3	118	Over Exploited					

Source:nwm.gov.in

3.7.3.4 SAMPLING LOCATIONS

Two (2) surface water samples and Six (6) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.11.



Table 3.8 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
Surface	Water		
1	SW1	Paalaru (Upstream) - 1.7 km - S	10° 19'25.97"N & 78° 20'26.99" E
2	SW2	Paalaru (Down stream) - 1.7 km S	10° 19'11.93"N & 78° 20'51.55" E
Ground	Water		
1	GW1	Within Mine Lease area	10° 20'11.72"N & 78° 20'47.65" E
2	GW2	Seegampatti	10° 20'42.72"N & 78° 20'35.42" E
3	GW3	Naveen Garden	10° 19'26.04"N & 78° 20'46.55" E
4	GW4	Kottaiyur Natham	10° '19.10.40"N & 78° 20'12.02" E
5	GW5	Akkiyampatti	10° 21'43.20"N & 78° 21'35.54" E
6	GW6	Lekkanaykanpatti	10° 20'53.55"N & 78° 22'12.45" E



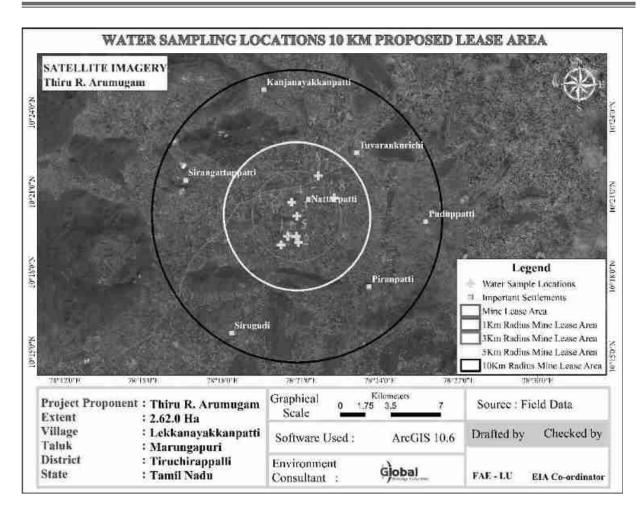


Figure 3.11 -Water Monitoring Locations



Table 3.9 - Ground Water Analysis Results

							Standards as	Per IS 10500:
Parameter	GW1	GW2	GW3	GW4	GW5	GW6	20	012
							Acceptable	Permissible
							Limits	Limits
Odour	Agreeable	Agreeable						
Turbidity, NTU	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5.0
	7.00	7.45	7.05	7.07	7.07	7.40	65.05	No
pH at 25 °C	7.23	7.15	7.35	7.87	7.87	7.16	6.5- 8.5	Relaxation
Electrical Conductivity	1350	1353	1745	1412	1476	2105		
μS/cm							-	-
Total Dissolved Solids,	820	830	1060	850	898	1270	500	2000
mg/l							300	2000
Total hardness as	405	409	454	458.6	439.0	356.7	200	600
CaCO ₃ , mg/l							200	000
Calcium as Ca, mg/l	112	115	110	102	89.4	98.8	75	200
Magnesium as Mg,	30.4	29.5	42.9	48.9	51.7	26.3	30.0	100
mg/l							30.0	100
Calcium as CaCO ₃ ,	279	286	275	254.8	223.4	247.0	_	-
mg/l							-	
Magnesium as CaCO ₃ ,	126	123	179	203.8	215.6	109.8	_	_
mg/l								

Total alkalinity as	380	372	455	349	337	402	200	600
CaCO₃, mg/l							200	000
Chloride as Cl-, mg/l	330	320	335	251	429	463	250	1000
Free Residual chlorine	BDL(D.L-	BDL(D.L-0.2)	BDL (D.L -	BDL(D.L-0.2)	BDL(D.L-0.2)	BDL(D.L-	0.2	1
as Cl⁻, mg/l	0.2)	(- ,	0.2)	,	(- ,	0.2)	-	
Sulphates as SO ₄ ² -,	67.9	136	183	126	86.3	295	200	400
mg/l								
Iron as Fe, mg/l	0.04	0.06	0.09	0.05	0.08	0.11	0.3	No
non as r e, mg/r							0.3	Relaxation
Nitrata as NO ma/l	2.51	3.06	1.68	1.39	2.86	3.55	45	No
Nitrate as NO ₃ , mg/l							45	Relaxation
Fluoride as F, mg/l	0.49	0.45	0.26	0.32	0.45	0.39	1	1.5
Manganese as Mn,	BDL(D.L-	DDI (D. L. 0.05)	BDL (D.L -	BDI (D.I. 0.05)	DDI (D.I. 0.05)	BDL(D.L-	0.4	0.2
mg/l	0.05)	BDL(D.L-0.05)	0.05)	BDL(D.L-0.05)	BDL(D.L-0.05)	0.05)	0.1	0.3



Table 3.10 Surface Water Analysis Results

Parameter	SW1	SW2	CPCB Designated Best Use		
			Acceptable Limits	Permissible Limits	
Odour	Disagreeable	Agreeable	Agreeable	Agreeable	
Turbidity, NTU	6.3	10.0	2	5	
pH at 25 °C	7.46	7.52	6.5- 8.5	No Relaxation	
Electrical Conductivity, μS/cm	1160	1182	-	-	
Total Dissolved Solids, mg/l	734	752	500	2000	
Total hardness as CaCO ₃ , mg/l	357	365	200	600	
Calcium as Ca, mg/l	48.6	48.6	75	200	
Magnesium as Mg, mg/l	56.4	57.4	30.0	100	
Calcium as CaCO ₃ , mg/l	122	125	-	-	
Magnesium as CaCO ₃ , mg/l	235	239	-	-	
Total alkalinity as CaCO ₃ , mg/l	345	353	200	600	
Chloride as Cl ⁻ , mg/l	360	370	250	1000	
Free Residual chlorine as Cl-, mg/l	BDL(D.L-0.2)	BDL(D.L-0.2)	0.2	1	
Sulphates as SO ₄ ²⁻ , mg/l	60.0	65.0	200	400	
Iron as Fe, mg/l	0.107	0.12	0.3	No Relaxation	



Nitrate as NO ₃ , mg/l	2.65	2.42	45	No Relaxation
Fluoride as F, mg/l	0	0	1	1.5
Manganese as Mn, mg/l	0.25	0.23	0.1	0.3
TSS, mg/l	4.0	12.0		
COD, mg/l				
	BDL(DL-4.0)	BDL(DL-4.0)	-	-
BOD, mg/l 3 days @ 27°C as O2	BDL(DL-2.0)	BDL(DL-2.0)	2.0	2.0
DO, mg/l	6.4	6.2	6.0	6.0



3.7.3.5 DISCUSSION

Surface Water

The pH varied from 7.46 to 7.52 while turbidity found to be 6.3 to 10.0, which is exceeding the permissible limit of 5.0. Total Dissolved Solids varied from 734 to 752 mg/l. Chloride varied between 360 mg/l and 370 mg/l. Nitrates varied from 2.42 to 2.65 mg/l, while sulphates varied from 60 to 65 mg/l.

Ground Water

Suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water as required human use, plant use. Though many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth.

As Per the data it has been observed that the pH value varies from 7.15 – 7.87, Chlorides Ranges From 251 - 463 mg/l, Sulphates value found to be between 67.9 - 295 mg/l, Fluoride value varies from 0.26 – 0.49 mg/l, Total Hardness varies from 356.7 – 458.6 mg/l, and Total dissolved solid 820 – 1270 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

3.7.4 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in study area, the environmental assessment of noise from the mining activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses.

3.7.4.1 SAMPLING LOCATIONS

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Six (6) locations. The noise level of monitoring locations were carried out by covering 10 km radius of the project area. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study. The noise monitoring locations are given in Figure 3.12 and in below table.

Table 3.11 Noise Monitoring Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
1	N1	Within Mine Lease area	10° 20'11.72"N & 78° 20'47.65" E
2	N2	Seegampatti	10° 20'42.72"N & 78° 20'35.42" E
3	N3	Naveen Garden	10° 19'26.04"N & 78° 20'46.55" E
4	N4	Kottaiyur Natham	10° '19.10.40"N & 78° 20'12.02" E
5	N5	Akkiyampatti	10° 21'43.20"N & 78° 21'35.54" E
6	N6	Lekkanaykanpatti	10° 20'53.55"N & 78° 22'12.45" E



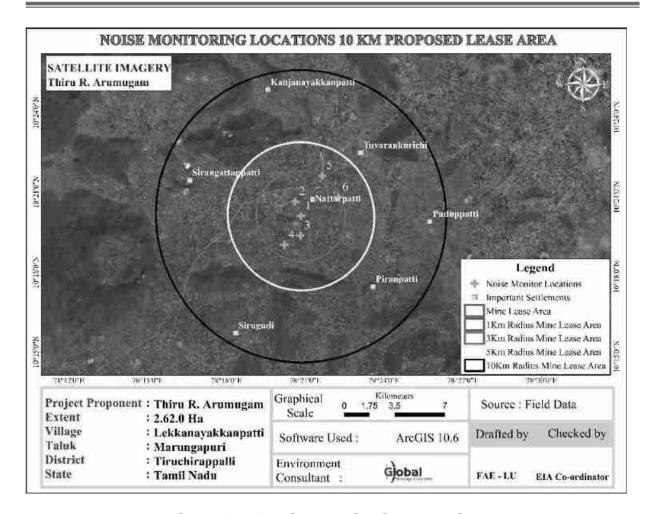


Figure 3.12 Noise Monitoring Location

3.7.4.2 METHOD OF MONITORING

Noise levels were measured using sound level meter manufactured by (Model No - SL4001, Make - Lutron). Sound Pressure Level (SPL) measurements were measured at all locations where ambient air quality monitored; one reading for every hour was taken for 24 hours.

3.7.4.3 NOISE MONITORING RESULT

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.12.



Table 3.12 Noise Monitoring Result

Monitoring Location	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	50.5	47.7	46.1	43.9	46.3	47.2
NIGHT EQUIVALENT	40.2	40.2	39.5	39.9	40.7	42.5
DAY & NIGHT EQUIVALENT	48.9	46.3	44.8	43.0	45.1	46.2

Limits as per MoEF&CC

Day equivalent - 55 dB (A); Night equivalent - 45 dB (A); Work zone Exposure in 8 hr - 90 dB (A)

3.7.4.4 DISCUSSION

From the table it is observed that the day Equivalent Noise (Leq-d) level were ranging from 43.9 to 50.5 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 39.5 to 42.5 dB(A). Day and Night Equivalent Noise (Leq-n) level were ranging from 43.0 to 48.9 dB(A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels are within the limit values.

After commencement of mine operation the anticipated noise level will be 52 dB – 65 dB in the N1 location. (Project Site). It is very negligible and within the prescribed standards of MoEF & CC and DGMS.

3.7.5 SOIL ENVIRONMENT

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analyzed for different parameters. The locations of the monitoring sites are detailed in Table 3.13 and Figure 3.13.



3.7.5.1 MONITORING LOCATIONS

Soil samples were collected from 3 locations to assess the soil quality in and around the mines. Soil samples collected using sampling augers and field capacity apparatus.

Table 3.13 – Soil Sampling Locations

S.No	Location Code	Monitoring Locations	Latitude and longitude
1	S1	Within Mine Lease area	10° 20'11.72"N & 78° 20'47.65" E
2	S2	Seegampatti	10° 20'42.72"N & 78° 20'35.42" E
3	S3	Naveen Garden	10° 19'26.04"N & 78° 20'46.55" E

3.7.5.2 METHODOLOGY

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Three locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics.

Composite grab samples of the topsoil were collected by specified depth, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analyzed at the laboratory.



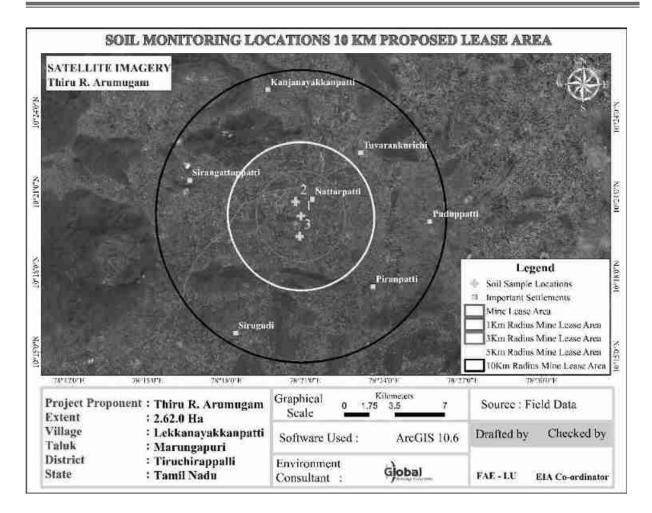


Figure 3.13 - Soil Sampling Stations

Table 3.14 - Soil Testing Result

Parameter	Units	S1	S2	S3
PH		7.54	5.33	7.51
EC	μ mhos/cm	83.16	42.35	82.94
DRY MATTER	%	89.29	93.20	90.55
WATER CONTENT	%	10.71	6.80	9.45
ORGANIC MATTER	%	0.54	0.65	0.72
		SILTY CLAY	SILTY CLAY	SILTY CLAY
SOIL TEXTURE		LOAM	LOAM	LOAM
Grain Size Distribution				
SAND	%	12.3	11.9	13.4
SILT	%	50.7	52.0	50.1
CLAY	%	37.0	36.0	36.5
PHOSPHORUS	mg/kg	0.86	1.22	0.76



		•	•	· •
SODIUM	mg/kg	604	1010	606
POTASSIUM	mg/kg	234	649	232
KJELDHAL NITROGEN	mg/kg	210	305	156
		BDL(D.L -	BDL(D.L -	BDL(D.L -
SULPHUR	%	0.02)	0.02)	0.02)
Water Holding Capacity	%	3.8	4.1	4.6
Porosity	%	17.6	19.2	18.7

3.7.5.3 SOIL TESTING RESULT

Results of the soil samples show that the pH values were found to be 5.33 to 7.54 and Electrical Conductivity values were ranging between $42.35 - 83.16 \mu mhos/cm$. Soils are generally Silty Clay Loam. Organic matter values were ranging between 0.54 - 0.72 %. Total Nitrogen values were ranging between 1.56 - 305 mg/kg. Phosphorus values were ranging between $0.76 - 1.22 \mu g/g$. Potassium values were ranging between 2.32 - 6.49 mg/kg. Sodium values were ranging between 6.04 - 1.010 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in Table no -3.14.

3.7.6 LAND ENVIRONMENT

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

3.7.6.1 LAND USE PATTERN OF THE PROJECT AREA

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

Table 3.15 Land use pattern of the project site

Description	Present Area in Ha.	Area at the end of life of Quarry in Ha.
Quarrying pit	NIL	1.90.0
Infrastructure	NIL	0.01.0
Roads	NIL	0.01.0
Greenbelt	NIL	0.70.0
Unutilized	2.62.0	0.00.0
Total	2.62.0	2.62.0



- At the end of life of mine, the excavated mine pit / void of 1.90 Ha. will act
 as artificial reservoir for collecting rain water and helps to meet out the
 demand or crises during drought season.
- After mine closure the greenbelt (0.70.0 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure.

3.7.6.2 LAND USE PATTERN OF THE STUDY AREA

A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover. The land use map of the study area is given in Figure 3.14.

Table 3.16 Land use pattern of the Study area of 10 km radius

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1	Built-up land	2.92	0.91
2	Canal	0.52	0.16
3	Crop land	70.12	21.81
4	Existing mining area	0.10	0.03
5	Fallow land	82.56	25.69
6	Land with scrub	26.75	8.32
7	Land without scrub	0.63	0.20
8	Plantations	60.18	18.72
9	Reserved Forest	66.91	20.82
10	Water bodies	10.73	3.34
	Total Area	321.42	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

From above table it is inferred that the majority of the land in the study area is Fallow Land (25.69 %), Crop Land (21.81 %), Reserved Forest (20.82 %) and Plantations (18.72 %) followed by Land with scrub (8.32%).



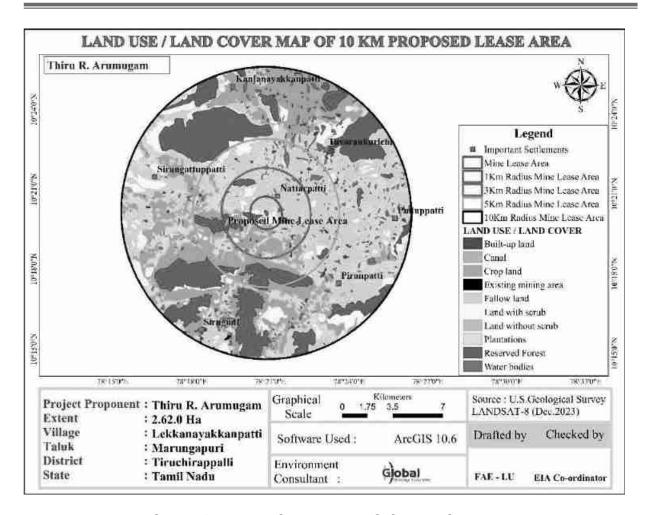


Figure 3.14 Land use map of the study area

3.7.7 BIOLOGICAL ENVIRONMENT

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

Methodology

Sampling locations were selected with reference to topography, land use, vegetation pattern, etc. In this study, quadrats of $25m \times 25m$ were laid down to assess trees and quadrats of $10m \times 10m$ were laid down for shrubs.



3.7.7.1 FLORA

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

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

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

3.7.7.2 FLORISTIC COMPOSITION IN CORE ZONE

The lease area is a non- forest, private land with scrub and thorny bushes. In the core zone, there are no trees.

Flora in 300 m radius zone

There are some plantation within 300 m radius. It contains a total of 13 species belonging to 10 families have been recorded from the buffer zone of 300 m radius. Trees 3 (25%), Shrubs 4 (25%) Herbs 6 (50%) were identified.

Flora in 300 m radius

S. No	Local Name	Scientific Name	Family Name	IUCN Conservation Status	
Tree	 es		1		
1	Vembu	Azadirachta Indica	Meliaceae	Not Listed	
2	Karuvelam	Vachellia Nilotica	Fabaceae	Not Listed	
3	Vealli Vealan	Vachellia Leucophloea	Babesiae	LC	
Shr	Shrubs				
1	Erukku	Calotropis Gigantea	Apocynaceae	Not Listed	
2	Avarai	Senna Auriculata	Fabaceae	Not Listed	



	T	T		
3	Thuthi	Abutilon Indicum	Meliaceae	Not Listed
4	Kattamanakku	Jatropha Curcas	Euphorbiaceae	Not Listed
		Herbs		
1	Mukkirattai	Boerhaavia Diffusa	Nyctaginaceae	Not Listed
2	Nai Kadugu	Celome Viscosa	Capparidaceae	Not Listed
3	Kovakkai	Trichosanthes Dioica	Cucurbitaceae	Not Listed
4	Perandai	Cissus Quadrangularis	Vitaceae	Not Listed
5	Thumbai	Leucas Aspera	Lamiaceae	Not Listed
6	Mookuthi	Wedelia Trilobata	Asteraceae	Not Listed
	Poondu			

3.7.7.3 FLORISTIC SCENARIO IN BUFFER ZONE AREA

Taxonomically a total of 46 species distributed among 31 families have been recorded from the buffer area. Based on habitat classification of the enumerated plants the majority of species were Trees 21 and Shrubs 15 followed by herbs, climbers etc., 10. Details of flora with the scientific name were mentioned in Table No. 3.17.

Table 3.17 List of Flora

S.NO	Local Name	Scientific Name	Family Name
		Trees	
1	Coconut	Cocos nucifera	Arecaceae
2	Banyan tree	Ficus benghalensis	Moraceae
3	Tambut/Indian Plum	Flacourtia indica	Flacourtiaceae
4	Mango	Mangifera indica	Anacardiaceae
5	Drumstick tree	Moringa oleifera	Moringaceae
6	Tulasi	Ocimum sanctum	Labiatae
7	Ashoka tree	Saraca indica	Caesalpinaceae
8	Tamarind	Tamarindus indica	Caesalpinaceae
9	Pomegranate	Punica granatum	Puniaceae
10	Guava	Psidium guajava	Myrtaceae



11	Babul	Acacia nilotica	Mimosaceae
12	Vembu	Azadirachta Indica	Meliaceae
13	Punnai	Calophyllu Inophyllum	Calophyllaceae
14	Ilanthai	Ziziphus Jujubha	Rhamnaceae
15	Thenpazham	Muntingia Calabura	Tiliaceae
16	Nochi	Vitex Negundo	Lamiaceae
17	Pappali Maram	Carica Papaya L	Caricaceae
18	Poovarasu	Thespesia Populnea	Malvaceae
19	Karuvelam	Vachellia Nilotica	Fabaceae
	Maram		
20	Nelli	Emblica Officinalis	Phyllanthaceae
21	Navalmaram	Sygygium Cumini	Myrtaceae
		Shrubs	
1	Pink Morning Glory	Ipomea carnea	Convolvulaceae
2	Hibiscus	Hibiscus rosa-sinensis	Malvaceae
3	Jasmine	Jasmimum arborens	Oleaceae
4	Thuthi	Abutilon Indicum	Meliaceae
5	Nithyakalyani	Cathranthus Roseus	Apocynaceae
6	Kattamanakku	Jatropha Curcas	Euphorbiaceae
7	Avarai	Senna Auriculata	Fabaceae
8	Erukku	Calotropis Gigantea	Apocynaceae
9	Neermulli	Hydrophila Auriculata	Acanthaceae
10	Sarpunkha	Tephrosia purpurea	Fabaceae
11	Perandai	Cissus quadrangularis	Vitaceae
12	Agati	Sesbania grandiflora	Fabaceae



13	Dhatura, Umettha	Datura metel	Solanaceae
14	Uttareni	Acyranthes aspera	Amaranthaceae
15	Kundumani	Abrus Precatorius	Fabaceae
	Herl	os, Climber, Creeper & Gra	asses
1	Veetukaayapoon Du	Tridax Procumbens	Asteraceae
2	Kuppaimeni	Acalypha Indica	Euphorbiaceae
3	Mukkirattai	Boerhaavia Diffusa	Nyctaginaceae
4	Karisilanganni	Eclipta Prostata	Asteraceae
5	Thumbai	Leucas Aspera	Lamiaceae
6	Thulasi	Ocimum Tenuiflorum	Lamiaceae
7	Manathakkali	Solanumnigrum	Solanaceae
8	Sangupoo	Clitoriaternatia	Fabaceae
9	Arugampul	Cynodon Dactylon	Poaceae
10	Nai Kadugu	Celome Viscosa	Capparidaceae

3.7.7.4 LIST OF FAUNA

A total of 34 species belonging were recorded in the buffer zone. Based on habitat classification the majority of species were 15 Birds, followed by 7 Insects, 4 Reptiles, 5 Mammals and 3 Amphibians. There are one schedule I species, one schedule II species, 31 schedule IV species and one Schedule V species according to Indian wild life Act 1972. There are no critically endangered, vulnerable and endemic species observed. List of fauna in the buffer zone is mentioned in Table 3.18.



Table 3.18 List of Fauna

S.No.	Scientific Name	Common Name	Conservation status as per Indian Wildlife Protection Act (1972)		
		Avifauna	1		
1	Ardeola grayii	Pond heron/ Paddy Bird	Sch-IV		
2	Ploceus philippinus	Weaver bird	Sch-IV		
3	Tachybaptus ruficollis	Little Grebe	Sch-IV		
4	Corvus splendens	House crow	Sch-V		
5	Acridotheres tristis	Common myna	Sch-IV		
6	Dicrurus macrocerus	Black drongo	Sch-IV		
7	Quills contronix	Grey quail	Sch-IV		
8	Apus affinis	House swift	Sch-IV		
9	Columba livia	Blue Rock pigeon	Sch-V		
10	Streptopelia chinensis	Spotted Dove	Sch-IV		
11	Passer domesticus	House Sparrow	Sch-IV		
12	Egretta garzetta	Little egret	Sch-IV		
13	Himantopus Himantopus	Black Winged Stilt	Sch-IV		
14	Ceryule rudis	Lesser Pied Kingfisher	Sch-IV		
	<u>I</u>	Reptiles	1		
1	Naja naja	India cobra	Sch-II		
2	Calotes versicolor	Common garden lizard	Sch-IV		
3	Bangarus caerleus	Krait	Sch-IV		
4	Ptyas mucosus	Rat snake	Sch-II		
	Amphibians				



1	Rana hexadactyla	Frog	Sch-IV
2	Rana tigrine	Bull frog	Sch-IV
3	Bufo melanosticus	Common Indian toad	Sch-IV
		Mammals	
1	Rattus sp	Rat	Sch-V
2	Lepus nigricollis	Indian Hare	Sch-IV
3	Funambulus palmarum	Indian Palm squirrel	Sch-IV
4	Rattus norvegicus	Field mouse	Sch-IV
5	Rusty spotted Cat	Felis rubiginosa	Sch-IV
		Insects	
1	Danainae	Milkweed butterfly	NL
2	Apis cerana	Indian honey bee	Sch-IV
3	Ceratogomphus pictus	Dragonfly	Sch-IV
4	Hieroglyphus sp	Grasshopper	NL
5	Danaus chrysippus	Tawny coster	Sch-IV
6	Sympetrum fonscolombii	Red-veined darter	NL
7	Tirumala limniace	Blue tiger	Sch-IV

The core zone of the area is patta land, No forest land is involved in the project area. There is no Wild Life Sanctuary or National Park within the study area of 10km. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area. Hence this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.



3.7.8 TOPOGRAPHY

The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 2 m (Avg) Gravel formation and sloping towards Southeastern side of the area, the altitude of the area is above 262 m (maximum) from MSL. No water bodies is found nearby the applied area.

3.7.9 DRAINAGE PATTERN OF THE AREA

The Drainage pattern study reveals that there is a kuttai located adjacent to the lease area in eastern side, a seasonal odai at 300 m in northeastern side and a tank at 800 m in eastern side of the project. There is no river passed through within 1 km radius from the project site. Palar River is situated at 1.40 km (SW). The area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The drainage map of the study area is given in Figure 3.15.

3.7.10 GEOMORPHOLOGY

Predominantly the buffer zone is dominated by Shallow Buried Pediplan (57.79 %), and the lease area also falls under Pediment / Valley Floor. Geomorphology of the study area is detailed below. The geomorphology of the study area is given in Figure 3.17.

Sl.No.	GEOMORPHOLOGY	Area in Sq.Km	Area in Percentage
1	Dome Type Denudational Hill	8.53	2.65
2	Dome Type Residual Hills	4.10	1.28
3	Inselberg	3.09	0.96
4	Linear Ridge/ Dyke	7.01	2.18
5	Moderately Buried Pediplain	35.22	10.96
6	Pediment / Valley Floor	52.98	16.48
7	Ridge Type Structural Hill	50.98	15.86
8	Shallow Buried Pediplain	159.51	49.63
	Total Area	321.42	100.00



3.7.11 GEOLOGY

The regional geology of the study area is shown below in Figure 3.16. The majority of the buffer zone is composed of Charnockite (44.98 %), followed by Hornblende biotite gneiss (28.64 %). The lease area falls under Hornblende biotite gneiss category. The geology of the study area is detailed below.

SI.No.	GEOLOGY	Area in Sq.Km	Area in Percentage
1	Amphibolite	6.78	2.11
2	Calc-gneiss	3.79	1.18
3	Charnockite	144.57	44.98
4	Garnet-Silimanite gneiss	37.76	11.75
5	Hornblende biotite gneiss	92.05	28.64
6	Magnetite quartzite	0.88	0.27
7	Quartzite	35.58	11.07
	Total Area	321.42	100.00

3.7.12 LITHOLOGY

The study area is mainly dominated by Granite and Quartz vein and core zone comes under Granite category. lithology of Core & Buffer Zone map is given in Figure 3.18. Lithology of the study area is detailed below.

Sl.No.	Lithology	Area in Sq.km
1	Garnet – biotite – sillimanite gneiss	49.83(15.50 %)
2	Granite	122.91 (38.24 %)
3	Granitoid gneiss	4.73 (1.47 %)
4	Grey biotite gneiss	35.29 (10.98 %)
5	Quartz vein	108.66 (33.81 %)

3.7.13 SOIL TYPE

The major soil type found in the buffer zone are Sandy Clay Loam (91.83%), followed by sandy loam (8.17%). The lease area falls under Sandy clay Loam category. The soil type of the study area is detailed below.

Sl.No.	SOIL TYPE	Area in Sq.Km	Area in Percentage
1	Sandy clay loam	295.14	91.83
2	Sandy loam	26.27	8.17
	Total	321.42	100.00



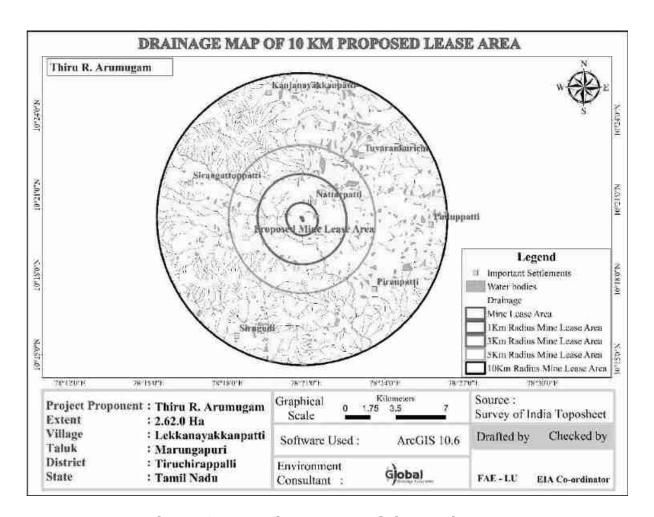


Figure 3.15 Drainage map of the study area



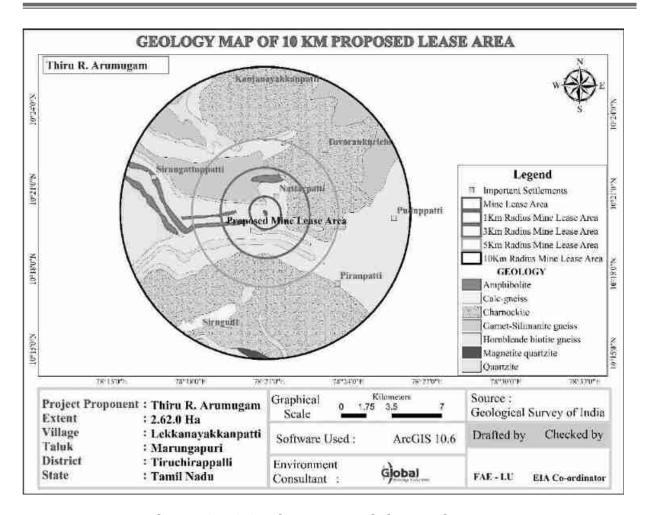


Figure 3.16 Geology map of the study area



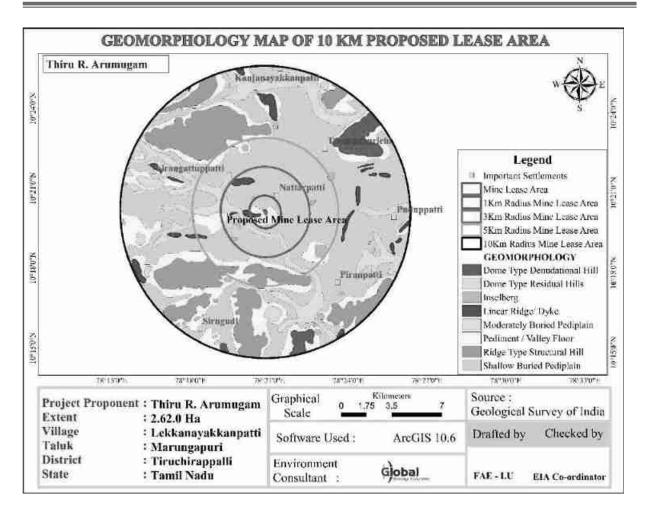


Figure 3.17 Geomorphology map of the study area



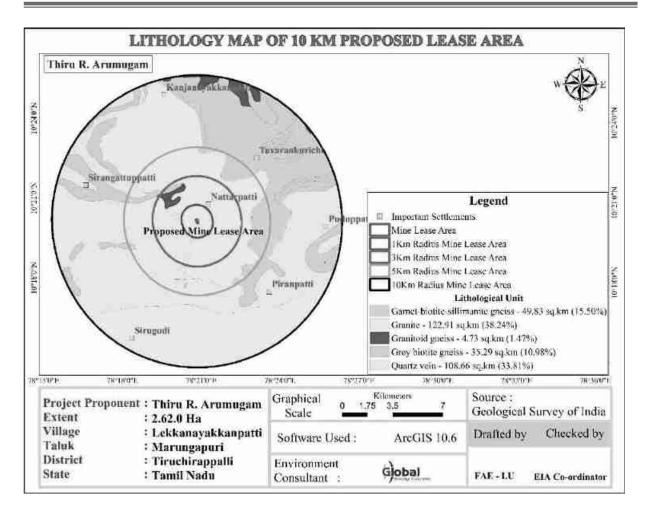


Figure 3.18 Lithology map of the study area



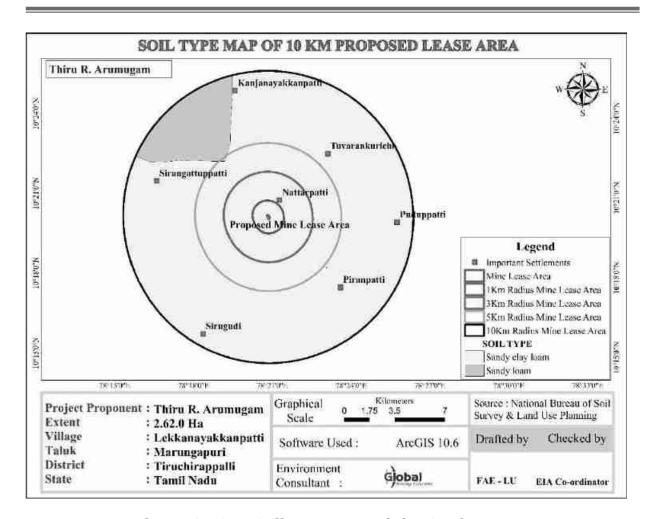


Figure 3.19 - Soil Type Map of the Study Area

3.7.14 SOCIO-ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and



indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

3.7.14.1 OBJECTIVES OF THE STUDY

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

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

3.7.14.2 SCOPE OF WORK

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

3.7.14.3 DETAILS OF VILLAGES

The project is located in Marungapuri Taluk, Tiruchirapalli District. The total population of the district is 27,22,290 which comprise of 13,52,284 Males and 13,70,006 Females. There are 33 rural villages covering 4 districts namely Tiruchirapalli, Madurai, Dindigul and Sivagangai in the study area. The villages located in the study area is given in figure 3.20 below.



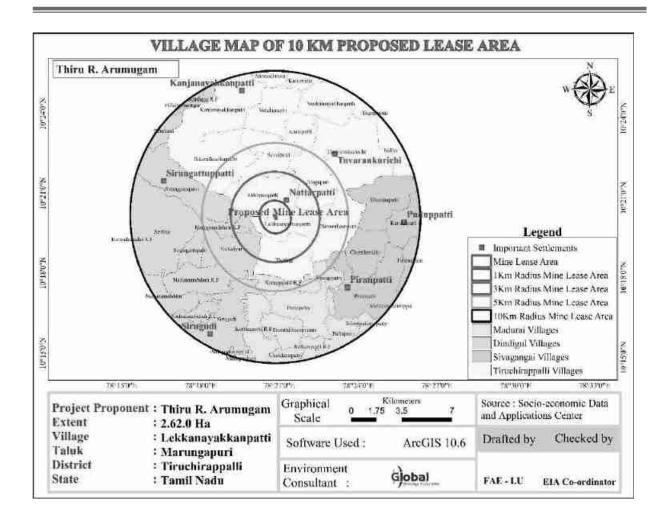


FIG 3.20 VILLAGE MAP OF THE STUDY AREA

Basic Amenities

A better network of physical infrastructure facilities (well-built roads, rail links, irrigation, power and telecommunication, information technology, market-network and social infrastructure support, viz. health and education, water and sanitation, veterinary services and co-operative) is essential for development of the rural economy. All basic amenities Education (higher education, colleges, universities, Medical college, Transport facilities, Railway station, Bus station area available.



Table 3.19 P	opulation profile of the st	udy area	
Particulars	No of Population	Percentage (%)	
A. Pop	oulation break-up by Gend	er	
Male Population	61581	50.07	
Female Population	61394	49.93	
Total	122975	100	
B. Po	pulation break-up by Cast	e	
Scheduled Caste	16173	13.15	
Scheduled Tribes	2	0.001	
Others	106800	86.85	
Total	122975	100	
	C. Literacy Level		
Total Literate Population	77512	63.00	
Others	45463	37.00	
Total	122975	100	
D.	Occupational structure		
Main workers	53896	43.82	
Marginal workers	13318	10.83	
Total Workers	67214	54.65	
Total Non-workers	55761	45.35	
Total	122975	100	

The above table shows that the male and female population ratio are almost equal. Among the total population 0.001% belong to Scheduled Tribes, 13.15 % are Scheduled Caste and the balance 86.85 % people belong to other castes. Among the total population, 63.00 % of the people are literate. Among the total population, 36.46.0 % are literate males and 26.57 % are literate females. The results are plotted in figures below.



Particulars	No of Population	Percentage (%)	
A. Popu	ulation break-up by Gend	er	
Male Population	789	50.22	
Female Population	782	49.78	
Total	1571	100	
B. Pop	oulation break-up by Cast	e	
Scheduled Caste	328	20.88	
Scheduled Tribes	0	0	
Others	1243	79.12	
Total	1571	100	
	C. Literacy Level		
Total Literate Population	1009	64.22	
Others	562	35.78	
Total	1571	100	
D.	Occupational structure		
Main workers	776	49.39	
Marginal workers	43	2.74	
Total Workers	819	52.13	
Total Non-workers	752	47.87	
Total	1571	100	



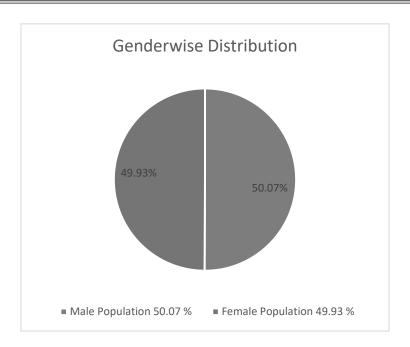


FIG 3.21 GENDER-WISE POPULATION DISTRIBUTION

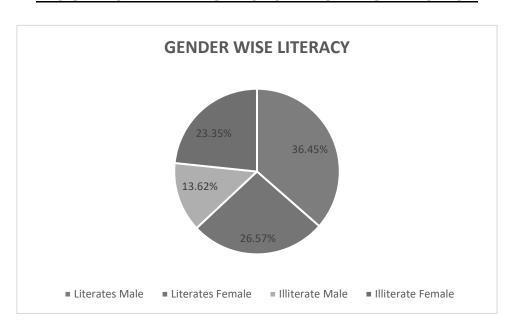


FIG 3.22 GENDER WISE LITERACY DISTRIBUTION



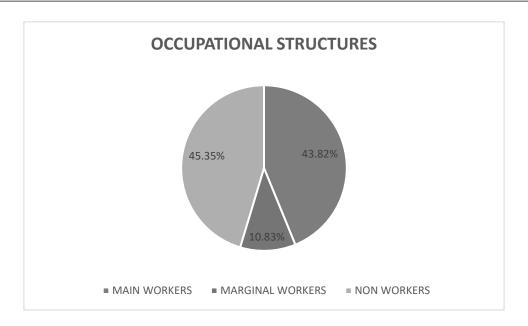


FIG 3.23 OCCUPATIONAL STRUCTURE WITHIN BUFFER ZONE



4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

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

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

This chapter deals with the various anticipated environmental impacts and mitigation measures of the proposed mining activity. The proposed method of mining is Opencast Mechanized and the quarry operation involves Shallow Jack Hammer Drilling, Blasting, Excavation, Formation of benches, Loading and Transportation of minerals.

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 ecofriendly mining in the area. The likely impacts on various environmental aspects and mitigation measures are discussed below.

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

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

The proposed mining activity is small and not likely to have any serious impacts on the existing environment of the area. However, the potential impacts of the proposed mining and related activities on various environmental parameters are discussed.

4.1 LAND ENVIRONMENT

The main anticipated impact on the Land Environment due to quarrying operation is change in Landscape, change in Land – use Pattern.

In the rough stone and gravel quarrying operation, land degradation is minimal. After completion of the quarrying operation, the land will be allowed to collect rainwater, this rough stone does not produce any toxic effluents in the form of solids, liquids, or gases.

It is a simple quarrying operation where 100% of stones will be removed systematically, according to the approved Mining Plan.



4.1.1 Anticipated Impacts and mitigation measures

Aspect	Impact					
Topography	The area is exhibits almost plain covered by					
	Gravel formation. Quarrying activity will lead to					
	change in geological setting of the area i.e., Due					
	to the quarrying activity in the mine lease area					
	will leads to affect the aesthetic view on the					
	environment. Further, due to the movement of					
	heavy vehicles in and around the mine lease area					
	will leads to affect the surrounding agricultur					
	lands, ecology and biodiversity, human					
	habitations due to the emissions from vehicles					
	like SO ₂ , NO _x , PM ₁₀ , PM _{2.5} , etc., The existing land					
	use pattern is given as under.					
	Area in use					

Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
Quarrying Pit	Nil	1.90.0
Infrastructure	Nil	0.01.0
Roads	Nil	0.01.0
Green Belt	Nil	0.70.0
Unutilized	2.62.0	NIL
Total	2.62.0	2.62.0

The proposed ultimate pit dimension of the mine lease area is given below.

Mitigation measures

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out only up to 17 m BGL. At the end of mining period, the quarried pit will act as a water reservoir to store the rain water.

Land Use at the end of mine will be as follows.

Land Use	Area in use during the quarrying period (Hect)
Area left for water body	1.90.0
Green Belt	0.70.0
Remaining area	0.02.0
Total	2.62.0

At the mine closure stage, 1.90 Ha of lease area will be left as rain water harvesting pond. 0.70 Ha will be developed with green belt.

Greenbelt shall be developed around the mine lease area and the details has been given below.

Year	Species	No. of trees	Spacing	Survival
I	Azadirachta	80		
II	indiaca	80	3m x 3m	80%
III		80		

	U	Itimate Pit o	limensio	n at the			IV		80			T 1
		end of Mining plan Period				V	_	80	_			
		0.1.0					•	Total	400			-
	Pi	t Length	Width	Depth				. ota.	400			
	No	o. (max)	(Avg)	(max)		!			1	1		_
		(m)	(m)	(m)		Due	to the	thick veget	tation aroui	nd the mine	e lease area	and
						sprir	nkling o	of water aro	und the ha	ul roads th	e dust emiss	sions
	I	272	70	17 BGL		arise	es from	the vehicles	s will be cor	ntrolled.		
						At th	ne end c	of mining pe	riod, fencin	g will be pro	vided around	d the
						mine	e lease a	area to arres	st the entry	of public/ca	ttle to the m	ining
		L	I	ı	1	area			·			
	If mining is not done systematically it will lead			l leads	The	rough s	tone is prop	osed to qua	arry 5m ben	ch height and	d 5m	
	to the dumping failure in the mining area.				widt	h with	n 80º slop	e and w	ith conver	ntional oper	ncast	
	area and a annipring randre in the rimining area.				Mec	nanized	method. As	s per the ap	proved min	ning plan a sa	afety	
					distance of 10 m and 7.5m shall be provided to the adjoining			ining				
					Gov	ernmen	t land and p	oatta land. ⁻	There is no	overburden	from	
					this	proposa	al, entire m	ined out m	ineral will b	e directly lo	aded	
						into	tipper t	o the needy	crushers /	other buyer	s for constru	ction
						worl	KS.	·		,		
Drainage	Mine drai	nage is surfa	ce water	or ground	dwater	As p	er the	approved m	nining plan	the ultimate	e pit limit fo	r the
	that drains from an active or abandoned mine.				mine.	first	five yea	ars is 17 m	BGL. The gr	ound water	table is repo	orted
	One of the adverse impact of mine drainage is it			ge is it	as 5	6 m BGI	L. In the pro	posed mini	ng plan only	/ 17 m BGL d	lepth	
	will contaminate the ground water.				has	been e	nvisaged a	s workable	depth for	safe & econ	omic	
						quar	rying fo	or the first fi	ve years. H	ence the qu	arrying opera	ation
						may	not aff	ect the grou	und water.			



Soil Quality and Agriculture	In monsoon seasons due to the excavation of minerals soil erosion and sediment deposition will occur in the nearby water bodies.	It is proposed to quarry upto a depth of 17m BGL and the nearby water table is 56 m BGL. So, the mining activity will not affect the ground water. To prevent the soil erosion during monsoon season, garland drain will be constructed with silt traps.
Visual impact on surrounding environment	Quarrying activities and rock extraction generally cause several environmental effects on the surrounding areas. The alteration of landscape due to activities like excavation, drilling or blasting, in particular, often generates a visual impact on the receptors set in the surroundings. Among these effects, the shape, extent, or chromatic contrast of the mining surface with the original land form may represent a huge loss of appeal for the growth of new urban settlements.	The reclamation of the post mined quarry surface is aimed at restoring the ecological balance taking into account geological parameters but also local flora and climate. Further the ultimate depth of mining is 17m BGL (first five years). In the post mining stage the quarried out pit will be used for rainwater harvesting. At the mine closure stage, 1.90 Ha of lease area will be left as rain water harvesting pond. 0.70 Ha will be developed with green belt.



4.2 SOIL ENVIRONMENT

4.2.1 ANTICIPATED IMPACT

Mining activities often disrupt the existing environment as they involve disturbing the untouched earth materials. The massive Charnockite formation is noticed below 2 m (Avg) Gravel and slopping towards southeastern side of the area. The altitude of the area is above 262 m (Max) from MSL. There is no top soil formation in the applied lease area. The entire mined out mineral will be transported to the needy buyers through tippers.

4.2.2 MITIGATION MEASURES FOR SOIL EROSION AND SOIL CONSERVATION

- Runoff water will be collected in bottom of the quarry and used for plantation and dust suppression during dry season.no run off water will be discharged beyond lease area.
- Wet drilling and haul road water sprinkling will be carried out to minimise air born dust at source level, which may cause soil pollution due to sedimentation.
- Garland drains will be constructed around the project area with silt traps to control the soil erosion during rainy seasons.
- Greenbelt development (0.70.0 Ha.) all along the periphery of the project area (i.e., 7.5 m and 10 m safety barrier) will ensure binding strength and minimizes soil erosion.
- Soil sampling will be carried out in the core zone for every season to ensure the soil quality is not affected due to the quarrying activities.

4.2.3 SEVEN EFFECTIVE EROSION CONTROL MEASURES Planting Vegetation

This method entails planting vegetation with deep roots to ensure the soil
is held in place, which is particularly important in areas that are more
susceptible to erosion, like hillsides, steep slopes, and along streams and
rivers.

 The flow of water is impeded by vegetative barriers due to densely concentrated thick stems. They can spread the water runoff to flow through them slowly without erosion. Plants that would serve the purpose of erosion control include deep-rooted native plants like native prairie grasses, wildflowers, and woody perennials.

The Application of Mulches

 This method involves applying mulch materials to cover bare soil and prevent it from being washed away. Mulching is often used to control erosion in the earliest stages of growing shrubs or seedlings. It can modify soil temperature and conserve moisture to reduce the fluctuation of both factors.

Reforestation

- Restoring an ecosystem that has become degraded while protecting existing
 ones is a good way to ensure the efficiency of soil erosion control. Trees
 that are correctly planted and maintained can cut down on erosion by as
 much as 75%.
- The removal of forest cover also means an increased risk of earth flow, which is kicked off by the absence of forest canopy as well as a dense network of interwoven roots within the subsoil. Reforestation is another way to stabilize earth flows, gullies, and shallow landslides that are actively eroding.

Erosion Control Blankets and Anchoring Devices

 Erosion control blankets, geotextiles, mats, and various plastic covers are typically used to control soil erosion in the early stages of growing vegetation or for temporary stabilization during construction projects.
 These measures are made from natural or synthetic materials designed to



- hold soil in place and allow vegetation to grow through them. They work by slowing down the flow of water, protecting the soil from wind and rain, and promoting the establishment of vegetation.
- Anchoring devices are used to secure erosion control blankets in place. They
 are normally made of metal or plastic and come in a variety of shapes and
 sizes, including staples, pins, and stakes. Anchoring devices are inserted
 through the erosion control blanket and into the soil to hold it in place.
 Anchoring ensures that the blanket stays put during heavy rain or wind and
 prevents soil erosion from occurring.

Using Silt Fencing

- A silt fence or super silt fence is used as a temporary barrier to control sediments. Made of geotextile fabric and supported by wooden stakes or metal posts and chain-link fencing, it is one of the most common devices used in construction projects to control soil erosion and prevent sediment from leaving the site. It works by trapping sediment as water flows through it, allowing the water to pass through while retaining the sediment.
- If using silt fencing, ensure that the fence is appropriately installed to ensure its effectiveness. It should not be installed across ditches, waterways, or areas with a concentrated flow of water, as silt fencing cannot cope with higher water pressure.

The Application of Seeding

- When it comes to construction and land development projects, there are two main seeding types permanent and temporary.
- Temporary seeding is used to quickly establish vegetation on disturbed soil
 to reduce erosion during a construction project. Temporary seeding
 typically involves fast-growing annual grasses. This can be done by
 spreading seed over the soil surface or by a process called hydro-seeding.



- Hydro-seeding is the process of spraying a mixture of seed, mulch, fertilizer, and water onto the soil surface.
- Permanent seeding is done to establish long-term vegetation on disturbed soil after construction is complete. Permanent seeding typically uses a mixture of grasses and other native vegetation. The goal of permanent seeding is to establish a diverse plant community that can help stabilize the soil and prevent erosion over the long term.

Installing Energy Dissipaters

- Energy dissipaters are another common component of erosion control systems, especially in high-velocity areas. These structures are designed to absorb the energy of flowing water. They then disperse it evenly over a wider area, reducing the erosive power of the water. Various types of energy dissipaters can be used depending on the specific site and requirements, including check dams, riprap, gabions, rock chutes, and more.
- Proper erosion control measures are essential for any construction or land development project, no matter how big or small. Without these measures in place, the risk of wildlife habitat loss, water pollution, and soil loss can be severe.



4.3 RESERVE FOREST

There is a Reserve Forest located 280 meters to the west of the project site, while the others are situated at a radius of more than 1 kilo meter.

SI. No	Details	Name	Aerial Distance
		Reserve Forest	280m (W)
		Chinnayampatti R.F	2.97km (W)
	Reserved / Protected Forest	Vellimalai R.F	3.62km (S)
		Madukamalai R.F	4.06km (SW)
1.		Karumalai R.F	5.3km (S)
		Nedunkuttu R.F	6.80km (SW)
		Reserve Forest	2.09km (NW)
		Velamalai R.F	5.0km (NW)
		Mamalai R.F	6.6km (NE)

Mitigation Measures:

- > The mitigation measures prescribed by SEAC TN for the quarries located within 1 km from the Reserve Forest are detailed below,
- Three rows plantation will be developed all around the project site before obtaining CTO from TNPCB.
- ➤ The PP will construct and maintain proper fencing all around the boundary before commencement of the operation.
- > There is no overburden / waste from this proposal, the entire mined out mineral will be directly loaded into tippers to the needy buyers. Hence, no dumps is anticipated.
- At the mine closure stage, 1.90 Ha of lease area will be left as rain water harvesting pond. 0.70 Ha will be developed with green belt. There is no proposal for back filling.

The following measures to be carried out to control the noise and vibration

 Secondary blasting will be totally avoided and hydraulic rock breaker are utilized for breaking boulders;



- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Blasting will be carried out under the supervision of statuary persons as approved by DGMS.

The Air pollution measures will be adopted to control and maintain the atmosphere within the prescribed limits.

The Haul road will be maintained in good condition and also maintain the drains to keep free from blockage.

4.4 WATER ENVIRONMENT

4.4.1 ANTICIPATED IMPACT ON SURFACE WATER BODY

The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process.

There is a kuttai located adjacent to the lease area in eastern side, a seasonal odai at 300 m in northeastern side and a tank at 800 m in eastern side of the project. There is no river passed through within 1 km radius from the project site. Palar River is situated at 1.40 km (SW).

Based on the drainage map given in the Fig.NO.3.15, it is found that there is no stream connect the lease area to the water body. As the proposed mining activity takes place with 100 % recovery. Moreover, no toxic element will be quarried out or no chemicals or hazardous substances are used during mining process. No other



water bodies close to the project site, there is no proposal for discharging of wastewater outside the project area. There is no proposal for a rough stone processing or workshop within the project area, so no effluent is anticipated in the mine.

During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads.

Mitigation Measures:

- The garland drainage will be provided around the area to prevent the escape of runoff.
- The repair works of the machineries are strictly prohibited within the lease area to prevent the spillage of grease, oil etc.
- Regular water quality will be carried in nearby villages to ensure the water quality is not affected due to the quarrying activities.
- Domestic sewage from site office & urinals/latrines provided in project area
 will be discharged through septic tank followed by soak pit system.
- Only clear and settled water free from silt content will be used for dust suppression and greenbelt development.
- De-silting will be carried out before and immediately after the monsoon season and the settling tank and drains will be cleaned weekly, especially during monsoons.

4.4.2 ANTICIPATED IMPACT ON GROUND WATER

The quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 17 m bgl only (first five years) and water table is found at a depth of 56 m BGL. No chemical having toxic elements will be used for carrying out mining activity. Also Rough stone 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.

Mitigation measures

- > Entire lease area will be provided with proper garland drains.
- > Check wears will be provided to prevent solids from wash off.
- Construction of garland drains around freshly excavated so that flow of water with loose material is prevented.
- > The mine water will be passed through the natural slopes and valleys and gets accumulated in the settling tank (Bottom pit).

Ground water environment in buffer zone

The scenario of ground water in Tiruchirappalli District, Marungapuri Taluk is given below.

	Table 4.1 Ground Water Level Status in Marungapuri						
S. No	Firka	Net Annual Ground water availabi lity	Existing gross ground water consum ption for irrigati on	Existing gross ground water consumpti on for domestic and industrial water supply	Existin g gross groun d water consu mption for all uses	Stage of ground water develop ment	Category
1	Marung apuri	1,489.63	1,591.60	164.13	1,755.7 3	118	Over Exploited

Source: nwm.gov.in

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

4.4.3 ANTICIPATED IMPACT DUE TO WATER USE IN MINE'S

The total water requirement for the project will be 6.0 KLD comprising Drinking 1.2 KLD, Dust suppression 2.5 KLD, Greenbelt 1.5 KLD and Domestic purpose 0.8 KLD. The water will be sourced initially from outside agencies. Later the rainwater



collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.1.

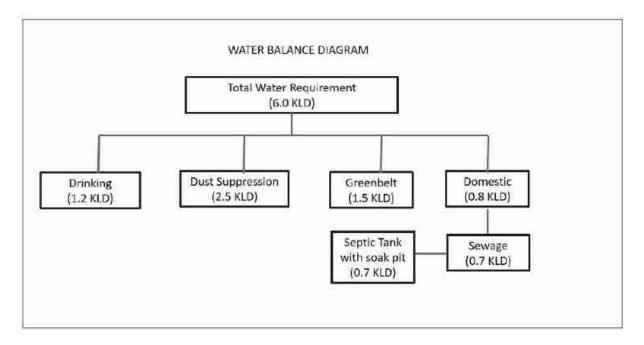


Figure 4.1 Water Balance Diagram

MITIGATION MEASURES

The following mitigation measures are suggested for water management

- Rainwater will be collected in lower part of the quarry pit by construction of garland drains to divert surface run-off and will be connected to setting tank to allow suspended solids to settle down if any. This collected water will act as a rain water harvesting system and will be used for dust suppression and greenbelt development.
- Regular monitoring (every 6 month once) and analyzing the quality of water in open well, bore wells and surface water.



4.4.4 RAINWATER HARVESTING PLAN

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

- Development of garland drain around the quarry connected to settling tank.
- Cleaning of drain periodically to prevent siltation
- The supernatant clear water from the settling pond will drain into the nearby channel on the eastern side of the lease.
- Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.

The average annual rainfall of the area is 985 mm. Taking into consideration of 0.35 as runoff co-efficient for mining area, the total quantity of rain water can be harvested per annum from the area has been tabulated as below.

Table 4.2 - Rainwater Harvesting Plan

S.NO	Rainwater Harvesting Area	Area in Sq.m	Average annual rainfall	Volume of harvestable quantity (Cum) of rain water per annum
1	Quarry Area	19000	0.9	5985
	Tota	l Harvested Rainfall	5985	

Total surface water runoff is 5985 Cum per Annum. 10% of this amount will be evaporated and rest 5387 m³ will be recharged in the rain water harvesting pit.

The dimension of the rain water harvesting pond will be $20m \times 20m \times 20m$ with capacity of 8000 cu.m. The rain water stored in the pond will be utilized for plantation, dust suppression activities. The capacity of Rain water harvesting post will be sufficient to arrest the surface runoff from the lease area considering the highest amount of rain fall.



4.5 AIR ENVIRONMENT

The existing ambient air quality in the area has been described in Chapter-3. Opencast mechanized mining, using jackhammer drilling, blasting, and excavation through an excavator, as well as mineral transport through tippers, will be carried out for the excavation of rough stone and gravel.

4.5.1 ANTICIPATED IMPACT

The proposed mining and allied operations may cause deterioration of air quality due to pollution arising from the project operation if prompt care is not taken. The principal sources of air pollution in general due to mining and allied activities will be:

The air-borne particulate matter generated by quarrying operations and transportation is mainly PM_{10} and PM2.5, and emissions of sulfur dioxide (SO_2) and oxides of nitrogen (NO_2) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Furthermore, the loading, unloading, and transportation of rough stone and gravel, as well as wind erosion of the exposed area and movement of light vehicles, will cause pollution within a 500-meter radius of the project area due to quarrying activities. This has a cumulative impact on the ambient air environment around the project area.

4.5.2 MITIGATION MEASURES

The following measures will be adopted to control impact on the air quality due to mining operations in the lease area due to adoption of which, no major impact on air quality is envisaged due to this proposed opencast mining operation.



Table 4.3 Mitigative Measures for Air Environment

S.NO	Activity	Consequence	Mitigative Measures
			Usage of wet drilling
1	Drilling	Dust Emission	Covering of drill holes with wet cloth
_		Busic Emission	Usage of sharp drill bits for drilling of holes.
			Provision of dust mask to workers working at highly dust prone and affected areas.
			Well-designed blasting parameter, effective stemming to achieve optimum
		Prompt dust emission	breakage occurs without generating fines.
			Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
2	Blasting		Avoiding blasting during high wind periods where the fine dust is carried out away
			easily affecting the ambient air quality.
			Use of controlled blasting techniques with milli second delay detonators to keep
			the dust generation, noise as well as vibration level within the prescribed limits.
			Proper maintenance of HEMM will be carried out to minimize dust and gaseous
3	3 Excavation and Loading	tion and Loading Dust emission, Gaseous Emission	emission at the source level.
			Water sprinkling will be carried out at excavation and loading area.



			Imparting sufficient training to operators on safety and environmental parameters. Avoiding overloading of dumpers.
			Regular wetting of transport road using mobile water tanker.
			Proper maintenance of haul road and other roads
4	Transportation	Dust emission, Gaseous Emission	Avoiding overloading of tippers
	·		Covering of loaded tippers with tarpaulins during transportation
			Vehicular emissions will be controlled through regular and proper preventive
			maintenance only PUC valid vehicles will be used for transportation.
5	Greenbelt	Dust emission, Gaseous Emission	Development of greenbelt / barriers around mine in the safety zone and carrying
		,	out plantation within the lease area.
			Dust mask will be provided to the workers and their use will be strictly monitored
	Occupation Health	Dust emanation, Gaseous Emission	Annual medical checkups, trainings and campaigns will be arranged to ensure
6			awareness about importance of wearing dust masks among all mine workers &
			tipper drivers
			Ambient Air Quality Monitoring will be conducted six months once to assess
			effectiveness of mitigation measures proposed.



4.5.3 AIR QUALITY IMPACT PREDICTION

The AERMOD atmospheric dispersion modeling (AERMOD Cloud remote version) is used for assessment of incremental Ground level concentration (GLC) for the proposed production. Area source model taken into consideration taking into consideration of wet drilling and loading. Further line source model was taken into consideration for transportation through haul road. Baseline meteorological studies were conducted for the period of October to December 2023. The following sources are considered.

TABLE 4.4 Types of Source for Air Pollution in Mining				
S. No. Type of mining operation Type of Source				
1	Wet drilling	Point		
2	Loading	Point		
3	Transportation	Line		

4.5.3.1 ARRIVING EMISSION FACTOR

Emission factor for PM₁₀ for different activities are given below.

	TABLE 4.5 Emission Factors for Mining Activities					
S. No.	Activity	Emission factor	Unit			
1	Wet drilling	0.00008	lb/s			
2	Ore loading	0.0014	Kg/t/s			
3	Transportation	0.26	Kg/VKT			

Source

- Jose I. Huertas & Dumar A, Camacho & Maria E. Huertas, Standardized emissions inventory methodology for openpit mining areas, Environmental Science Pollution Research, 2012.
- 2. AP-42. U.S Environmental Protection Agency, Office of Air Quality Planning and Standards



4.5.3.2 EMISSIONS FROM THE PROPOSED PROJECT

The emissions from each activity after the application of control and mitigation measures like water sprinkling, proper maintenance of transport vehicles, etc., are given below.

	TABLE 4.6 Pm 10 And Pm 2.5 Emission From Mining Activities					
S. No.	Activity PM10 PM2.5					
1	Wet drilling	0.22	0.04			
2	Ore loading	0.87	0.16			
3	Transportation	0.23	0.05			

4.5.3.3 MODEL INPUT DATA:

The air pollution modeling carried out represents the normal operating scenarios. As the project is a mining project the major source of pollution is particulate matter. The SOx and NOx emission will be very less only due to vehicular emission. So the pollutant taken for prediction of incremental concentration is particulate matter (PM 10 & PM 2.5). The predicted incremental Ground Level Concentrations (GLCs) for particulate matter is likely to be contributed by the proposed project. The average predicted 24 hr average concentration has been tabulated as below.

4.5.3.4 EMISSION ESTIMATION

The emission estimations for the activities are detailed below.

Table 4.7 - Area Emissions - Total Material handling

Quantity, TPA	Rough Stone: 2,06,540 m3 Gravel: 38,752 m3
Operational Hours Per Year	2400
Activity Rate, t/hr.	400.5416667
Emission of dust, g/t.	0.14
Emission of dust, g /hr.	56.07583333
Area of influence, m ²	630
Uncontrolled emission rate g/s/m ²	0.000090265



Controlled emission rate, PM10 g/s/m ²	0.0000090265
Controlled emission rate, PM2.5 g/s/m ²	0.000060177

Table 4.8 - Line Source - Transport of Material from Pit to Boundary

Quantity, TPA	Rough Stone : 2,06,540 m3 Gravel :38,752 m3
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	44650
Lead length/trip, Km	0.8
Total VKT/Year	76904
Emission Kg/VKT	0.26
Total emission Kg/Year	19323.05
Uncontrolled emission rate g/s/m	9.0265
Controlled emission rate, PM10 g/s/m	0. 90265
Controlled emission rate, PM2.5 g/s/m	0. 6017



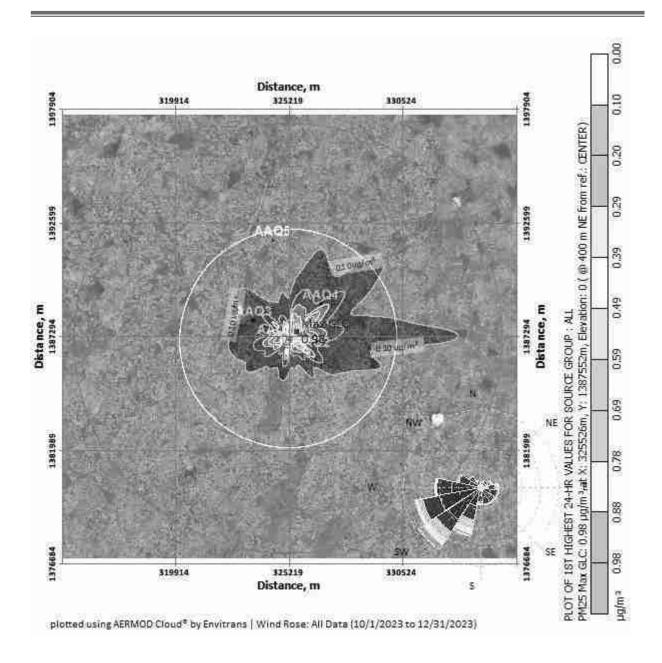


Figure 4.2 Isopleth of GLC Prediction for PM_{2.5}



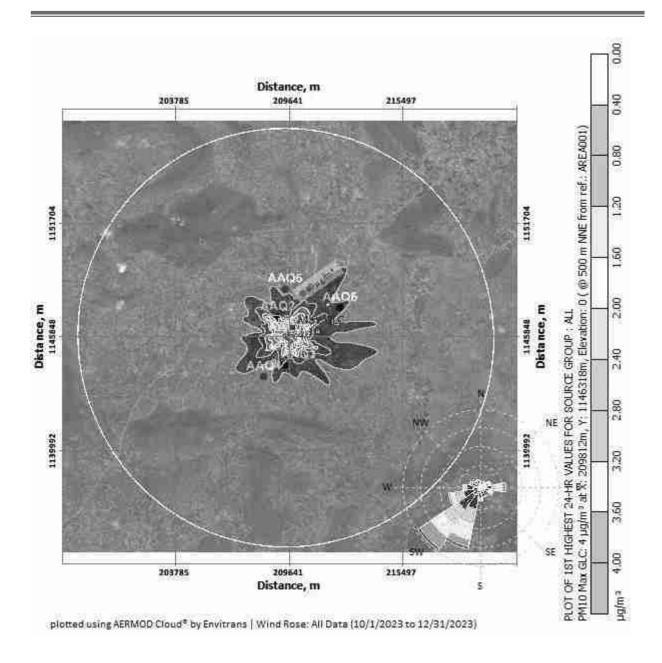


Figure 4.3 - Isopleth of GLC Prediction for PM10



4.5.3.5 PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM10, PM2.5, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.9 to 4.10.

	Table 4.9: Concentrations of PM 2.5 after Project Implementation					
SL.N o	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentrati on	Statutory Limits in µg/m³	
1	Within Mine Lease area	34.1	<1.0	35.1		
2	Seegampatti	26.9	<1.0	27.9		
3	Naveen Garden	25.3	<1.0	26.3	60	
4	Kottaiyur Natham	25.4	<1.0	26.4		
5	Akkiyampatti	27.2	<1.0	28.2		
6	Lekkanaykanpatti	28.2	<1.0	29.2		

	Table 4.10: Concentrations of PM 10 after Project Implementation					
SL.N o	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentratio n	Statutory Limits in µg/m3	
1	Within Mine Lease area	73.9	4.0	77.9		
2	Seegampatti	56.0	3.60	59.6		
3	Naveen Garden	54.4	2.80	57.2	100	
4	Kottaiyur Natham	54.7	2.40	57.1		
5	Akkiyampatti	56.3	1.20	57.5		
6	Lekkanaykanpatti	58.4	<1.0	59.4		

The above report seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM_{10} are in the range of 57.1 μ g/m³ to 77.9 μ g/m³ and for $PM_{2.5}$ are in the range of 26.3 μ g/m³ to 35.1 μ g/m³ which are within the statutory limits in each case. The



mitigation measures undertaken in the mine for control of air pollution are given below.

- Wet drilling will be practiced in drilling operation.
- Water sprinkling will be done in haul roads & loading etc.
- The mines workers are provided with the dust masks.
- Three layer plantation in the safety zone.
- DG sets shall be periodically maintained as per manufacturer's specifications.

Carbon Emission

Description	Per Day	Per year	For Five Years
Total fuel	51.83	13,995	69,976
consumption in liters			
Co2 emission in kg	139	37,507	1,87,536

4.6 NOISE ENVIRONMENT

The ambient noise levels in the study area have been discussed in Chapter - 3. The data shows that the existing noise levels are within statutory limits. The impact prediction and control measure for noise environment due to mining and allied activities is described below:

4.6.1 IMPACT DUE TO NOISE AND VIBRATION

The main noise generating source during mining operation and related activities are drilling, excavation, loading, unloading and transportation. Intermittent noise is generated due to operation of diesel generator.

Table 4.11 - The likely noise level in the lease area

SL.No	Source Name	Noise Level in dB (A)
1	Diesel generator	102
2	Excavator Operation	95



3	Trucks movement	95
4	Drilling	105
5	Blasting	120

4.6.2 MITIGATION MEASURES FOR NOISE CONTROL

The following noise mitigation measures are proposed for control of Noise

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker are utilized for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Green Belt will be developed around the project areas and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured though training and awareness.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

4.6.3 GROUND VIBRATION

The vibration due to blasting can cause damage to the nearby structures if appropriate technology and control measures are not adopted in the blasting operation. Fly rock is another possible damage causing outcome of blasting. There are many factors which influence fly rock during blasting. Most important of these



factors are long explosive column with little stemming column, improper burden, loose material or pebbles near the holes and long water column in the hole.

Mitigative Measures

- Proper quantity of explosive, suitable stemming materials and appropriate delay system should be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting should be maintained as per DGMS guidelines;
- Blasting shelter should be provided as per DGMS guidelines;
- Blasting operations shall be carried out only during day time;
- The charge per delay shall be minimized and preferably more number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity shall be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- Blasting will be carried out under the supervision of statuary persons as approved by DGMS.
- A well-defined SOP will be framed under the leadership of top management and the same will be followed for each blasting.
- Regular PPV monitoring will be carried out to ensure PPV limits i.e., 5.0 mm/s.

4.7 BIOLOGICAL ENVIRONMENT

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 below Table.



Table 4.12 Ecological Impact Assessments and Its Mitigations -Part 1

S.NO	Issues	Assessment	Mitigations
1	Proximity to national	Reserve Forest - 280m (W)	The fugitive dust
	park/ wildlife	Chinnayampatti R.F - 2.97km	generated by the
	sanctuary / reserve	(W)	mining activity will
	forest / mangroves /	Vellimalai R.F - 3.62km (S)	be suppressed by
	coastline/estuary/sea	Madukamalai R.F - 4.06km	frequent sprinkling
		(SW)	of water based on
		Karumalai R.F - 5.3km (S)	evaporation rate in
		Nedunkuttu R.F - 6.80km (SW)	the site specific.
		Reserve Forest - 2.09km (NW)	All the mitigation
		Velamalai R.F - 5.0km (NW)	measures
		Mamalai R.F - 6.6km (NE)	mentioned in
		There is one reserve forest at 280	section 4.3 will be
		m in west direction within 1.0 km	implemented to
		radius. The proposed project does	protect the reserve
		not attract Forest Conservation	forest located
		Act, 1980. There is no wild life	nearby.
		sanctuaries found around 10km	
		radius and the area does not	
		attract Wildlife Protection Act,	
		1972 and C.R.Z. Notification,	
		1991.	
2	Activities of the	No breeding and nesting site was	The noise due to the
	project	identified in mining lease site. The	mining activity will
	affects the	fauna sighted mostly migrated	be controlled by
	breeding/nesting	from buffer area. The fauna in the	developing green
	sites of birds and	buffer zone may be affected by	belt all along the
	animals	noise generated due to mining	lease boundary,
		activity.	regular
			maintenance of
			tippers, excavators,
			transporting the



			tippers within speed	
			limits.	
3	Located near an area	No endangered, critically	NIL	
	populated by rare or	endangered, vulnerable species		
	endangered species	sighted in core mining lease area		
		and also in buffer zone.		
4	Proposed project	No waterholes are in core zone.	NIL	
	restricts access to	No Wild life sanctuary within		
	waterholes for	10km radius.		
	wildlife			
5	Proposed mining	"NO" scheduled or threatened	NIL	
	project impact	wildlife animal sighted regularly		
	surface water quality	in core area. There is no proposal		
	that also provide	for discharge of wastewater to		
	water to wildlife	nearby water bodies.		
6	Proposed mining	Surface runoff management structures like garland		
	project increase	drain, settling pond etc. as explained above will be		
	siltation that would	constructed and as such there will r	not be any appreciable	
	affect nearby	impact on surface water quality which in turn can affect		
	Biodiversity area.	the bio diversity of the area.		
7	Risk of fall/slip or	In the post mining stage, wire fencing is proposed all		
	cause death to wild	around the mined-out void to prev	ent falling of animals	
	animals due to	in the mine pits.		
	project activities			
8	The project release	As the proposed project is mining	NIL	
	effluents into a water	activity there will be no		
	body that also	possibilities of release of		
	supplies water to a	effluents. Also, no Wild life		
	wildlife	sanctuary within 10km radius.		
9	Mining project effect	There is one reserve forest at	Mitigation measures	
	the forest-based	280m in western direction located	mentioned in	
	livelihood/ any	within km radius.	section 4.3 will be	
	specific forest		implemented to	
	production which		product to the	



	local livelihood		reserve forest
	depended		located nearby.
10	Project likely to affect	No migration route observed	NIL
	migration routes	during monitoring period.	
11	Project likely to affect	No such significantly important	NIL
	flora of an area,	medicinal value species within the	
	which have medicinal	ML area and its nearby region.	
	value		
12	Forestland is to be	"NO". There is no forest land	NIL
	diverted, has carbon	within the lease area.	
	high sequestration		
13	The project likely to	'NO". No wetland, fish breeding	NIL
	affect wetlands, fish	grounds, marine ecology present	
	breeding grounds,	in core mining area.	
	marine ecology		

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



Table 4.13 Ecological Impact Assessments and Its Mitigations -Part 2

Identified Impacts	Ecological Significance of impact	Magnitude	Phase / duration	Reversibility	Mitigation
Project site Habitat due to Site Clearance. Impact on Surrounding habitat		Low impact Temporary Impact	Planning stage Operational	Irreversible Reversible	The quarried-out pit will be used as water storage pond which increases agricultural activity in the buffer zone. The sprinkling of water over the haul road will be done.
due to fugitive emission	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.		stage		Then completely wet drilling will be take place. The transportation vehicles will be maintained and serviced Properly.
road construction	No Road construction is required to assess the project site. The existing internal Road connects the project site to the existing SH and NH	No Impact	-	-	-



Ecological Impact on	Since the proposed project is a mining	No impact			-
Surrounding/ Eco	activity no waste water generation is		-	-	
sensitive habitat due	expected. Sewage will be generated				
to waste water	due to the workers				
generated from the					
project activity.					
Ecological Impact on	During drilling or blasting,	Temporary	Only during		Avenue trees will be planted
Surrounding / Eco	transportation of rough stone noise	impact	drilling,	NO	along the lease area to
sensitive habitat due	will be generated and it may slightly		blasting		minimize the noise level. Milli
to Noise generated	affect the movement of fauna around		operation and		second detonators shall be
from the project	the lease area.		transportation		used preferably 25–50ms per
activity.			period. (5		delay to control vibrations.
			years)		Regular maintenance of
					vehicles and driving the
					tipper within specified limits
					also control the noise
					generations.
Ecological Impact on	There is no eco sensitive habitat found	Temporary	During		The truck driver will be
Surrounding/ Eco	around the lease area. The fugitive	impact	Operation	NO	advised to drive the vehicle
sensitive habitat due	emission from drilling, blasting,		Phase		within 20km/hr inside the
to Transportation	vehicle movement will form layer in				lease area and 40km/hr



leaves thus reducing the gaseous	outside the lease area. The
exchange process. This ultimately	sprinkling of water over the
affects the growth of plants. The	haul road will be done. Then
animals like dog, cattle may get	completely wet drilling will be
accident due to truck movement.	take place.



4.7.1 ANTICIPATED IMPACT

- The deforestation, soil degradation, water, air, and noise pollution caused by mining operations typically have a direct or indirect negative impact on the fauna and floral composition of the project region.
- Although impacts on important habitat components will happen on a local level, they would not be crucial for the life cycle requirements of the species as seen or anticipated on a regional level.
- Additionally, during the conceptual stage, the top bench's mined-out areas
 will be re-vegetated by planting native or local species, and the lower
 benches will be converted into rainwater harvesting structures after the
 mining activities are finished, replacing habitat resources for fauna species
 in this area for a longer period of time.

4.7.2 MITIGATION MEASURES

- Necessary mitigative measures like dust suppression, proper maintenance of equipment's, roads will be carried out to prevent dust generation.
- There is no proposal to discharge any effluent into nearby water bodies.
- Surface runoff management structures like garland drain, settling pond, protective bund etc. as explained above will be constructed and as such there will not be any appreciable impact on surface water quality which in turn can affect the bio diversity of the area.
- Construction of barbed wire fencing all around the boundary to prevent falling of animals in the mine pits.

4.7.3 GREENBELT DEVELOPMENT PLAN

In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly in proposed mine lease area earmarked for plantation program as per Approved Mining Plan in different phases. This habitat improvement program would ensure the faunal species to re-colonize and improve the abundance status in the core zone. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area.



Table - 4.14 GREENBELT DEVELOPMENT PLAN

Year	No. of trees proposed to be planted	Survival %	Name of the Species	No. of trees expected to be grown
1	80	80%	Neem,	64
II	80	80%	Casuarina,	64
III	80	80%	Pongamia	64
IV	80	80%	pinnata, etc.,	64
V	80	80%		64
	400			320

Nearly 0.70 Ha. of area is proposed for Greenbelt development by planting 80 Nos of trees during every year and expected growth is around 64 Nos @ survival rate of 80%.

The objectives of the green belt cover will cover the following:

- Noise abatement.
- Reuse of waste water to the extent possible.
- Prevention of soil erosion.
- Ecological restoration.
- Aesthetic, biological and visual improvement of area due to improved vegetative and plantations cover.

Table 4.15 Budget for Greenbelt Development Plan

Activity			Year			Cost	Total Cost	
	Ι	II	III	IV	V		Capital	Recurrin
							Cost	g cost
								/Annum
Plantati	80	80	80	80	80	@ 200 /	80,000	12,000
on –						Saplings		
inside						(capital) and @		
lease						30 per plant		
area						maintenance		
						(recurring)		
Plantati	200	200	200	200	200	@ 300 /	3,00,00	30,000
on –						Saplings	0	
Outside						(capital) and @		
						30 per plant		



lease area				maintenance (recurring)		
		To	tal		3,80,000/-	42,000/-

4.8 SOCIO - ECONOMIC

From the primary Socio-economic survey & through secondary data available from established literature and census data 2011, it is found that there would be positive impact on Socio-economic condition of the nearby area. There is no habitation within 300 m of the proposed mining lease area. Therefore, no major impact is anticipated on the nearby habitation during the entire life of the mine. The entire lease area is in the proponent's possession. Hence, there are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise here.

Anticipated Impact

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

The mining operations in the proposed mine will employ about 23 persons directly and 20 people on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

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



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

The State and the Central governments will also get benefited through financial revenues by way of royalty, tax etc from this project.

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
- Air pollution control measure will be taken to minimize the environmental impact within the core zone
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc., from this project directly and indirectly
- From above details, the quarry operations will have highly beneficial positive impact in the area

Mine management will contribute for the upliftment of these villages by conducting regular medical camps, assistance in developing necessary infrastructure facilities like maintenance of schools, village roads, drinking water supply, etc.

From above details, it is clear that the project operations will have highly beneficial positive impact in the area. However, towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs.5.0 Lakhs under Corporate Environmental Responsibility.



4.9 OCCUPATIONAL HEALTH AND SAFETY

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

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

- Respiratory hazards
- Noise
- Explosive storage and handling

Respiratory Hazards

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

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

Noise

Workers are likely to get exposed to excessive noise levels during mining activities.

The following measures are proposed for implementation

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



Occupational Health Survey

All the persons will undergo pre-employment and periodic medical examination as per DGMS and 12th National Mines Safety Council recommendation.

The PP will maintain occupational health history card for their Employees.

The PP will establish first aid station within project site.

Good Drinking Water specialty will be provided at the site level.

4.10 WASTE MANAGEMENT

4.10.1 SOLID WASTE

Since the entire mined out material will be utilized there will not be any solid waste generation from this project. However, the Solid waste (MSW) generated from administrative activities will be properly collected and disposed to Govt. Authorized yards / Re-cylers / Disposers.

4.10.2 LIQUID WASTE

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 0.7 KLD will be discharged in soak pit via septic tank.

4.10.3 HAZARDOUS WASTE MANAGEMENT

In this project the following management practices will be followed:

In the quarrying operation, the source of hazardous waste is from machinery maintenance activities that are waste oil/ Waste lubricants / Used filters / Used Hydraulic horses. The said hazardous waste are very negligible quantity , it will be properly collected in the source level, stored in impervious storage yards and disposed off as per the Hazardous waste (Trans-boundary Movement) Management Rules, 2016.



4.10.4 PLASTIC WASTE

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



5.0 ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 ALTERNATE TECHNOLOGY

The mining technology is mechanized open cast in single-shift operation without any change in technology. The operation will be carried out as per DGMS norms. No alternate technology will be used. Details of the technology used are given in Chapter 2.

5.2 ALTERNATE SITE

The project is a mining project and will be operated within the lease grant area. So no alternate sites have been assessed. Since the resource (Rough stone) is site-specific, the chosen location is the only site to carry out Rough Stone quarry.



6 ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

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

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

6.2 MONITORING MECHANISM

The PP will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine.

6.3 ENVIRONMENTAL MONITORING SCHEDULE AND FREQUENCY

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



modified / improved in consultation with local authorities. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints. The monitoring schedules to be adopted in this quarry are given below.

Table 6.1 Environmental Monitoring Schedule

S.NO	Environmental	Parameters to be	Monitoring	Frequency
	Attribute	monitored	Locations	
1	Air Quality	Particulate Matter	4 locations in the	Once in
		(PM2.5 and PM10),	buffer zone and 2	season
		Sulphur dioxide (SO2),	work zone locations.	
		Oxides of Nitrogen		
		(NO2), Respirable.		
2	Water Quality	General, Physical, and	Ground Water	Once in
		chemical parameters	samples (around the	season
			project area) and	
			Mine Pit water	
			samples	
3	Hydrogeology	Water Levels	Nearby wells and	On yearly
			Borewells	basis pre
				and post
				monsoon
				level
4	Noise	Leq. Lmax Lmin, Leq	Work zone locations	Once in
		Day & Leq Night dB(A	and buffer zone	Season
			villages	
5	Vibration	Peak Particle Velocity	Mine periphery	Regular
				Interval
6	Soil	Physical and Chemical	2 Locations (1 Core	Once in
		Characteristics	& 1 Buffer)	Season.
7	Greenbelt	Maintenance	Within the lease	Regular
			area	interval



6.4 BUDGET FOR IMPLEMENTAION

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and Monitoring work will be outsourced to external laboratory approved by NABL / MoEF. Total EMP Cost for 5 years is 214.69 lakhs i.e., Rs.24.94 Lakhs of Capital + Recurring cost Rs. 189.75 lakhs for Five years. The breakup of EMP cost are detailed in Table 10.2 of Chapter 10.

6.5 SUBMISSION OF PERIODICAL REPORTS

The monitored data on air quality, water quality, noise levels and other environmental attributes will be periodically examined by the Mine Management Coordinator and Respective Head of Organization for taking necessary corrective measures.

The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF & CC and Half-Yearly Compliance Monitoring Reports to MoEF & CC Regional Office and SEIAA.

Periodical reports to be submitted to: -

- MoEF & CC Six month EC compliance report
- TNPCB Half yearly CTO Compliance report
- MOEF & CC & TNPCB annual Environmental Statement Report. (Form V)
- Annual Hazardous Waste Return(Form IV)
- Department of Geology and Mining: quarterly, half yearly and annual reports.



7 ADDITIONAL STUDIES

The following Additional Studies were done as per items identified by project proponent and the regulatory authority.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Mine Closure Plan

7.1 PUBLIC CONSULTATION

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

7.2 RISK ASSESSMENT

The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The whole quarry operation will be carried out under the direction of a Qualified Competent person holding certificate of competency to manage a metalliferous mine granted by the DGMS. Factors of risks involved due to human induced activities in connection with this proposed mining & allied activity with detailed analysis of causes and control measures for the mine is given in below Table 7.1.



Table 7.1 Risk Assessment and Control Measures

S.NO	Risk Factor	Causes of risk	Control Measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations. Entry of unauthorized persons will be prohibited. Fire-fighting and first-aid provisions in the mine office complex and mining area. Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use. Quarry operation will be done as per approved mining plan and other applicable statutory guidelines issued by DGMS, Dept. of Mining & Geology-TamilNadu. Handling of explosives, charging and firing shall be carried out under competent statutory persons. A comprehensive standard operating procedure (SOP) will be prepared as per DGMS guidelines and the same will be circulated to all the employees and it will be strictly followed in the all face of mining operation.
2	Drilling	Improper and unsafe practices. Due to high pressure of compressed air, hoses may burst. Drill Rod may break.	Safe operating procedure established for drilling (SOP) will be strictly followed. Only trained operators will be deployed. No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places.



			Drilling shall not be carried on simultaneously on the benches at places directly one above the other. Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual. Drills unit shall be provided with wet drilling to ensure efficient working.
3	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/ fining of blast holes. Vibration due to movement of vehicles.	Restrict maximum charge per delay as per approved mining plan. Proper blasting design with optimum spacing & burden, Charge per delay and stemming. SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation. Shots are fired during day time only. Charging and firing shall be carried out in the same day. Siren will be done for each blasting. Blasting evacuation plan prepared and executed. The danger zone will be distinctly demarcated (by means of red flags).
5	Transportation	Potential hazards and unsafe workings contributing to accident and injuries. Overloading of material. While reversal & overtaking of vehicle. Operator of truck leaving his cabin when it is loaded.	Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audiovisual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition. Unauthorized person will not be allowed to operate or ride on the vehicle. Loading according to the vehicle capacity.



			Periodical maintenance of vehicles as per operator manual.
6	Natural calamities	Unexpected happenings	An emergency management plan will be prepared considering all possible national calamity and the same will be executed if any such situation occurs. Escape Routes will be provided to prevent inundation of storm water. Fire Extinguishers & Sand Buckets in the designated areas.
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.



7.3 DISASTER MANAGEMENT PLAN

This being a small rough stone project that too working in a safe area, no major disaster is expected after following all the statutory rules and regulations.

7.3.1 MODEL DISASTER MANAGEMENT PLAN

The lessee has formulated the disaster Management plan keeping all eventualities in mind.

The mining operation will be carried out under the direction of qualified mines manager and supervisors, based on the guidelines and directions of Directorate General of Mines Safety (DGMS) and Indian Bureau of Mines. Code of practice of different operations will be formulated to ensure safety of men and machines and to avoid various hazards mentioned above. Mine workers will be provided training on safe work practices. The following natural/ industrial hazards may occur during normal operation; slope failure at the mine faces; accident due to heavy equipment/ machinery.

In order to prevent or take care of hazard / disasters if any the following control measures have been adopted.

- All safety precautions and provisions of Metalliferous Mines Regulations (MMR), 1961 is strictly followed during all mining operations.
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Entry of unauthorized persons into mine & allied areas is completely prohibited.
- Fire-fighting and first-aid provisions in the mines office complex and mining area are provided.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees and the use of same is strictly adhered to through regular monitoring.
- Training and refresher courses for all the employees working in hazardous premises. Working of mine, as per approved plans and



regularly updating the mine plans.

- Handling of explosives, charging and blasting are carried out only by qualified persons following SOP.
- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Provision of high-capacity standby pumps with generator sets with enough quantity of diesel for emergency pumping especially during monsoon.
- A blasting SIREN is used at the time of blasting for audio signal.
- Before blasting and after blasting, red and green flags are displayed as visual signals. Warning notice boards indicating the time of blasting and NOT TO TRESPASS are displayed at prominent places.
- Regular maintenance and testing of all mining equipment were carried out as per manufacturer's guidelines.

7.3.2 OBJECTIVE OF DISASTER MANAGEMENT PLAN

The objective of disaster management plan is to identify mitigation measures to avoid hazards turning in to risk, the materials required for implementing the same, the personnel requirement and their roles and responsibilities, and the communication and operating procedures to be adopted in case of an emergency.

Communication System

The telephone numbers and addresses of mine sites in the vicinity, nearest fire station, police station, local hospital, electricity department, ambulance, and local public representatives and revenue officials shall be prepared and kept in custody of PP.

Facilities

The office shed will have provision of first aid centre to provide first aid in the event of an emergency. The office shed will also function as emergency control room. It will be provided with telephone and mobile phones, and a vehicle for emergency transport.



Personnel

The PP is responsible for overall supervision of the disaster management plan. He will be assisted by supervisors, in implementing the emergency management plan and procedures.

Operating Procedures

The operating procedures during emergencies are related communication to the immediate supervisor, who would relay the same to PP. The PP may assess the requirement of first aid, external assistance, transportation to nearby hospital contingent on the emergency. In the absence of mines manager, the senior most supervisor will be made responsible for disaster management.

7.4 CUMULATIVE IMPACT STUDY

There are two existing Quarries and this proposed Quarry within a radius of 500 m from this proposed project area. The existing and proposed quarries situated within 500 m radius are presented in below Table 7.2 and the letter received from Dept. of Geology and Mining, Tiruchirappalli stating the quarries detail within 500m radius is enclosed in Annexure – 3.

Table 7.2 Details of Quarries within 500m radius

SI. No	Name of the Quarry Owner (Tvl.)	S.F. Nos, Village & Taluk	Extent (Ha)	Lease Period						
a. Al	a. Abandoned Quarry									
	Nil									
b. Ex	b. Existing Quarries									
1.	Tvl.R.R. Infra Construction No. 2, Visalatchipuram Madurai - 14	S.F. No. 51/4, 54/1(P) Lekkanayakkanpatti Village, Marungapuri Taluk	2.65.0	02.12.2021 to 01.12.2026						
2.	Tmt.J. Magarunisa W/o. Jamal Mohammed No. 65, Hospital Street,	S.F. No. 104/1 and 104/2, Lekkanayakkanpatti Village, Marungapuri Taluk	1.66.5	04.02.2021 to 03.02.2026						



	Thuvarankurichi, Trichy			
c. Pi	oposed Quarries			
		S.F. Nos. 102/1A, 102/1B,		
	Thiru.R. Arumugam	102/1C, 102/1D, 102/1E,		
1	S/o. Ramaiah	102/1F, 102/1G, 102/1H	2.62.0	
1	No. 47, North Street,	AND 102/1I,	2.02.0	_
	Lembalakudi, Trichy	Lekkanayakkanpatti		
		Village, Marungapuri Taluk		

As seen above, although the individual lease area of this project is less than 5 hectares, the existing two Quarries (2 Nos) within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 6.93.5 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

7.4.1 AIR ENVIRONMENT

The cumulative production load of existing and proposed Rough stone and gravel quarries within cluster is shown in below table.



Table 7. 3 Salient Features of Existing & Proposed Quarries

Description		P1	P2	Р3
Name of the Quarry		R. Arumugam	Tvl.R.R. Infra Construction	Tmt.J. Magarunisa
Geological Resources in m3	Rough stone	7,86,000m ³	17,82,760	10,59,300
	Gravel	52,400m ³	50,936	35,310
Mineable Reserves in m3	Rough stone	2,56,905m ³	5,39,170	1,99,220
	Gravel	38,752m ³	42,280	25,528
Five years plan period as in the approved mining plan	Rough stone	2,06,540m ³	5,39,170	1,99,220
	Gravel	38,752m ³	42,280	25,528
Production in m3	Peak Production	60,575 m ³	1,42,550	39,844m3
Production per day in tons	Peak Production	505	1188	332
Lorry Loads per day in Nos	-	51	119	34
Employment in Nos		23	35	22
Proposed Depth in meters		17 BGL	57m	42 (2 m Gravel + 40 m Rough Stone)
Status of the quarry		Proposed	Existing	Existing

Based on the above production quantities the emissions due to various activities in all the 3 mines (2 Existing + 1 Proposed) includes various activities like ground preparation, excavation, handling and transport.



7.4.1.1 EMISSION ESTIMATION FROM CLUSTER

Table 7. 4 Incremental & Resultant GLC within cluster for PM2,5

SL.N o	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Within Mine Lease area	34.1	1.38	35.48	
2	Seegampatti	26.9	1.10	28.0	
3	Naveen Garden	25.3	<1.0	26.30	60
4	Kottaiyur Natham	25.4	<1.0	26.40	
5	Akkiyampatti	27.2	<1.0	28.20	
6	Lekkanaykanpatti	28.2	<1.0	29.20	

Table 7. 5 Incremental & Resultant GLC within cluster for PM₁₀

SL.N o	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentr ation	Statutory Limits in µg/m³
1	Within Mine Lease area	73.9	4.10	78	
2	Seegampatti	56.0	3.60	59.6	
3	Naveen Garden	54.4	2.87	57.27	100
4	Kottaiyur Natham	54.7	2.46	57.16	
5	Akkiyampatti	56.3	1.23	57.53	
6	Lekkanaykanpatti	58.4	<1.0	59.4	

The air quality modeling report for cluster seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM_{10} are in the range of 57.16 $\mu g/m^3$ to 78 $\mu g/m^3$ and for $PM_{2.5}$ are in the range of 26.3 $\mu g/m^3$ to 35.48 $\mu g/m^3$ which are within the statutory limits in each case.



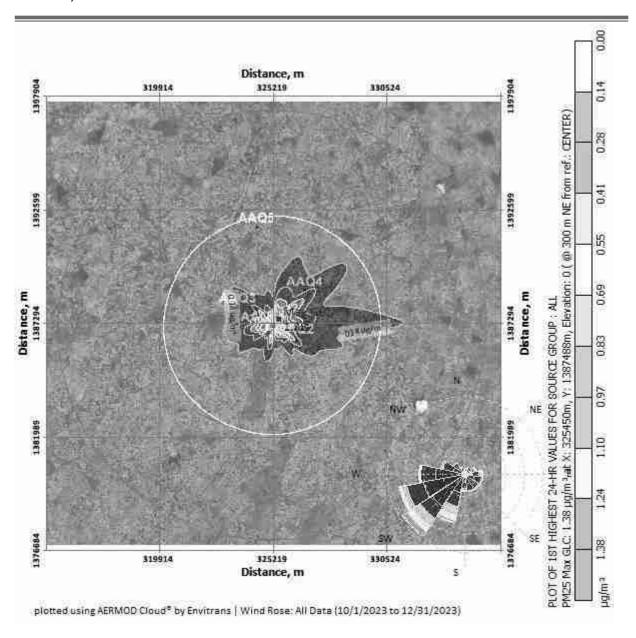


Figure 7.1 Cluster Isopleth of GLC Prediction for PM_{2.5}



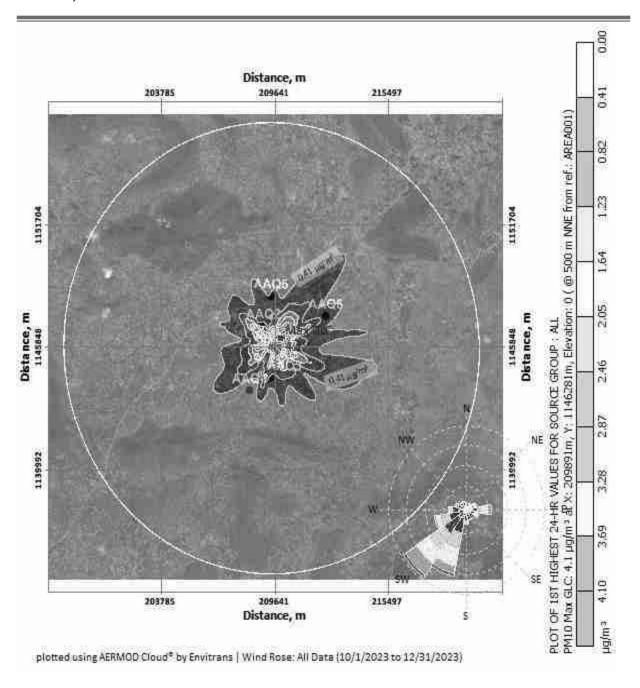


Figure 7.2 - Cluster Isopleth of GLC Prediction for PM₁₀



7.4.2 CUMULATIVE IMPACT ON TRAFFIC

The mined out minerals will be transported by means of trucks to the nearby crusher for producing stone aggregates of different. The cumulative impact on traffic due to transportation of minerals from these three leases are provided below:

Table 7. 6 - Impact on Traffic

Quarry	Production load in tons/day	No. of Lorry Load per day
P1	505	51
P2	1188	119
Р3	332	34
Total	2025	204

As two quarries already exist, they are part of the current traffic. The proposed project will bring 51 trips per day. The existing road can absorb this additional traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

7.4.3 WATER ENVIRONMENT

The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. From the nearby working quarries it is observed there are no seepages in the mine faces because of the hard rock formation. The ground water table in this area is 55 – 56 m and the proposed ultimate depth is upto 17 m bgl. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.

7.4.4 CUMULATIVE IMPACT ON SOCIO-ECONOMIC ENVIRONMENT

The mining operations in the proposed this mine will provide direct employment opportunity and indirect employment opportunity for scores of people through allied opportunities in logistics, contract workers, trading, repairing works etc. Various mitigative measures suggested in this report will be properly implemented to ensure



that no adverse impact is felt on the socio economic and ecological front in the area. Total 57 employment opportunities already provided by two existing mines in cluster.

Table 7.7 SOCIO ECONOMIC BENEFITS FROM 2 MINES

	Employment	Project Cost	CER
P1	23	Rs. 75,92,000/-	Rs.500000/-
P2	11	Rs. 81,70,000/-	Rs. 2,46,000/-
P3	22	Rs.46,15,500/-	Rs. 92,310/-
Total	56	Rs.2,03,77,500/-	Rs.8,38,310/-

7.5 CLUSTER MINE CLOSURE PLAN

In the mine closure stage all necessary measures will be taken as per Act & Rules, there is no proposal for back filling, reclamation and rehabilitation in any of the proposals. The quarried pits after the end of life of mine will be properly fenced all around to prevent inherent entry of public and cattle and all the statutory requirements will be fulfilled. As already explained, in the post mining stage the rainwater harvested in the mined- out void shall be utilized for irrigation and domestic needs locally. The mine closure plan is provided in Figure 2.9.





8 PROJECT BENEFITS

The project area is located on barren land, thereby causing no impact on the loss of agriculture or forest land. The project will create employment opportunities in the area. There will be no adverse effect of mining on the socioeconomic status of the people; rather, mining activities will improve their standard of living. The mining activity creates employment opportunities for the local people, and this definitely raises their economic status. Apart from the overall beneficial impact of the project on the local people of the region, it is felt necessary to augment facilities in the fields of education, health, and social awareness, including concern for the environment and ecosystem.

The mining activity at proposed Rough Stone and Gravel Quarry of Thiru. R. Arumugam will create direct employment opportunity for 23 local people. The PP has proposed CER amount of Rs. 5.0 Lakhs for project school development.



9 ENVIRONMENTAL COST BENEFIT ANALYSIS

Environmental Cost Benefit Analysis is recommended during the scoping stage, if needed. In the TOR granted by SEIAA, Tamil Nadu, it is not recommended. Hence not applicable.



10 ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management plan is a site-specific plan. It is developed to ensure that the project is implemented in an environmentally sustainable manner, where all contractors and subcontractors, including consultants if any, understand the potential environmental risks arising from the project and take appropriate actions to minimize those risks. EMP also ensures that the project implementation is carried out in accordance with the planned design and by taking appropriate mitigation measures to reduce adverse environmental impacts during project's life cycle.

10.1 ENVIRONMENTAL POLICY

The Project Proponent – Thiru. R.Arumugam shall carry out all the quarrying operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent will:

- Meet the requirements of all laws, Acts, ordinances, rules, and regulations that are pertinent to its operations and activities.
- Implement a programme to educate employees about environmental issues in general and their personal environmental responsibilities at work.
- Allocate the resources required to guarantee that the environmental policy is carried out.
- Set up monitoring systems to alert as soon as there is a problem or a performance that is unexpected in relation to environmental protections.
- Implement monitoring programs to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.



10.2 ENVIRONMENTAL MANAGEMENT PLAN

The impacts and detailed mitigation measures due to this mining project are detailed in chapter 4. The overall Management Plan at the site level are elaborated in this chapter. Details of EMP measures for implementation in the mine are given in the table 10.1.

Table 10.1 - ENVIRONMENTAL MANAGEMENT PLAN

Environmental	Mitigation Measures					
Parameter						
Air	Wet drilling to suppress the dust emission from drill machine					
	Regular water sprinkling on haulage road through fixed water					
	sprinkler.					
	2.5 m³/day of water will be used for dust suppression.					
	Avoiding blasting during high wind period, night times and					
	temperature inversion periods.					
	Regular grading of haul road to clear accumulation of loose material.					
	It will be ensured that vehicles are properly maintained to comply with					
	exhaust emission requirements					
	Maintenance as per operator manual of the equipment and machinery					
	in the mines to minimizing air pollution					
	Ambient Air Quality Monitoring carried out in the project area and in					
	surrounding villages to access the impact due to the mining activities					
	and the efficacy of the adopted air pollution control measures.					
	Afforestation for control of dust.					
Water						
Surface water	The nearest water bodies to the project site include a kuttai, which is					
	located adjacent to the project site in eastern side and a seasonal odai,					
	which is situated 300 meters to the northeastern side. Palar River is					
	situated at 1.40 km (SW).					
	There is no effluent discharge from this proposed Quarry. So no impact					
	is anticipated.					



	Surface runoff management structures like garland drain of required
	length which is connected to a settling pond will be constructed around
	the quarry to collect the rain water.
	Monthly or after rainfall, inspection for performance of water
	management structures and systems.
	There is no discharge of any effluent into nearby water bodies.
Ground Water	The quarrying operation is proposed upto a depth of 17 m maximum
	below ground level, the water table in the area is 56 m below ground
	level, hence the project will not intersect the Gund water table during
	entire quarry period.
Water	The required water of 6.0 KLD will be procured from outside agencies
Consumption and	initially and later rainwater harvested in the mine pit shall be used
Wastewater	other than drinking purpose.
generation	Domestic wastewater generation of 0.7 KLD will be discharged in soak
	pit via septic tank.
	Conduct ground water and surface water monitoring for parameters
	specified by CPCB
Noise	The workers employed are provided with personal protective
	equipment (PPE) as such, earmuffs and ear- plugs for the protection
	from high noise level generated at the mine site wherever required.
	Noise levels are controlled by using optimum explosive charge, proper
	delay detonators and proper stemming to prevent blow out of holes.
	Development of thick greenbelt all along the Buffer Zone (7.5 Meters)
	of the project area to attenuate the noise and the same will be
	maintained.
	Preventive maintenance of mining machinery and replacement of
	worn-out accessories to control noise generation.
	Regular ambient noise level monitoring is carried out in the project
	area and in surrounding villages to access the impact due to the mining
	activities and the efficacy of the adopted noise control measures.



Ground Vibration	Controlled blasting using delay detonators will be carried out to
and Fly Rock	maintain the PPV value well within the prescribed standards of DGMS.
Control	
	Delling and blacking will be rewind under the commission of qualified
	Drilling and blasting will be carried under the supervision of qualified
	persons.
	ensure blast holes are adequately stemmed for the depth of the hole
	and stemmed with suitable angular material.
	Undertake noise or vibration monitoring.
Land	There is no change will be in the land use pattern as mentioned in the
Environment	approved mining plan a such mine pit, safety zone etc., At conceptual
	stage, the mining pits will be converted into Rain Water Harvesting.
	Remaining area will be converted into greenbelt area.
	Garland drains with catch pits / settlement traps to be provided all
	around the project area to prevent run off affecting the surrounding
	lands.
	The periphery of Project area will be planted with thick plantation to
	arrest the fugitive dust, which will also act as acoustic barrier.
	Frequent Soil and ground water testing as per Environmental
	Monitoring Plan.
Top Soil /	There is no waste anticipated in this rough stone and gravel Quarry.
Overburden	The entire quarried minerals will be utilized.
Biological	During mining, three-layer thick plantation will be carried out around
Environment	the project periphery, on safety barrier zone, on top benches of
	quarried out area etc.,
	The main attributes that retard the survival of sapling is fugitive dust,
	this fugitive dust can be controlled by water sprinkling on the haul
	roads and installing a sprinkler unit near the newly planted area.
	Regular review on green belt development programme.
	Year wise greenbelt development plan mentioned in Chapter 4.



10.3 ADMINISTRATION AND TECHNICAL SETUP

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level. The organizational chart for the same has been given below.

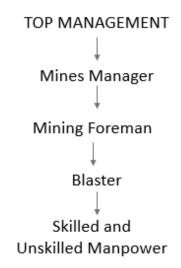


Figure 10.1 Organization Chart

The action plan for monitoring consists of monitoring of following environmental components.

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.



- Co-ordination of the environment related activities within the project as well as with outside agencies
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board,
 Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.4 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided. The health status of workers in the mine shall be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detail medical examination at the time of employment.

10.5 BUDGETARY PROVISION FOR ENVIRONMENTAL MANAGEMENT

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



Table 10.2 Environmental Management Plan Budget

EMP Cost									
SI. No.	/Annum								
Air Enviro	onment								
1	Haul Road Maintenance	0.26	0.26						
2	Water Sprinkler Arrangement	8.00	0.75						
3	AAQ Monitoring	0.00	0.50						
4	Control Blasting (Muffle blasting)	0.00	0.07						
5	Wet Drilling	0.75	0.08						
6	No overloading of trucks/tippers/tractors	0.00	0.05						
7	Stone carrying trucks will be covered by tarpaulin	0.00	0.14						
8	Enforcing speed limits of 20 km/hr within ML area	0.15	0.00						
9	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05						
10	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	6.29						
11	Installing wheel wash system near gate of quarry	0.50	0.20						
	Sub-Total (A)	9.66	8.39						
Noise Env	vironment								
12	Provision for Portable blaster shed	0.50	0.04						
13	NONEL Blasting will be practiced to control Ground vibration and fly rocks	0.00	7.57						
	Sub-Total (B)	0.5	7.61						
Water En	vironment								
14	Water management (Garland Drain)	0.26	0.05						
15	Installation of Bio toilet (Portable)	2.00	0.20						
16	Sump Maintenance	0.00	0.20						
17	Dewatering Cost	0.00	2.00						
Sub-Total (C) 2.26 2.45									
Impleme	mplementation of EC, Mining Plan & DGMS Condition								



18	Waste management (Spent Oil, Grease etc.,)	0.35	0.23
19	Environmental Parameters Display Board	0.20	0.02
20	Issue of PPE's	0.92	0.23
21	IME & PME Checkup	0.00	0.23
22	First Aid facility Provision	0.00	0.10
23	Signage & boards for safety precautions	0.10	0.02
24	Barbed Wire Fencing to quarry area	5.24	0.10
25	Parking yard Management	1.31	0.10
26	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
27	Implementation as per Mining Plan and ensure safe quarry working	0.00	10.80
	Sub-Total (D)	8.42	11.88
Green Be	elt Development		
28	Plantation inside ML area (350 Nos)	0.70	0.11
29	Plantation outside ML area (1000 Nos)	3.00	0.30
	Sub-Total (E)	3.70	0.41
Addition	al Key EMP Expenses		
30	Establishing Rainwater Structure	0.10	5.00
31	Environmental Awareness Programme	0.30	0.00
	Sub-Total (F)	0.40	5.0
	Grand Total in Lakhs (A+B+C+D+E+F)	24.94	35.74
EMP Cos	t for 5 years		
32	1 st Year	0.0	35.74
33	2 nd Year	0.0	36.81
34	3 rd Year	0.0	37.92
35	4 th year	0.0	39.05
36	5 th year	0.0	40.23
	Sub Total (G)	0.0	189.75
	Total FMP Cost for 5 years	is 214 69 lakhs	

Total EMP Cost for 5 years is 214.69 lakhs i.e., Rs.24.94 Lakhs of Capital + Recurring cost Rs. 189.75 lakhs for Five years



10.6 CONCLUSION

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



11. SUMMARY AND CONCLUSION

11.1 INTRODUCTION

This EIA Report is prepared for Thiru. R.Arumugam Rough Stone and Gravel Quarry over an extent of 2.62.0 Ha. patta lands in S.F.No. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State in compliance with ToR obtained vide Lr.No. SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023.

Although the individual lease area of this project is less than 5 hectares, the two existing Quarries (2 Nos) within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 6.93.5 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

This cluster includes the nearby two existing Quarries namely Tvl.RR. Infra Construction (2.65.0 Ha) and Thiru. J. Magarunisa (1.66.5 Ha).

This project proposed to produce 42,06,540 m3 of Rough Stone and 38,752 m3 of Gravel for 5 years with ultimate depth up to 17 m below ground level (first five years).

11.2 PROJECT DESCRIPTION

Table 11.1 Salient Features of the Project

Description	Salient Feature		
Name of the Project	Thiru.R.Arumugam Rough Stone and Gravel		
	Quarry		
Location of the Project	S.F.No: 102/1A, 102/1B, 102/1C, 102/1D,		
	102/1E, 102/1F, 102/1G, 102/1H AND 102/1I of		
	Lekkanayakkanpatti Village, Marungapuri Taluk,		
	Tiruchirappalli District, Tamil Nadu		
Latitude & Longitude	Latitude: 10°20'06.49"N to 10°20'15.63"N		
	Longitude: 78°20'44.53"E to 78°20'50.95"E		



Toposheet No.	58 J/07
ML Area	2.62.0 Ha
Type of Land	Patta Land
Geological Resource	Rough Stone -7,86,000 m ³
	Gravel - 52,400 m ³
	Depth – 32 m BGL
Mineable Reserves	Rough Stone -2,56,905m ³
	Gravel - 38,752m ³
	Depth – 32 m BGL
Proposed Production (First Five Years)	Rough Stone - 2,06,540m ³
	Gravel - 38,752 m3
	Depth – 17 m
Life of the mine	5 years
Proposed depth of mining	17 m bgl
Method of Mining	Opencast mechanized mining involving drilling
	and blasting
Proposed bench height and width	Bench Height & Width – 5m.
Total Waste	NIL
Top Soil / Overburden	There is no overburden / waste from this proposed
	project, entire mined out mineral will be
	transported to the needy buyers.
Water Requirement & source	Total – 6.0 KLD. The required water will be
	procured from outside agencies initially. Later,
	water collected in the mine pit will be used to
	meet the needs.
Proposed Manpower Deployment	23 Nos
Total Project Cost	Rs. 75,92,000/-
Nearest Highway	The National Highway (NH-785) Natham–
	Thuvarankurichi - 1.8km(N) and The State
	Highway (SH-71A) Manapparai – Thuvarankurichi
	is - 6.4Km (NE).
Nearest Railway Station	Vaiyampatti – 23.13 km (N)
Nearest Airport	Tiruchirappalli – 62.0 Km (NE)



Nearest Major Water bodies	Core Zone – NIL
	Buffer Zone
	Kuttai – adjacent to the lease area in eastern side.
	Seasonal Odai – 300 m (NE)
	Tank – 800 m – E
	Palar River – 1.40 km – SW
Environmental sensitive areas,	NIL within 10 km radius
Protected areas as per Wildlife	
Protection Act, 1972 (Tiger reserve,	
Elephant reserve, Biospheres,	
National parks, Wildlife sanctuaries,	
community reserves and conservation	
reserves)	
Reserved / Protected Forests	Reserve Forest - 280m (W)
	Chinnayampatti R.F - 2.97km (W)
	Vellimalai R.F - 3.62km (S)
	Madukamalai R.F - 4.06km (SW)
	Karumalai R.F - 5.3km (S)
	Nedunkuttu R.F - 6.80km (SW)
	Reserve Forest - 2.09km (NW)
	Velamalai R.F - 5.0km (NW)
	Mamalai R.F - 6.6km (NE)
Nearest Village	Sigampatti – 1.0 km (NW)
Seismic Zone	Zone II (Least active)

11.3 DESCRIPTION OF THE ENVIRONMENT

The baseline monitoring study was carried out during October to December 2023 to assess the existing environmental scenario in the area. For the purpose of EIA studies, project area was considered as the core zone and area outside the project area up to 10km radius from the periphery of the project site was considered as buffer zone. Baseline Environmental data has been collected for: -



- a) Land
- b) Water
- c) Air
- d) Noise
- e) Biological
- f) Socio-economic status

11.3.1 LAND ENVIRONMENT

The existing land use pattern of the study area is tabulated below in table 10.2.

Table - 11.2 Land use Pattern of the study area

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1	Built-up land	2.92	0.91
2	Canal	0.52	0.16
3	Crop land	70.12	21.81
4	Existing mining area	0.10	0.03
5	Fallow land	82.56	25.69
6	Land with scrub	26.75	8.32
7	Land without scrub	0.63	0.20
8	Plantations	60.18	18.72
9	Reserved Forest	66.91	20.82
10	Water bodies	10.73	3.34
	Total Area	321.42	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

11.3.2 SOIL CHARACTERISTICS

Results of the soil samples show that the pH values were found to be 5.33 to 7.54 and Electrical Conductivity values were ranging between 42.35 – 83.16 µmhos/cm. Soils are generally Silty Clay Loam. Organic matter values were ranging between 0.54 – 0.72 %. Total Nitrogen values were ranging between 156 – 305 mg/kg. Phosphorus values were ranging between 0.76 – 1.22 µg/g. Potassium values were ranging between 232 – 649 mg/kg. Sodium values were ranging between 604 – 1010 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in Table no – 3.14.



11.3.3 AMBIENT AIR QUALITY

The results of ambient air quality monitoring for the period (October to December 2023) are presented in Chapter 3. The ambient air quality data for PM10, PM2.5, SO2, NO2, CO studied at 6 locations as per prescribed guidelines/ methods. As per the monitoring data, in core zone, the PM10 values were in the range of $56.1 - 73.9 \, \mu g/m3$. PM2.5 values in the range of $25.9 - 34.1 \, \mu g/m3$. SO2 levels were ranging from $4.8 - 6.6 \, \mu g/m3$ and NO2 levels were ranging from $7.9 - 13.2 \, \mu g/m3$. In buffer zone, the PM10 values were in the range of $43.9 - 58.4 \, \mu g/m3$. PM2.5 values were in the range of $21.0 - 28.2 \, \mu g/m3$. SO2 levels were ranging from $3.5 - 7.2 \, \mu g/m3$. NO2 levels were ranging from $5.8 - 12.2 \, \mu g/m3$. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM10, PM2.5, SO2, NO2 & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL $- 1144 \, \mu g/m3$).

11.3.4 WATER ENVIRONMENT

Surface Water

The pH varied from 7.46 to 7.52 while turbidity found to be 6.3 to 10.0, which is exceeding the permissible limit of 5.0. Total Dissolved Solids varied from 734 to 752 mg/l. Chloride varied between 360 mg/l and 370 mg/l. Nitrates varied from 2.42 to 2.65 mg/l, while sulphates varied from 60 to 65 mg/l.

Ground Water

Suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water as required human use, plant use. Though many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth.



As Per the data it has been observed that the pH value varies from 7.15 – 7.87, Chlorides Ranges From 251 - 463 mg/l, Sulphates value found to be between 67.9 - 295 mg/l, Fluoride value varies from 0.26 – 0.49 mg/l, Total Hardness varies from 356.7 – 458.6 mg/l, and Total dissolved solid 820 – 1270 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

11.3.5 NOISE ENVIRONMENT

From the monitoring data, it is observed that the day Equivalent Noise (Leq-d) level were ranging from 43.9 to 50.5 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 39.5 to 42.5 (A). Day and Night Equivalent Noise (Leq-n) level were ranging from 43.0 to 48.9 dB(A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels are within the limit values.

11.3.6 BIOLOGICAL ENVIRONMENT

There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area. Hence this small operation over short period of time will not have any significant impact on the surrounding flora and fauna.

11.3.7 SOCIO-ECONOMIC ENVIRONMENT

An attempt has been made to assess the impact of the proposed mining project at Serugudi Village on Socioeconomic aspect of the study area. The various attributes that have been taken into account are population composition, employment



generation, occupational shift, household income and consumption pattern. Implementation of the Proposed Mine Project will generate both direct and indirect employment. Besides, Mining operation will be legally valid and it will bring income to the state exchequer.

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

- Land environment
- Water environment
- Vegetation
- Fauna
- Air environment
- Noise environment
- Socio-economic impacts

11.4.1 LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 17 m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, 1.90.0 Ha of lease area will be left as rain water harvesting pond. 0.70.0 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca are selected. A total of 400 trees are planned to be planted. Spacing will be 3m x 3m.



11.4.2 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 6.0KLD which will be sourced from outside agencies. Negligible sewage of 0.7 KLD will be generated, for which a septic tank with soak pit will be set up.

During monsoon season, the excess rain water, if any, will be led through garland drain of 0.6m width and 0.3 m depth to the collection pond with silt traps.

Since the mining operation will be limited upto depth of 17 m BGL, there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes. The water bodies found in the buffer zone are.

Within 1 km Radius				
Kuttai 1 Adjacent to the eastern side of the lease area				
Odai	300 m (NE)			
Tank	800 m (E)			
1 km to 10 km Radius (Major Water Bodies)				
Palar River 1.40 km - SW				

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made in to these water bodies, there is no major impact. The proponent will restrict the mining operation only within the lease and no other work will be carried out.

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

- > Rain water falling in the quarry will be collected efficiently through garland drains.
- > Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt



purposes.

> Excess water after desiltation will be provided to downstream users, if any

11.4.3 BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Fauna is affected due to noise and vibration.
- Dust generation due to mining activities
- Change in land use of the lease area
- Accidental falling of animals

Mitigation measures

- Sirens will be blown before blasting in the mines. To reduce noise levels, plantation will be done. Blasting will be carried out only in the allotted time.
- To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants
- After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
- To prevent entry of animals, the mining area will be properly fenced.

11.4.4 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM_{10} , $PM_{2.5}$. Other than these pollutants, gaseous emissions of sulfur dioxide (SO_2) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist



sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

The anticipated data is calculated using AERMOD software and the projected values are found to be within limits.

11.4.5 NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- ♣ Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- As per DGMS (Directorate General of Mines Safety) and OSHA (Occupational Safety and Health Administration) limits, the acceptable noise level is 90 dB(A) for an exposure period of 8 hours.
- Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- ♣ Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus, which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing

Mitigation measures

- As the distance between the source and receptor increases, the noise level also decreases. Hence, there will be a natural attenuation
- The proposed has planned to develop green belt in the periphery of the lease area, which diminishes sound volume by dampening them.
- # All the equipment/machinery/trucks involved will be properly maintained to control noise generation
- Conducting regular health checkups for employees involved
- Employees will be made to work on shifts to reduce their exposure time
- Providing earplugs to all employees



By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

11.4.6 VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

- Though vibration will be only felt by the people working inside the lease area, it is usually undesired.
- Vibration may also cause flyrocks
- It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period

Mitigation measures

- Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- Supervising blasting by competent and statutory foreman/ mines manager

11.4.7 SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

No land is acquired from anyone. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 5,00,000 for CER activities. This amount will be subjected to change after public hearing.

11.4.8 OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rhematic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to



improper mining methods

Mitigation measures

- Using dust suppression measures like water spraying on roads to reduce rise of air pollutants
- Providing green belt for air pollutant and noise attenuation
- Ensuring slope stability
- Employing only trained professionals for blasting
- Conducting Pre-Medical Examination for employees before inducting
- Conducting periodical Medical Examination once in 6 months.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in Chapter 4 of this report.

The project proponent will adopt all the necessary mitigation measures and management plan mentioned in this report and also comply the conditions stipulated in Environmental clearance and CTO of this project.

11.5 ENVIRONMENTAL MONITORING PROGRAM

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. Post project monitoring program is detailed in Chapter 6.



Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation. A schedule is framed with timeline to monitor various parameters during the operation of the project. To evaluate the effectiveness of environmental management programme, regular monitoring of the important environmental parameters will be taken up. Air monitoring will be carried out once in 3 months, water sample will be collected once in a season, noise will be monitored once in 3 months, soil samples will be analyzed once per season.

PP will supervise the overall environmental management plan of the project during operation. Total EMP Cost for 5 years is 214.69 lakhs i.e., Rs.24.94 Lakhs of Capital + Recurring cost Rs. 189.75 lakhs for Five years.

11.6 ADDITIONAL STUDIES

The following Additional Studies were done as per items identified by project proponent and the regulatory authority.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Mine Closure Plan
- Hydrogeological Study

Terms of Reference with Public Hearing (ToR) for the project was issued vide Lr.No. SEIAA-TN/F.No.10439/SEAC/1(a)ToR-1631/2023 Dated: 12.12.2023. Now, this Draft EIA / EMP Report is prepared for conducting Public Hearing as the projects falls under B1 Category.

No high-risk accidents are anticipated as it is small scale mechanized Quarry with essential light machinery. The area is not prone for landslides, seismic activities, subsidence, floods, inundation etc. As there are no rivers and habitation in the vicinity



of probable disaster from the mine lease area. Elaborate description in respect of Risk Assessment and disaster Management plan are detailed in Chapter – 7.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius along with this subject project works out to >5 Ha. A Cumulative impact study is conducted to determine the impact of the existing and proposed quarries located within 500m radius on the environment and are detailed in Section 7.4.

The baseline monitoring carried out for this project reflects the cumulative impact of this existing quarry. Air Quality Model simulations are carried out for PM10 and PM2.5. It can be seen that the resultant added concentrations with baseline figures even at worst scenario and cumulative impact of both the projects show that the values of ambient air quality with respect to PM10 are in the range of 57.16 μ g/m3 to 78 μ g/m3 and for PM2.5 are in the range of 26.3 μ g/m3 to 35.48 μ g/m3 which are within the statutory stipulations in respective case.

In the mine closure stage, all necessary measures will be taken as per Act & Rules, there is no proposal for back filling, reclamation and rehabilitation in any of the proposals. The quarried pits after the end of life of mine will be properly fenced all around to prevent inherent entry of public and cattle and all the statutory requirements will be fulfilled. As already explained, in the post mining stage the rainwater harvested in the mined- out void shall be utilized for irrigation and domestic needs locally. The mine closure plan is provided in Figure 2.9.

11.7 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc
- The project will also contribute via CSR.



Social benefits

- ➤ This project provides employment to 23 people directly. Local people will be hired for unskilled labour.
- > Through CSR, nearby schools, hospitals will be benefitted.
- > For CSR, INR 5,00,000 is allocated.

11.8 CONCLUSION

EIA study was performed as per the approved ToR. Various environmental attributes were studied relating with aspects of mining activities. The related impacts were identified and evaluated. Considering all the possible ways to mitigate the environmental concerns, Environmental Management Plan was prepared and accordingly fund was allocated. The EMP has been dynamic, flexible and subject to periodic review.

The project will increase the revenue of the State Govt. as well as it will help in the social upliftment of the local community. The green belt development programme will help in increasing the green cover in the area. Thus, the proposed project is not likely to affect the environment or adjacent ecosystem adversely.

The Mine Management will be responsible for the project review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.



12DISCLOSURE OF CONSULTANTS

Global Mining Solutions is a NABET Accredited EIA consultant as per NABET certificate NABET/EIA/2326/IA 0110. The registered office of Global Mining Solutions is at Plot No.6, S.F.No.13/2 A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamilnadu-636455.

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over an extent of 2.62.0 Ha, while total cluster area of 6.93.50 Ha at Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

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

EIA Coordinator Name: Manikandan Manickam

Signature & Date

Period of involvement: October 2023 to December 2023.

Contact information:

M/s Global Mining Solutions

Plot No.6, SF No. 13/2, A2, VS City, RC Chettypatty,

Kottamettupatty, Omalur,

Salem, Tamil Nadu - 636 455



6 11	Functional	Name of the	Involvement	Signature and
S. No.	areas	expert/s	(period and task**)	Date
1	AP	Dhanalakshmi Ramanathan	Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution.	R. Dhans_
			Period: October 2023 to December 2023.	
2	WP	Abirami Kaliaperumal	Assessment of existing water quality, impact of the project on surface and ground water quality, suggested mitigation measures for minimizing the impact. Period: October 2023 to December 2023.	L. Anny
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. Period: October 2023 to December 2023.	C. Ray



4	SE	Sarasvathy K	Baseline SE study. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. Period: October 2023 to	or gety
			December 2023. Baseline data collection of	
5	EB	Saravanan S	related to ecology of the area. Period: October 2023 to December 2023.	(Astarana)
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. Period: October 2023 to December 2023.	No all the wall and
7	AQ	Srilatha Thiruveedhula	Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures. Period: October 2023 to December 2023.	T Similalte



8	NV	Dhanalakshmi Ramanathan	Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project. Period: October 2023 to December 2023.	R. Dhams_
9	LU	Srilatha Thiruveedhula	Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment. Period: October 2023 to December 2023.	T Similalte
10	RH	S.V. Prashant	Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker. Period: October 2023 to December 2023.	Porashant.
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. Period: October 2023 to December 2023.	Prohips Single.



12	GEO	Valliappan Meyyappan	Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area.	manus.
			Period: October 2023 to December 2023.	

TM-FAE:

C N	IIVI-FAE:	F	A	Dania da C	T	C!
S.N o	Name of TM(FAE)	Function alArea	Approved FAE (to work under)	Period of involveme nt	Type of work	Signature
1	M. Prabu	LU	T.Srilatha	October to December 2023	Associated with FAE in preparing Land use map based on satellite imagery, Land use classificatio n and analysis, Impact prediction on surrounding land environme nt	H. Dours
		HG	Ashok Kumar		Associated with FAE in studying hydro- geology pattern of study area, studing water and	



					the impact of the project on ground water.	
2	Manikanda n Manickam	EB	S.Saravana n	October to December 2023	Associated with the expert in baseline data collection related to ecology of the study area.	and the second
		SC	Shishupal Singh		Associated with the expert in soil monitoring, secondary data collection on soil type, soil manageme nt practices, utilization of top soil.	

TM-FAA

S. No	Name of TM(FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	Suresh	WP	Abirami Kaliyaperumal	October to December 2023	Associated with the expert in assessing existing water quality, studying impact of the project on surface and	M. Suresto



					ground water	
					quality,	
					suggesting	
					mitigation	
					measures for	
					minimizing	
					impact.	
		AP	Dhanalakshmi		Associated	
					with expert in	
					assessing	
					existing air	
					quality,	
					impact of the	
					project on	
					ambient air	
					and	
					suggesting	
					mitigation	
					measures for	
					air pollution.	
2	S.Kamaraj	SC	Shishupal	October to	Associated	
			Singh	December	with the	1
				2023	expert in soil	8. Kanny
					monitoring,	6. from
					secondary	31
					data collection	
					on soil type,	
					soil	
					management	
					practices,	
					utilization of	
					top soil.	
		RH	S.V.Prashant		Associated	
					with the	
					expert in	
					identification	
					of the risk	
					related to the	
					mining	
					activities.	
					Preparation of	
					emergency	
					disaster	
1		ı	İ	İ	i disaster	



	management
	plan, plan for
	supply of
	safety
	equipment for
	the workers.



ANNEXURE - 1 Precise Area Communication Letter

ந.க.எண்.302/2023/கணிமம்

S. THE SE உதவி இயக்குநர் அறியலகழ் அ புவியியல் மற்றும் சீரங்குஇண்ற. மாவட்ட ஆட்சிலாக வீனாகம், திருச்சிராப்பள்ளிட் 636 001.

гълот: 11. 08.2029

குறிப்பாணை

വവിയക கனிமங்களும் சுரங்கங்களும் சிறுவகைக் பொருள் திருச்சிராப்பள்ளி மானட்டம் ருமாகம்காவ னட்டம் லெக்கநாபக்கண்பட்டி கிறாமம் – புவ எண்கள். 102/1A. 18.1C.1D.1E.1F. 1G.1H மற்றும் 1I – மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் – பட்டா நிலத்தில் கல் மற்றும் கிராவல் குவாரி செய்ய அனுமதி கோரி திரு.ஆறுமுகம் த/பெராமையா என்பவர் விண்ணப்பித்தது ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் அனுப்பக் கோருதல் – தொடர்பாக.

பார்க்கவு:

- திரு ரா.ஆறுமுகம் த/பெராணமா என்பவரின் விண்ணப்பும் நாள்.02.03.2023
- 2. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்:13.03.2023 கோட்டாட்சியர், புநீரங்கம் (வருவாப் அவர்களுக்கு முகவரியிடப்பட்டது).
- வருவாய் கோட்டாட்சியர். ஸ்ரீரங்கம் அவர்களின் கடித ந.க.எண். அ6/1008/2023 நாள்: 08.06.2023.
- உதவி இயக்குநர். புவியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி புவத்தணிக்கை அறிக்கை preh:16.06.2023.
- அரசாணை எண்: 79, தொழில் (எம்.எம்.சி1)துறை, நாள்: 6.4.2015
- அழசாணணஎன்.169, தொழில் (எம்.எம்.சி1) துறை, ълdr:04.08.2020.
- இயக்குநர். புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண். 7240/MM6/ 2019 நாள்: 30.07.2021
- **ളൂ**യുതിതിനെ ജ இதே எண்ணிட்ட கடி தம்நாள்: 20.06.2023
- Department of Technical Education, Tamilnadu Government College of Engineering, Dharmapuri -Lr.No.GCE/DPI/CIVIL/SOIL/2023/C-108, Dated.27.06.2023.
- 10 வட்டார வளர்ச்சி அலுவலர் (வ.ஊ.), ஊராட்சி ஒன்றியம் மருங்காபுரி அவர்களின் **в.** в. №2/2834/2023, **5** № 1.08.08.2023

பார்வை 1–ல் காணும் விண்ணப்பத்தில். 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகணிமச் சலுகை விதி எண்.19(1)ன் படி திருச்சிராப்பள்ளி மாவட்டம். மருத்தபுரி வட்டம் லெக்கநாயக்கன்பட்டி கிராமம், புல எண்கள். 102/1A, 1B,1C,1D,1E,1F, 1G,1H மற்றும் இராமல் குவாரி பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் 10 ஆண்டுகளுக்கு கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள அனுமதி கோரி திரு. ஆறுமுகம் த/பெராமையா எண்பவர் மனு செய்துள்ளார்.

மேற்படி இவ்விண்ணப்பம் தொடர்பாக, ஸ்ரீரங்கம், வருவாப் கோட்டாட்சியர் மற்றும் திருச்சிராப்பள்ளி புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோரால் புலத்தணிக்கை மேற்கொண்டு திருச்சிராப்பள்ளி மாவட்டம், மருங்காபுரி வட்டம், லெக்கநாயக்கண்பட்டி கிராமம், புல எண்கள், புல எண்கள், 102/1A, 18,1C,1D,1E,1F, 1G,1H மற்றும் 11 – மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் கல் மற்றும் கிராவல் குவாரி செய்வதற்கு 10 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு பரிந்துரை செய்துள்ளார்கள்.

நிபந்தனைகள்;

- அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூரும் இன்றி கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
- அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும், பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- உயர்வழுத்தம் மற்றும் தாழ்வழுத்த மின்கம்பிகளுக்கு தமிழ்நாடு சிறுகனிமச் சலுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- குவாரிப்பணி ஆரம்பிக்கும் முன்னர் குத்தகைதாரர் தனது சொந்த செலவில் தாழ்வழுத்த மின்கம்பங்களை மாற்றி அமைக்க வேண்டும்.
- குவாரிப் பணிகளின் போது பாறை அகல Non Electric Method வெடிக்கனை மட்டுமே பயன்படுத்த வேண்டும்.
- 6. வரைவு சுரங்கத் திட்டம் சமர்ப்பிக்கும்போது இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021–ல் தெரிவித்த படி, அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தினை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS, Survey செய்து அதன் அறிக்கையினை

சமர்ப்பிக்க வேண்டும். DGPS சர்வே அடிப்படையிலேயெ சுரங்கத்தி இத் வேண்டும்.

குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தல் கூடாது.

8. குவாரித் தொழிலாளர்களை தமிழ்நாடு தொழிலாளர் நல வாரிய**த்தில் பதிவு செ**ம்வதுடன் குழு காப்பீடு செம்வதையும் உறுதி செம்திடல் வேண்டும்.

மனுதாரர் திரு.ஆறுமுகம் த/பெ.ராமையா என்பவர் கல் மற்றும் கிராவல் குள்றி அமைக்க அனுமதி கோரிய புல எண்கள் பின்வரும் விவரப்படி UDR "அ" பதிவேட்டில் தாக்கலாகியுள்ளது.

ा. वाळांब	ध्वा वाळ्वा	യത്തകப്பாடு	பரப்பு ஹெக். ஏர்ஸ்	ui_in	பட்டாதளர் பெயர்
1.	102/1A	art	0.48.5	81	செ.சக்திவேல்
2.	102/18	0.4	0.27.5	263	சி.பழனிச்சாமி கவுண்டர்
3.	102/1C	0.rt	0.33.0	378	சி.மணிக்காளை (எ) சின்னுக் கவுண்டர்
4	102/10	0.44	0.23.0	104	வெசின்னு
5,	102/1E	6.1	0.38.0	262	ந.பழனிச்சாமி
6.	102/1F	вч	0.23.0	206	இளவர் ப.தங்கையா காப்பாளர் தாயர் நல்லம்மாள்
7.	102/1G	gц	0.23.0	516	வ.ந.பழனிச்சாமி(1) இனவர் வ.ந.துரைராஜ்(2) காப்பாளர் தாபார் நயினி அம்மாள்
8.	102/1H	ari	0.20.0	457	க.ந.வெள்ளையம்மாள
9.	102/11	пų	0.26.0	263	சி.பழனிச்சாமி கவுண்டர்

மேற்கண்டவாறு கிராம 10(1) சிட்டாவில் தாக்கலாகி பின்பு T.K.964/1410. நாள்.22.11.2000ன் படி மேற்கண்ட புல எண்கள். 102/1A, 1B,1C,1D,1E,1F, 1G,1H மற்றும் 1l பட்டா எண்.415–ல் இராமச்சந்திரன் மணைவி மேகலா என்பவர் பெயரில் தாக்கலாகி பின்பு TR.No.2021/0103/15/253923, நாள்.10.11.2021ன் படி பட்டா எண்.1216 இராமச்சந்திரன் மகள் மோனிகா என்பவர் பெயரில் தாக்கலாகி பின்பு TR.No.2022/0103/15/276002 நாள்.19.03.2022–ன் படி பட்டா எண்.1235–ல் மனுதாராகிய ராமையா மகன் ஆறுமுகம் பெயரில் தற்சமயம் தாக்கலாகியுள்ளது.

மருங்காபுரி வட்டம். வெக்கநாயக்கன்பட்டி கிராமம், புல எண்கள். 102/1A, 1B.1C.1D.1E.1E, 1G.1H, 1I பூஸ்தியில் தரிசாக காணப்படுகிறது. மேற்படி நிலமானது பூமிதான நிலமோ, நில உச்சவரம்பிற்குட்பட்ட நிலமோ, பஞ்சமி நிலமோ இல்லை. மேலும் மேற்படி நிலமானது நீர்பிடிப்பு நிலம் இல்லை. மேற்படி நிலந்தினைச் சுற்றி 500 மீட்டர் சுற்றஎவில் கல்வி நிறுவனங்கனோ,

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குடியிருப்புகளோ, பராதானச் சின்னங்களோ ஏதுமில்லை. மேலும் தாழ்வழுத்த மின்கும்பியானது மேற்படி புலத்தின் குறுக்கே வடக்கு தெற்காக செல்கிறது. மேற்படி புல எண்.102/1A மற்றும் 10218-க்கு கிழக்கே புல எண்.102/2 பரப்பு ஹெக்.0.26.0 ஏர்ஸ் நிலம் குட்டை என தாக்கலாகியுள்ளது. மேலும் வட்டாட்சியர் மருங்காயுரி அவர்களது அறிக்கையில் கூணழி எணி செய்ய விண்ணப்பித்துள்ள புலத்திற்கு அருகில் புல எண்.102/2 மொத்த பரப்பு 0.26.00 ஹெக்டேர் ஆனது கிராம கணக்கில் குட்டை என்று பதிவாகியுள்ளது. தற்சமயம் இந்த குட்டைக்கு நீர்வரத்து வாரிகளோ, வாய்க்கால்களோ, பாசன வசதிகளோ மற்றும் ஆயக்கட்டுகளோ ஏதும் இல்லை என்றும் தெரிவித்துள்ளார். எனவே, அருகில் உள்ள குட்டைக்கு 10மீ பாதுகாப்பு இடைவெளி விட்டு குவாரிப் பணி செய்ய அனுமதி வழங்கலாம்.

Busing milliand.

மேலும் மனுதாரர் கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரும் புல எண்ணிற்கு கிழக்கே சுமார் 500மீ தொலைவில் மெஹருன்னிசா பேகம் என்பவரது கல் குவாரி செயல்பட்டு வருகிறது. கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரும் புல எண்களுக்கு அக்கியம்பட்டி கிராமம். புல எண்.157/2B பட்டா நிலம், லெக்கநாயக்கன்பட்டி கிராமம். புல எண்.101/1 பட்டா நிலம் மற்றும் லெக்கநாயக்கன்பட்டி கிராமம், புல எண்.101/2 அரசு புறம்போக்கு கல்லங்குத்து ஆகியவற்றின் வழியாக பாதை செல்கிறது.

மேற்படி புலங்களில் கல் மற்றும் கிராவல் குவாரி அமைப்பது தொடர்பாக கடந்த 20.04.2023 அன்று A-1 நோட்டிஸ் பிரசுரம் செப்பப்பட்டுள்ளது. மேலும், கல் மற்றும் கிராவல் குவாரி அமைக்க கோரும் நிலங்களில் நிலவரி பாக்கி ஏதுமில்லை.

கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரிய புல எண்களுக்காண நான்கெல்லை வியரம் பின்பவருமாறு

μου σταθετ.102/1A

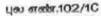
வடக்கு	அக்கியம்பட்டி கிராம எல்லை	
தெற்கு	புல எண்.102/18 – மனுதாரர் நிலம்	
கிழக்கு	புல எண். 102/2 - குட்டை	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	

புல எண்.102/18

1

வடக்கு	புல எண்.102/1A – மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1C –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.102/2 – குட்டை	
மேற்கு	புல எண்.101/2- கல்லாங்குத்து	

Ristrumupany



வடக்கு	புல எண்.102/18 – மனுதாரர் நிலம்
தெற்கு	புல எண்:102/1D –மனுதாரர் நிலம்
கிழக்கு	புல எண்.102/1E – மனுதாரர் நிலம்
ග ණුල	புல எண்.101/2 – கல்லாங்குத்து



μου σταάτ.102/1D

வடக்கு	புல எண்.102/10 – மணுதாரர் நிலம்	
தெற்கு	புல எண்.102/1F –மனுதார் நிலம்	
கிழக்கு	புல எண்.102/1E – மனுதாரர் நிலம்	
ග ෙළුණු	புல எண்.101/2~ கல்லாங்குத்து	

цои отафт.102/1Е:--

வடக்கு	புல எண்.102/2-குட்டை	
தெற்கு	புல எண்.102/1F –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.102/1C – மனுதாரர் நிலம்	
மேற்கு	புல எண்.102/1D– மனுதாரர் நிலம்	

μου σταάτ.102/1F:-

வடக்கு	புல எண்.102/1D, 1E- மனுதாரர் நிலம்	
தெற்கு	புல எண்:102/1G –மனுதார் நிலம்	
கிழக்கு	புல எண்.100 – கல்லாங்குத்து	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	

புல எண்.102/1G:-

வடக்கு	புல எண்.102/1F- மனுதரர் நிலம்	
தெற்கு	புல எண்.102/1H –மனுதாரர் நிலம்	
திழக்கு	புல எண்.100 – கல்லாங்குத்து	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	
	புல எண்.100 – கல்லாங்குத்து	

μου στούτ.102/1H:-

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ഖடക്ക്ര	புல எண்.102/1G, 1l – மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1I –மணுதாரர் நிலம்	
கிழக்கு	புல எண்.100 – கல்லாங்குத்து	
மேற்கு	புல எண்.100 – கல்லாங்குத்து	

-R. Amonyam



		Subministrat.
da:102/1t-		E Suban Mile
வடக்கு	புல எண்.102/1H–மனுதாரர் நிலம்	1 3 / m
தெற்கு	புல எண். 100 கல்லாங்குத்து	8.
கிழக்கு	புல எண். 100 கல்லாங்குத்து	\$0.900 \$
மேற்கு	புல எண். 100- கல்லாங்குத்து	
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மேலும், பார்வை 10-ல் காணும் கடித்தில் ஊராட்சி ஒன்றியம் அலுவலர்(வ.ஊ.). ஊராட்சி ஒன்றியம் மருங்காயுரி அவர்கள் மேற்கூறிய புல எண்களில் கல் மற்றும் கிராவல் குவாரி பணி செய்ய உதவி பொறியாளர். ஊராட்சி ஒன்றியம், மருங்காபுரி என்பவரின் பரிந்துரையின் பேரில் கீழ்காணும் நிபந்தனைகளுடன் பரிந்துரைத்து அனுமதி வழங்கப்படுகிறது என தெரிவித்துள்ளார்.

திபந்தனைகள் :-

- வருவாப்த்துறையினர் தள ஆய்வு மேற்கொண்டு அளவீடு செய்யப்பட்டு அறிக்கை பெறப்பட்ட பின்னரே குவாரி பணி நடைபெற வேண்டும். குட்டை நீர்ப்பிடிப்புப் பகுதிகளின் எல்லைகளை வருவாட்த்துறையினர் தங்களது அளவையார்களைக் கொண்டு நீர்ணயிக்கப்பட்ட பின்னரே கல் மற்றும் கிராவல் குவாரி பணி செய்ய வேண்டும்.
- 2. வருவாய்த்துறையினர் புல வரையடத்தில் குறிப்பிடப்பட்ட இடத்தில் மட்டும் கல் மற்றும் கிராவல் குவாரி பணி செப்ப வேண்டும்.
- 3. குட்டையிலிருந்து 10 மீட்டர் குறைவில்லாமல் இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரி பணி செய்ய வேண்டும்.
- 4. கல் மற்றும் கிராவல் குவாரி பணி செப்யும் பொழுது குட்டையின் வரத்துகளுக்கு எந்த சூழ்நிலையிலும் பாதிப்பு ஏற்படாத வண்ணம் முன்னெச்சரிக்கை நடவடிக்கைகள் எடுக்க வேண்டும்.
- 5. குறிமீடு செய்யப்பட்ட இடத்திற்கு அப்பாலோ அல்லது வேறு இடத்திலோ கல் மற்றும் கிராவல் மண் அள்ளப்பட்டால் அதற்கு மணுதாரரே முழு பொறுப்பாவார்.
- குட்டையின் தன்மை மற்றும் ஆயக்கட்டுத்தாரர்களின் நலனை கருத்திற்கொண்டு மண் எடுக்க அளிக்கப்பட்டிருக்கும் பரிந்துரை அறிக்கையினை எக்காரணமும் தெரிவிக்காமல் ரத்து செய்ய இத்துறைக்கு முழு அதிகாரம் உண்டு.
- 7. மண் எடுக்க பயன்படுத்தப்படும் வாகணங்கள் குட்டையின் நீர்ப்பிடிப்பு பகுதிகளை பாதிக்காத வண்ணம் செல்ல வேண்டும்.
- வாகணங்களை பயன்படுத்தும் போது நீர்நிலைகளுக்கோ. நீரிவழித்தடங்களுக்கோ எவ்வித சேதமும் ஏற்படக்கூடாது. அவ்வாறு ஏற்பட்டால் அதனை நிவர்த்தி செய்ய நடவடிக்கை மேற்கொள்ளப்பட வேண்டும்.
- 9. கல் மற்றும் கிராவல் குவாரி பணி செய்யும் போது உரிம காலம் முடியும் வணர சட்டம் ஒழுங்கு பிரச்சனை ஏற்பட்டால் இத்துறை எவ்வித பொறுப்பும் ஏற்காது.

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எனவே, வருவாப் கோட்டாட்சியர். ஸ்ரீரங்கம் மற்றும் உதவி இயக்குநர். புனியியல் மற்றும் கரங்கத்துறை. திருச்சிராப்பள்ளி ஆகியோரின் அறிக்கையின் படி திருச்சிராப்பள்ளி மாவட்டம். மருங்காயுரி வட்டம், லெக்கநாயக்கன்பட்டி கிராமம் புல எண்கள். 102/1A. 18 (C.1D.1E.1F. 12.1H மற்றும் 11 – மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் திரு. ஆறுமுகம் த/பெராமையா என்பவருக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி 19(1) –ன் படி கல் மற்றும் கிராவல் குவாரி செய்வதற்கு குத்தகை பத்திரம் நிறைவேற்றப்பட்ட நானிலிருந்து 10 ஆண்டுகளுக்கு கல் குவாரி மற்றும் அதில் முதல் 03(மூன்று) ஆண்டுகளுக்கு கிராவல் குவாரி பணி மேற்கொள்ள கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்குவதற்குரிய தேற்ற (Precise Area Communication) பரப்பாக கருதப்படுகிறது.

மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி எண். 41 மற்றும் 42-ண்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு கரங்க திட்டத்தினை 90 தினங்களுக்குள் கீழ்காணும் நிபந்தனைகளுக்கு உட்பட்டு சமர்ப்பிக்குமாறும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெறவும் மனுதாரர் கேட்டுக்கொள்ளப்படுகிறார்.

நிபந்தணைகள்

- அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூரும் இன்றி கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
- அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும். பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- உயர்வழுத்தம் மற்றும் தாழ்வழுத்த மின்கம்பிகளுக்கு தமிழ்நாடு சிறுகணிமச் சலுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- குவாரிப்பணி ஆரம்பிக்கும் முன்னர் குத்தகைதாரர் தனது சொந்த செலவில் தாழ்வழுத்த மின்கம்பங்களை மாற்றி அமைக்க வேண்டும்.
- குவாரிப் பணிகளின் போது பாறை அகல Non Electric Method வெடிக்களை மட்டுமே பயன்படுத்த வேண்டும்.
- 6. வரைவு கரங்கத் திட்டம் சமர்ப்பிக்கும்போது இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021-ல் தெரிவித்த படி, அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தினை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS, Survey செய்து அதன் அறிக்கையினை

Ridringen

சமர்ப்பிக்க வேண்டும். DGPS சர்வே அடிப்படையிலேயெ சுரங்கத்தி. வேண்டும்.

குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தல் கூடாது.

குவாரித் தொழிலானர்களை தமிழ்நாடு தொழிலாளர் நல வாரியத்தில் இடி நிசய்வது.
 குழு காப்பீடு செய்வதையும் உறுதி செய்திடல் வேண்டும்.

உதவி இயக்குநர். புவியியல் மற்றும் சுரங்கத்துறை, திருச்சிராப்பள்ளி

பெறுதல்,

திரு.ஆறுமுகம் த/பெ.ராமையா 47 வடக்கு தெரு, லெம்பலக்குடி. புதுக்கோட்டை மாவட்டம். Tops

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ANNEXURE - 2

Mining Plan Approval Letter and approved mine plan report with Annexure

From

Thiru.A.Balamurugan.,M.Sc.,M.B.A., Assistant Director, Dept. of Geology and Mining, Collectorate, Tiruchirappalli -620 001. To

Thiru.R.Arumugam, S/o.Ramaiah, No.47, North Street, Lembalakudi, Pudukkottai.

Rc.No.302/2023/Mines

Dated:23.08.2023

Sir,

Sub: Mines and guarries - Minor minerals - Tiruchirappalli District - Marungapuri Taluk - Lekkanayakkanpatti Village - S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I over an extent of 2.62.0 Hects. of Patta land - Rough Stone requested permission Gravel quarry and Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai Instructions for submitting approved mining plan and Environment clearance - Submission of mining plan for approval - Approved - Reg.

Ref:

- Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai District application dated 02.03.2023
- 2. This office even Memo letter No. dated 11.08.2023
- Thiru.R.Arumugam, S/o.Ramaiah Tiruchirappalli letter dated 18.08.2023 (Submission of Mining Plan)

In the reference 1st cited Thiru.R.Arumugam, S/o.Ramaiah has requested for the grant of quarry lease of Rough Stone (10 years) and Gravel (3 years) to quarry over an extent of 2.62.0 Hects. of patta land in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District.

In this connection, in the reference 2nd cited, Thiru.R.Arumugam, S/o.Ramaiah was directed to produce the mining plan for approval and to obtain environmental clearance from State level Environment Impact

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Assessment Authority for an extent of 2.62.0 Hects. of Patta land in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Trichy District for a period of Ten years for Rough stone and First Three years for Gravel.

In the reference 3rd cited, Thiru.R.Arumugam, S/o.Ramaiah has submitted three copies of Mining plan, prepared by Thiru.S.Gopi, M.Sc., Qualified Person, office at No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem - 636 455.

The Mining Plan submitted by Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai has been scrutinized as per the guidelines issued by the Commissioner of Geology and Mining, Chennai in his letter Rc.No.3868 /LC/2012 dated 19-11-2012 and based on the reports and records and accordingly as authorized by the Commissioner of Geology and Mining, Chennai in his letter dated 19.11.2012, I hereby approve the above said mining plan for the quantity of 2,06,540 CBM for Rough stone for the period of Five (5) years and 38,752 CBM for Gravel for the period of First Three (3) years from the date of execution of lease deed.

This approval is subject to the following conditions:-

- (i) 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.
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest

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(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 Mineral Concession Rules, 1959.

- (iii) That the mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- (iv) Quarrying shall be done as per the approved mining plan and that the mining 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.

Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai is directed to produce Environmental Clearance from the State Level Environmental Impact Assessment Authority for the above applied area as per rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

Encl: 2 Copies of Approved Mining Plan.

Assistant Director

Dept. of Geology and Mining,

Tiruchirappalli.

519 am

MINING PLAN FOR LEKKANAYAKKANPA1 ROUGH STONE & GRAVEL C

(Prepared under rule 19(1), 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959)

LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE

TAMIL NADU

DISTRICT

TIRUCHIRAPPALLI

TALUK

MARUNGAPURI

VILLAGE

LEKKANAYAKKANPATTI

S.F.NOS

102/1A, 102/1B, 102/1C,

102/1D, 102/1E, 102/1F,

102/1G, 102/1H AND 102/11

EXTENT

2.62.0Ha

ECO-FRIENDLY



SUSTAINABILITY



SAFETY



This Mining Plan is approved subject

THIRU. R.ARUMUGAMffice Lr.No. 309-19023/ Mines., Dated: 93.02.3 As per the Rule 41 & 42 of TNMMCR 1959.

47, North Street, Lembalakudi,

Pudukottai District.



S.Gopi, M.Sc., Qualified Person ASSISTANT DIRECTOR GEOLOGY & MINING TIRUCHIRAPPALLI.

Under Rule 15 of Amended Mar 2016 No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile: 97502 62927 & 94446 54520.

















(PPE)

R.Arumugam,

S/o.Ramaiyah,

47, North Street, Lembalakudi,

Pudukottai District.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.62.0hectares of Patta lands in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State has been prepared by

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

I request the Assistant Director, Department of Geology and Mining, Tiruchirappalli District to make further correspondence regarding modifications of the Mining Plan with the said Qualified Person on this following address.

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.

I hereby undertake that all modifications so made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and building on me in all respects.

Signature of the Applicant

R. Aumysen

R.Arumugam,

Place: Pudukottai Date: 12.08.2023

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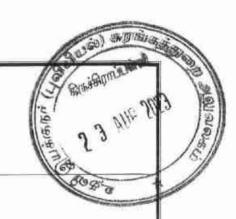
R. Amony form

R.Arumugam,

S/o.Ramaiyah,

47, North Street, Lembalakudi,

Pudukottai District.



DECLARATION

The Mining Plan in respect of Rough Stone and Gravel quarry over an extent of 2.62.0hectares of Patta lands in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

R. Ammugam

R.Arumugam,

Place: Pudukottai Date: 12.08.2023

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R Ammu Jam

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile: 97502 62927 & 94446 54520.



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of Rough Stone and Gravel quarry lease over an extent of 2.62.0hectares of Patta lands in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State applied by Thiru.R.Arumugam, for fresh quarry lease.

Wherever specific permission / exemptions / relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central Governments for granting such permissions etc.

Certified

Signature of Qualified Person.

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

Place: Salem

Date: 14.08.2023

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R Hmmyfam

S.Gopi, M.Sc., Qualified Person

Place : Salem

Date: 14.08.2023

Under Rule 15 of Amended MCR, 2016

No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.



CERTIFICATE

Gravel quarry over an extent of 2.62.0hectares of Patta lands in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State for Thiru.R.Arumugam, covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified

Signature of Qualified Person.

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2018

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Certified that I, S.Gopi residing at No.93/36 E2, Subramaniyar Korif Street, Omalur Taluk, Salem District, Tamil Nadu, Pin Code-636 455. I am a Post graduate in Geology (M.Sc., Geology) from Presidency College and more than five years of experience in mining Field.

Rule 15(1)(a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016 stipulates the eligibility for preparing Mining Plans as "(1)(a) a post graduate degree in Geology granted by a university established" and (1)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (1)(a) and (1)(b) of 15 of the Said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly I prepared this Mining Plan in respect of Rough Stone and Gravel quarry lease applied for an extent of 2.62.0hectares of Patta land in S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District by Thiru. R.Arumugam, for a period of Ten years. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1) (a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016, the same may be approved by the Competent Authority.

S.Gopi, M.Sc., Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc., Qualified Person Under Rule 15 of Amended MCR 2016

Place: Salem

Date: 14.08.2023

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4.0	Geology and Mineral Reserves	8
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10.0	Environment Management Plan	19
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	Annexure	
S. No.	Description	Annexure
1.0	Precise Area Communication letter issued by the Assistant Director, Department of Geology and Mining,	Annexure
2.0	Copy of FMB	J 2 11
3.0	Copy of village map	HI I
4.0	Copy of Patta	IV
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8.0	Copy of QP Certificate	VIII

LIST OF PLATES

S. No.	Description	Plate No.
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7.0	Topography, Geological, Year wise Development and Production Plan & Sections	Ш
8.0	Progressive Quarry Closer Plan & Sections	IV
9.0	Conceptual Plan & Sections	V



MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

ent of 2.62.0hectares of Part. Over an extent of 2.62.0hectares of Patta land in S.F.Nos. 102/18 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1L of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu State.

(PREPARED UNDER RULE 19(1), 41 and 42 OF TNMMCR 1959)

1.0 Introduction and Executive Summary;

- 1. The Mining Plan for Thiru.R.Arumugam, present is prepared S/o.Ramaiyah, 47, North Street, Lembalakudi, Pudukottai District.
- 2. The application was processed by the Assistant Director, Department of Geology and Mining, Tiruchirappalli, and passed an order vide Rc.No. 302/2023/Kanimam dated 11.08.2023 directing the applicant to produce approved Mining Plan under Rule 41(5) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and Environmental Clearance Certificate under Rule 42 from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease to quarry Rough Stone and Gravel over an extent of 2.62.0 hectares of Patta lands in S.F.Nos. 102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/11 of Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District of Tamil Nadu State for a period of Ten years.
- 3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating following the conditions imposed in the precise area communication letter.
 - a) The applicant should not cause any hindrance to adjacent patta lands and public while Rough stone and gravel quarrying operation.

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- b) A safety distance of 10m and 7.5m should be provided to the Government land and Patta land while Rough Stone and Cravel operation.
- c) A neccesary safety distance should be provided to the HT and by line as per Tamil Nadu Minor Mineral Concession Rules.
- d) LT Electric Poles should be shift by Applicant own cost before the quarry operation.
- e) Non Electric Method of Blasting should be used for blasting of rocks in quarry operation.
- f) As per the letter received from the Director Geology and Mining Chennai vide letter R.C.No.2921/M.M.4/2016 dated.09.03.2021, the applicant should conducted DGPS survey (Authorized person) own cost and submitted report along with draft mining plan.
- g) The applicant should not engage child labours while quarry operation.
- 4. Geological Resources is estimated at 7,86,000m³ of Rough stone, 52,400m³ of gravel formation and Mineable Reserves is estimated at 2,56,905m³ of Rough Stone, 38,752m³ of gravel formation and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.
- Production Schedule is proposed production of 2,06,540m³ of Rough Stone, 38,752m³ of gravel formation for the period of first five years.
- The applicant ensured that, child labours under 18 years of age will not be engaged for quarrying operation.
- The applicant ensure that will appoint should have valid certified persons (Mines Manager, Foreman, Mate) during quarrying operation.
- 8. Environmental parameters,
 - The area does not attract the Forest Conservation Act, 1980 as there is no forest around 300m radius.
 - There is no interstate boundary around 10Kms radius.

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iii)

There is no wild life animal sanctuary within 10Kms radius from the site area under the Wildlife (Protection) Act, 1972. Therefore the project seeks clearance only from State Level Exist Assessment Authority (SEIAA).

- 9. Environmental measures to be adopted shall be,
 - i) Dust Control at source while drilling and blasting.
 - ii) Dust suppression at loading point and transport haul roads.
 - iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MOEF.
 - iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
 - V) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
 - vi) Mining near major fracture zones if any should be avoided to control ground water fluctuation in the adjacent agricultural lands.
 - vii) Emission test of vehicles should be in tack to maintain minimum emission level of flue gases.
 - Noise level should not exceed 80db and the vehicles should use only viii) permitted Air Horn while on road near residential areas.
 - ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhere to.
 - X) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.

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EX	ECUTIVE SUMMARY:		Sign Sunium P
a.	Name of the Village Panchayat	2	Lekkanayakkanpatit
b.	Name of the Panchayat Union	:	Marungapuri 6 73
c.	The proposed total Minable Reserves	*	Lekkanayakkanpatir Marungapuri 2,56,905m³ of Rough Stone, 38,752m³ of gravel forh
d.	The proposed quantity of reserves (level of production) for five years to be mined is(Recoverable reserves)	3	2,06,540m³ of Rough Stone, 38,752m³ of gravel formation
C.	Total extent of the area	*	2.62,0Ha
f.	Proposed Period of mining	*	Five years
g.	Existing depth	*	It is fresh quarry lease applied area
h.	Proposed Depth of mining	4	17m (Below ground level) for the proposed mining plan.
i.	Method of mining/level of mechanization		Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m and 80° Slope is proposed.
j.	Types of Machineries used in the quarry	1	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.
k.	Cost of the Project A. Fixed Assets Cost B. Operational Cost C. EMP Cost		Rs. 18,72,000/- Rs. 52,00,000/- Rs. 5,20,000/- Total Project cost(A+B+C) = Rs. 75,92,000/-

The area applied for lease is bounded by Fourteen corners and the coordinates
are clearly marked in plate no II.

Corners	Co- or	Distance between the				
Corners	Latitude	Longitude	corners			
1	10° 20' 06.49"N	78° 20' 48.74"E	1-2	= ,	77.8m	
2	10° 20' 08.72"N	78° 20' 47.53"E	2-3	=	67.2m	
3	10° 20' 10.77"N	78° 20' 46.76"E	3-4	=	24.0m	
4	10° 20' 11.16"N	78° 20' 46.07"E	4-5	= _	132.0m	
5	10° 20' 15.17"N	78° 20′ 44.53″E	5-6	= [54.2m	
6	10° 20′ 15.63″N	78° 20' 46.25"E	6-7	=	34.0m	
7	10° 20' 15.44"N	78° 20' 47.35"E	7-8	=	32.2m	
8	10° 20′ 15.10″N	78° 20' 48.35"E	8-9	= "	59.4m	
9	10° 20' 13.16"N	78° 20' 48.33"E	9~10	=	47.4m	

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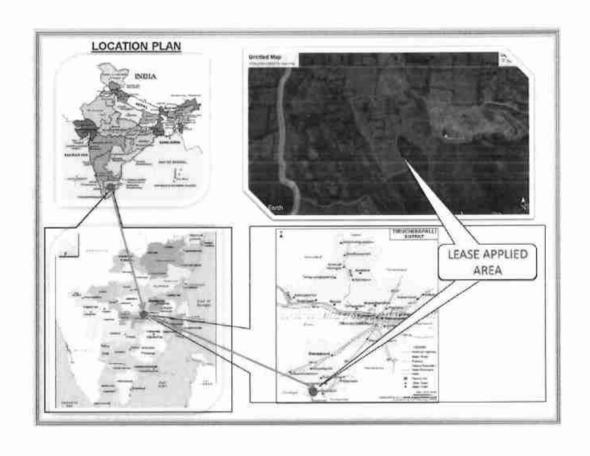
			~ ~ ~ ~
10	10° 20' 13.10"N	78° 20' 49.88"E	10-11 = 62,4m)(t)
1.1	10° 20' 11.07"N	78° 20' 50.05"E	11 12 = 11.8m
12	10° 20′ 10.80″N	78° 20' 49.78"E	12-\3 = \ 35.2m
13	10° 20' 09.65"N	78° 20' 49.74"E	13-1 77.0m
14	10° 20 07.45"N	78° 20' 50,95"E	14-1 00git3.4m

2.0	General	Information:

2.1	a.	Name of the Applicant	:	Thiru.R.Arumugam,
	b.	Address of the Applicant with phone No and e-mail id if any	•	S/o.Ramaiyah, 47, North Street, Lembalakudi, Pudukottai District. Pin Code-622 412 Cell No.:7871484409
	c.	Status of the Applicant	ž	Individual
2.2	a.	Mineral Which the applicant intends to mine		Rough Stone and Gravel.
	b.	Precise area communication letter No.	(m)	Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tiruchirappalli, Rc.No. 302/2023/Kanimam dated 11.08.2023.
	c.	Period of permission / lease granted	E	Assistant Director, Department of Geology and Mining, Tiruchirappalli, has grant of lease period for ten years .
	d.	Name and Address of the QP preparing Mining Plan	(2.46)	S.Gopi, M.Sc., Qualified Person Under Rule 15 of Amended MCR, 2016 No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin code-636 455. Mobile:97502 62927 & 94446 54520.

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3.0 S.No	Location:	Details of the Area:
1	Corner Coordinates	Latitude : 10°20'06.49"N to 10°20'50.95"E Longitude : 78°20'44.53"E to 78°20'50.95"E
2	Toposheet Number	58 J/07
3	The altitude of the area	220m (MSL)
4	Extent	2.62.0Ha
5	Survey Nos	102/1A, 102/1B, 102/1C, 102/1D, 102/1E 102/1F, 102/1G, 102/1H and 102/1I
6	Village	Lekkanayakkanpatti
7	Taluk	Marungapuri
8	District	Tiruchirappalli



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a.	Classification of the Area (Ryotwari / poramboke / others)	1.	Patta land
b.	Ownership / Occupancy of the Applied area (Surface rights)	200	It is patta land registered and the name of applicant vide patta no.1235, Please refer Annexure No: IV.
C.	Toposheet No. with Latitude and Longitude	#(E) #(E) #(E)	Topo Sheet No: 58 J/07 Latitude : 10°20'06.49"N to 10°20'15.63"N Longitude : 78°20'44.53"E to 78°20'50.95"E
d.	Existence of Public Road / Railway line if any nearby the area and approximate distance	*	There is an existing road from the area leads to Kottaiyur Natham – Akkiyampatti village road on Western side of the area. The Nearest Railway line is Tiruchirappalli – Dindigul line which is about 23.6Km on northwestern side of the area.

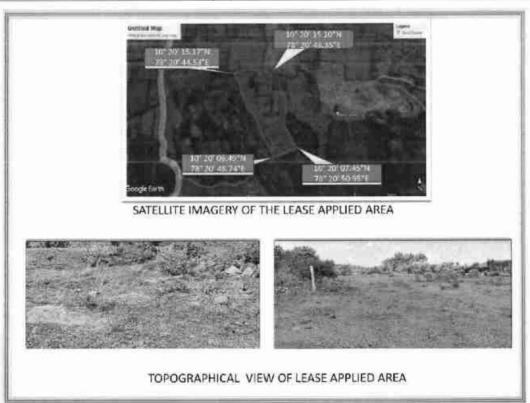


Fig. Location of the lease Applied Area

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4.0	Co	ology and Mineral Rese	PART - A PUB OF STREET
4.1	a.	Topography	1160 0 3
	b.	General Geology of :	The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses a high grade metamorphic rock. The strike of the Charnockite formation is N45°E –S45°W with vertical dipping. The general geological succession of the area is given as under.

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			San alle Sans
			Recent - Gracely soil
			Recent - Graveny soil Unconsormity
			Archaean – Dolerite dyke Charnockite.
			Peninsular Gneissic complex and Calc Gneiss
4.2	Details of Exploration already carried out if any	7.	No exploration was carried out, as the Rough stone formations are clearly visible from outcrops within the lease Applied Area.
4.3 a.	Estimation of Reserves	(4)	The Geological and Recoverable reserves are estimated by cross sectional method. Totally four sections have been drawn, one section drawn length wise as (X-Y) and another Three sections drawn width wise as (A-B), (C-D) and (E-F) to cover maximum area considered for lease. The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively. Please refer plate No.III.

a. Geological Resources

The quarrying is restricted up to a depth of 32m Below ground level only. Availability of Resources is given below.

Table No-1

				Table	110-1	
Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel formation in m ³	Geological Resources of Rough stone in m ³
	118	98	2	23128	23128	
XY-AB	118	98	30	346920		346920
		То	tal		23128	346920
	65	105	2	13650	13650	
XY-CD	65	105	30	204750		204750
		Т	otal	01	13650	204750
	107	73	2	15622	15622	
XY-EF	107	73	30	234330		234330
		To	tal		15622	234330
		Grand '	Total		52400	786000

Gravel Formation

52,400m3

The Geological Resources of Rough stone

7,86,000m3

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b. Mineable Reserve

Table No. 2 bench loss.

				Tabi	e No-2		
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Missable Reserves of Rough stone in m ³
	1	110	78	2	17160	17160	
	П	108	73	5	39420		39420
	Ш	101	60	5	30300		30300
XY-AB	IV	95	47	5	22325		22325
	V	88	34	5	14960		14960
	VI	82	21	5	8610		8610
			Total		-	17160	115615
	I	65	87	2	11310	11310	
	П	65	82	5	26650		26650
	III	65	69	5	22425		22425
	IV	65	56	5	18200		18200
XY-CD	V	64	43	5	13760		13760
	VI	58	30	5	8700		8700
	VII	51	17	5	4335		4335
			Total			11310	94070
	1	97	53	2	10282	10282	
	II	95	48	5	22800		22800
XY-EF	Ш	88	35	5	15400		15400
	IV	82	22	5	9020		9020
			Total			10282	47220
		Grand	Total			38752	256905

The mineable reserve is computed as 2,56,905m3 of Rough stone 38,752m3 of Gravel formation upto a depth of 32m below ground level only.

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5.0	Mining:		Bulling Sully Sull
5.1	Method of Mining	*	 Opencast method of setus mechanized mining with 5.0m height 5m width and 50° slope of the bench. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom [possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.
5.2	Mode of Working	3	The rough stone is proposed to quarry 5m bench height, 5m width with 80° slope and with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers / other buyers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining.
5.3	Proposed bench height & Width	:	Quarrying of Rough Stone is proposed bench height of 5m and bench width of 5m.

R Arnonyfam 5.4 Details of : The overburden in the form of Gravel, after the Overburden / excavation of Gravel and Rough stone will be directly Mineral Production loaded into tipper to the necession excavation works for proposed for the first buyers for road project and construction works for filling and leveling of low lying areas.

The Yearwise Production and Development Table

					apie No	-0		
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Mineable reserve of Rough stone in m ³
t	WW AD	1	110	78	2	17160	17160	
1	XY-AB	II.	108	73	5	39420		39420
			Total				17160	39420
	VV AD	3	65	87	2	11310	11310	
11	XY-CD	II	65	82	5	26650		26650
П	NAME AND ADDRESS OF	I	65	53	2	6890	6890	
	XY-EF	II	65	48	5	15600		15600
			Total				18200	42250
		1	32	53	2	3392	3392	
	MAY ESTS	II	30	48	5	7200		7200
III	XY-EF	III	88	35	5	15400		15400
		IV	82	22	5	9020		9020
	XY-CD	Ш	30	69	5	10350		10350
			Total				3392	41970
erve.	XY-CD	III	35	69	5	12075		12075
IV	XY-AB	Ш	101	60	. 5	30300		30300
			Total	**	11			42375
V	XY-AB	IV	95	47	5	22325		22325
V	XY-CD	IV	65	56	5	18200		18200
			Total					40525
			arand To	tal			38752	206540

The mineable reserve is estimated as 2,56,905m³ of Rough stone 38,752m³ of Gravel formation upto a depth of 32m below ground level only but the applicant has proposed to carry out 2,06,540m³ of Rough stone 38,752m³ of Gravel formation upto a depth of 17m below ground level for the period of first five years.

5.5	a.	Machii Drillin	neries to be use g		It is proposed quarrying rou		wing machineries	for
	-	S.No	Type	Nos	Dia Hole mm	Make	Motive power	
		î	1 Jack hammer		32	Atlas Copco	Compressed air	
		2	Compressor	1	=	Atlas Capco	Diesel Drive	

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	b.	Loading	3		vator of 0.90m er attachment	(1No).	city (with Rock
	C.	Transportation	4	Tippe	r 3Nos (5/10T	s) capacit	0 F a 4
5.6		Disposal o Overburden	í a	tipper const	ration gravel r to the needy	the form of G will be direct buyers for ro	ravel; after the ly loaded into ad project and leveling of low
5.7		Brief Note or Conceptual Mining Plan for the entire lease period	3	object bench of site UI pract of min	t of ten years n lay outs, se n of quarrying, es for construc- timate pit size ical factors su ning, safety zon ate Pit dimens	of systematic of lection of ultimate pit settion of infrastration of infrastration designed bases	ased on certain nomical depth le areas etc. under,
				Pit	Length	Width (Avg)	Depth(max)
1				No	(max) in (m)	in (m)	in(m)
				1	272	70	17
				Ulti	mate pit dimer	sion End of th	e lease period
				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)
				I	272	70	32
				the be Al Quali monit	oundary barrie I the baseline ty monitoring toring, Water	s been proposer by planting to information s ag, Noise a Analysis st ar as per the M	trees. studies like Air nd Vibration udies will be

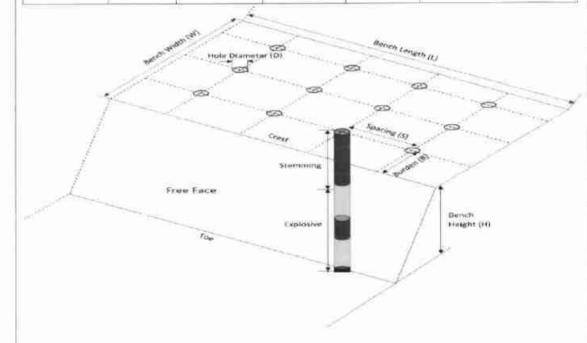
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6.0 Blasting:

6.1 Blasting Pattern	Bl	ast	irış	g P	att	ern	
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The massive formation is be broken into pieces of portable size by driving and bloning using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per K.g of explosives. Blasting parameters are as follows.

Diameter of the hole	Spacing	Depth	Burden for hole	Pattern of hole	Inclination of hole
32-36mm	0.6m	1 to 1.5m	0.6m	Zig Zag	70° from the horizontal



6.2 Types of Explosives

Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.

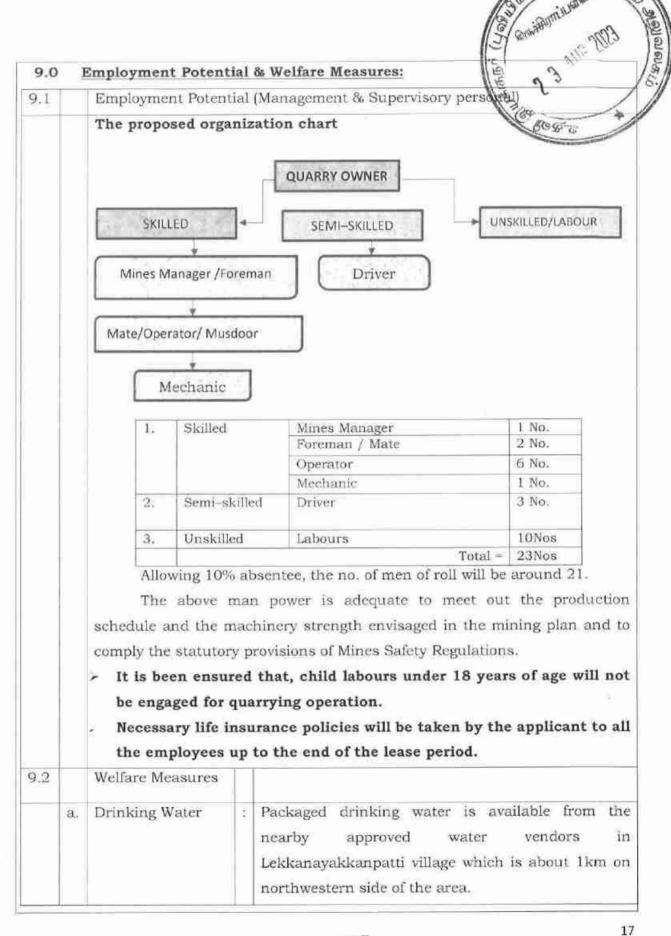
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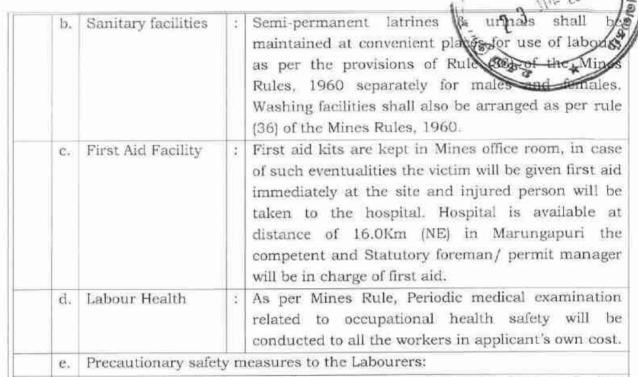
			Butter Burning of St. Co.
6.3	Measures proposed to minimize ground vibration due to blasting		For minimizing ground vibration and fly rocks. Shallow depths jackharaser drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock. Number of holes : 120 Powder factor : 6Ts/Kg of explosives Total explosive : 60Kg slurry required explosives Charge / hole : 0.5Kg Blasting time : 12 2 Pm
6.4	Storage of Explosives and safety measures to be taken while blasting.	4.0	 The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. The applicant ensure that will appoint
			the Mate (Should have Valid Blaster Certificate) during Blasting Operation.
7.0	Mine Drainage:		
7.0 7.1	Mine Drainage: Depth of Water table Arrangement and Places	क	the Mate (Should have Valid Blaster Certificate) during Blasting Operation. The ground water table is reported as 56m below ground level. In the proposed mining plan only 17m below ground level and 32m depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. Hence the quarrying operation may not affect the ground water. The ground water may not rise immediately in

8.0	Other Permanent Structures	*)	3 5 mm 3063
8.1	Habitations / Village	100	There are no habitations within a radius of
8.2	Power lines (HT/LT)	4	There is no Power lines (FF7LT) passing within a radius of 50m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)		There is Kuttai on eastern side and is 10m safety distance maintained. There is no Water bodies (river, odai, channel etc.) within 50m radius from the area.
8.4	Archaeological / Historical Monuments	(0)	There are no Archaeological / Historical Monuments within a radius of 500m.
8.5	Road (NH, SH, Village Road etc)	(3)	The National Highway (NH-785) Natham- Thuvarankurichi is about 1.8km on northern side of the area. The State Highway (SH-71A) Manapparai - Thuvarankurichi is about 6.4km or northeastern side of the area.
8.6	Places of Worship	Ę.	There are no Places of Worship within a radius of 500m.
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	I	There is Reserved Forest on Western side and is 300m Away from the area. There is no Wild Life Sanctuary etc., within a radius of 1Km.
8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	İ	There are No inter State border within a radius of 10Kms.
8.9	Any Other Structures		NiI

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Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.

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.





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10.0	The single section 1 March 1 M			ART - B	5.Bri (4.98)	South Mile Man
10.1	Environmental Manage Existing Land Use	_	ient Pi	an : The area is evh		stlplain topograph
	Pattern		2. (3. 1 4. 1	covered by Grav Quarrying oper lepth of 17m proposed mining Fluctuation of 1 petween 56m ar This region re	el formation is below gr g plan peri Water tabl id 53m du eccives th	ound level for the lod. le in this area is in
			(cultivation. e existing land t		iced by the seasonal n is given as under.
			SI. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
			1	Quarrying Pit	Nil	1.90.0
			2.	Infrastructure	Nil	0.01.0
			3.	Roads	Nil	0.01.0
			4,	Green Belt	Nil	0.70.0
			5.	Unutilized Total =	2.62.0 2.62.0	Nil 2.62.0
10.2	Water Regime	9	56m only been econo hence	and presently, 17m below grou envisaged as mic quarrying	in the pro and level a workable for the	oticed at a depth of oposed mining plan and 32m depth has depth for safe & entire lease period, und water depletion
10.3	Flora and Fauna	·@	Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.			
10.4	Climatic conditions	M	throu variat Th and n Th and	ghout the year ion in climate, is District rece orth east mons e average rainfa the temperatur r and to a m	er and to eives rain oon. all is about re ranges	condition prevails here is no sharp both in south west t 800mm to 900mm from 18°C during of 42°C during the

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					1 1	ESDS PLLE P	
10.5	Human Settlement		The nearest habitations with the population is given as under. Table No-5				
			S. No	Name of the Village	Approximate distance & Direction from	Approximate population	
			1.	Nattarpatti	lease applied are 1.4Km - NE	a 200	
			-	Sigampatti Nagiyampatti	1.0Km - NW 1.7Km - SE	300 350	
				Ammapatti	1.0Km-SW	200	
10.6	Plan for Air, Dust Suppression		proc will wat arra as t Ope con equ as p	be suppressed be suppressed be suppressed be suppressed be suppressed by the suppressed by the suppressed by the suppressed between the Mines Acceptations of the suppressed by the suppressed b	sk, ear plug, helm t.	cavation etc., ng of land by ust extractor lling units so ite of drilling, ly to such h protective et, gloze etc.,	
10.7	Plan for Noise Control		drill and peri to c site peri	ling and blasting hence, noise w odical noise leve heck the noise . Nowhere the	n Stone will be ca g by using low powerful be very minimal of monitoring will be level in and aroun noise level should of 80db during	er explosives, um. However, be carried out id the quarry d exceed the	
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next five years		of R and not env nois stuc	Rough stone with heavy blasting. likely to cau ironment as far se is concerned,	oposed is for a small nout involving deep Such limited min se any impact as pollution of a anyhow environnal	o hole drilling ing activity is adversely on ir, water and nental impact	

10.9	Proposal for Waste Management	5	There is no waste anticipated in this rough stone quarry operation.			
10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	2.	In the proposed mining plan 17h (Postow ground level) and 32m depth has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this lease period) of 47m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.			
10.11	Program for Afforestation	#	The 7.5m and 10m safety distance along the lease boundary has been identified to be utilized for afforestation. Appropriate native species of Neem/Pungan trees will be planted in the first year. Nearly 7000Sqm area is proposed to use under afforestation by planting 841nos of Neem/Pungan trees during first year with an anticipated survival rate of 80%. The Quarry landuse, layout and afforestation plan is shown in Plate No.III.			
0.12	Proposed Financial Estimate / Budget for (EMP) Environment Management					
W. 12	A.Fixed Asset Cost: 1. Land Cost (600000/1Ha)=	i i	Rs. 15,72,000			
	First aid room and accessories Labour Shed	202	Rs.1,00,000 Rs.1,00,000			
	4. Sanitary Facility		Rs.1,00,000			
	Total=		Rs. 18,72,000/-			
	B.Operational Cost:					
	1. Machineries	24	Rs.50,00,000-			
	2. Fencing cost	6/6	Rs. 2,00,000			
	Total		Rs.52,00,000/-			

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	C.EMP Cost:		Budget Provision for the entire quarrying period.			
		:	Air Quality Sampling	=	Rs. 40,000/-	
		1	Water Quality Sampling	=	Rs. 40,000/-	
		1	Noise Monitoring	=		
		Ground vibration test	=	Rs. 20,000/-		
	Expenditure				(W) 80 BISS	
	1. Drinking water	2	Rs.1,00,000/-	1	is a similar	
	2 CONTRACTOR AND ADDRESS OF THE PARTY OF THE	2	Rs. 50,000/-	1/9	graing mineral.	
	2. Sanitary Arrangements	5	Rs. 50,000/-	150	5 3 VIII SUB3	
	Safety kids	ž	Rs. 1,00,000/-	1/6	93 4	
	 Water sprinkling Afforestation Total= 	\$3	Rs. 1,00,000/-	11.2		
			Rs. 5,20,000/-	1	\$08°0 *	
	Total Project Cost (A+B+C)	8	Rs. 75,92,000/-			
	CSR Cost(2% of Total Project Cost)	*)	Rs. 1,51,840/-			

11.0 Mine Closure Plan:

11.1	Steps proposed for phased restoration, reclamation of already mined out area.	MI	There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattles.
11.2	Measures to be under taken on mine closure as per Act & Rules	37	Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.
11.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area		Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.

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(i) Permission will be obtained from the District Mine Office to extract the Rough Stone from the Boundary barriers and for slopes.

- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued and relevant mining laws in force.
- (v) Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

Prepared by

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc., Qualified Person

Under Rule 15 of Amended MCR, 2016

Place : Salem

Date: 14.08.2023

This Mining Plan is approved subject to the conditions Stip lated in this office Lr. No. 309 /9093/ Mines., Dated: 23.08.2093. As per the Rule 41 & 42 of TNMMCR 1959.

ASSISTANT DIRECTOR GEOLOGY & M MING TIRUCHIRAPPALLI.

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R. Arumugam

ந.க.எண்.302/2023/கணிமம்

உதவி இயக்குந**ர் ஆற்றை**லகம். புவியியல் மற்றும் சுரங்கதுக்கை, மாவட்ட ஆட்சியாக வளாகம், திருச்சிராப்பள்ளி –636 001.

рлdт : 11. 08.202

குறிப்பாணை

பொருள்:

சிறுவகைக் கணிமம் கணியங்களும் சுரங்கங்க(எநம் திருச்சிராப்புள்ளி மாலட்டம் மருங்காபுரி வட்டம் லெக்கநாபக்கன்பட்டி diampla. - 400 वाळकाळवा. 1B.1C.1D.1E.1F, 1G.1H மற்றும் 1I – மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் – பட்டா நிலத்தில் கல் மற்றும் கிராவல் குவாரி செய்ய அனுமதி கோரி திரு.ஆறுமுகம் த/பெராமையா என்பவர் விண்ணப்பித்தது ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் குழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் அனுப்பக் கோருதல் – தொடர்பாக.

பார்கை):

- திரு.ரா.ஆறுமுகம் த/பெ.ராமையா என்பவரின் விண்ணப்பம் நாள்.02.03.2023
- இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்:13.03.2023 (வருவாய் கோட்டாட்சியர், ஸ்ரீரங்கம் அவர்களுக்கு முகவரியிடப்பட்டது).
- வருவாப் கோட்டாட்சியர், பூரீரங்கம் அவர்களின் கடித ந.க.எண். அ6/1008/2023 நாள்: 08.06.2023.
- உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி புலத்தணிக்கை அறிக்கை நாள்:16:06:2023.
- அழசாணை எண்: 79, தொழில் (எம்.எம்.சி1)துறை, நாள்:
 6.4.2015
- அரசாணைஎண்.169, தொழில் (எம்.எம்.சி1) துறை, நாள்:04.08.2020.
- 7 இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண். 7240/MM6/ 2019 நாள்: 30.07.2021
- 8. இவ்வலுவலக இதேஎண்ணிட்டகடிதம்நாள்:20.06.2023
- Department of Technical Education, Tamilnadu Government College of Engineering, Dharmapuri – Lr.No.GCE/DPI/CIVIL/SOIL/2023/C-108, Dated.27.06.2023.
- 10 வட்டார வளர்ச்சி அலுவலர் (வ.ஊ.), ஊராட்சி ஒன்றியம் மருங்காபுரி அவர்களின் ந.க.அ2/2834/2023, நான்.08.08.2023

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R. Arnowsky

பார்வை 1-ல் காணும் விண்ணப்பத்தில், 1959 ஆம் வருடத்திய அழிநாடு சிறுகணிமச் சலுகை விதி எண்.19(1)ன் படி திருச்சிராப்பள்ளி மாவட்டம், மருக்கூடிரி வட்டம் லெக்கநாயக்கண்பட்டி கிராமம், புல எண்கள். 102/1A, 1B,1C,1D,1E,1F, 1G,1H மற்றும் 1 மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் 10 ஆண்டுகளுக்கு கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள அனுமதி கோரி திரு. ஆறுமுகம் த/பெ,ராமையா எண்பவர் மனு செய்துள்ளார்.

மேற்படி. இவ்விண்ணப்பம் தொடர்பாக, ஸ்ரீரங்கம், வருவாம் கோட்டாட்சியர் மற்றும் ஆகியோரால் புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் திருச்சிராப்பள்ளி மருங்காபுரி வட்டம், மேற்கொண்டு திருச்சிராப்பள்ளி மாவட்டம். புலத்தணிக்கை லெக்கநாயக்கண்பட்டி கிராமம். புல எண்கள். புல எண்கள். 102/1A, 1B,1C,1D,1E,1F, 1G,1H மற்றும் 1I -மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் கல் மற்றும் கிராவல் குவாரி செய்வதற்கு 10 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு பரிந்துரை செய்துள்ளார்கள்.

நிபந்தணைகள்:

- அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூரும் இன்றி கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
- அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும். பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- உயர்வழுத்தம் மற்றும் தாழ்வழுத்த மின்கம்பிகளுக்கு தமிழ்நாடு சிறுகனிமச் சனுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- குவாரிப்பணி ஆரம்பிக்கும் முன்னர் குத்தகைதாரர் தனது சொந்த செலவில் தாழ்வழுத்த மின்கம்பங்களை மாற்றி அமைக்க வேண்டும்.
- குவாரிப் பணிகளின் போது பாறை அகல Non Electric Method வெடிக்களை மட்டுமே பயன்படுத்த வேண்டும்.
- 6. வரைவு சுரங்கத் திட்டம் சமர்ப்பிக்கும்போது இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021–ல் தெரிவித்த படி, அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தினை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS, Survey செய்து அதன் அறிக்கையினை

சமர்ப்பிக்க வேண்டும். DGPS சர்வே அடிப்படையிலேயை சுரங்கத்திய இறி தயார் இசைப்பப்பட வேண்டும்.

குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தல் கூடாது.

8. குவாரித் தொழிலாளர்களை தமிழ்நாடு தொழிலாளர் நல வாரியக்கில் பதிவு குழு காப்பீடு செய்வதையும் உறுதி செய்திடல் வேண்டும். 695

மனுதாரர் திரு.ஆறுமுகம் த/பெராமையா என்பவர் கல் மற்றும் கிராவல் குண்டி அமைக்க அனுமதி கோரிய புல எண்கள் பின்வரும் விவரப்படி UDR "அ" பதிவேட்டில் தாக்கலாகியுள்ளது.

വ. எൽ	റ്റോ ഒരുവ	வைகப்பாடு	பரப்பு ஹெக். ஏர்ஸ்	பட்டா எண்	பட்டாதாரர் பெயர்
1.	102/1A	6.4	0.48.5	81	செ.சக்திவேல்
2.	102/18	6.4	0.27.5	263	சி.பழனிச்சாமி கவுண்டர்
3.	102/1C	5. 4	0.33.0	378	சி.மணிக்காளை (எ) சின்னுக் கவுண்டர்
4	102/1D	g.ų	0.23.0	104	வெ.சின்னு
5.	102/1E	ГЦ	0.38.0	262	ந.பழனிச்சாமி
6.	102/1F	0.4	0.23.0	206	இளவர் ப.தங்கையா காப்பாளர் தாபார் நல்லம்மாள்
7.	102/1G	вц	0.23.0	516	வ.ந.பழனிச்சாமி(1) இனவர் வ.ந.துரைராஜ்(2) காப்பாளர் தாயார் நயினி அம்மாள்
8.	102/1H	ФH	0.20.0	457	க.ந.வெள்ளையம்மாள
9.	102/1	gų	0.26.0	263	சி.பழனிச்சாமி கவுண்டர்

மேற்கண்டவாறு amyla 10(1) சிட்டாவில் தாக்கலாகி பிண்பு T.K.964/1410. நாள்.22.11.2000ன் படி மேற்கண்ட புல எண்கள். 102/1A, 1B,1C,1D,1E,1F, 1G,1H மற்றும் 11 பட்டா எண்.415–ல் இராமச்சந்திரன் மணைவி மேகலா என்பவர் பெயரில் தாக்கலாகி பின்பு TR.No.2021/0103/15/253923, நாள்.10.11.2021ன் படி பட்டா எண்.1216 இராமச்சந்திரன் மகள் மோனிகா என்பவர் பெயரில் தாக்கலாகி பின்பு TR.No.2022/0103/15/276002 நாள்.19.03.2022– ன் படி பட்டா எண்.1235–ல் மனுதாராகிய ராமையா மகன் ஆறுமுகம் பெயரில் தற்சமயம் தாக்கலாகியுள்ளது.

மருங்காபுரி வட்டம், லெக்கநாயக்கண்பட்டி கிராமம், புல எண்கள். 102/1A, 1B,1C,1D,1E,1E, 1G,1H, 1l பூஸ்தியில் தரிசாக காணப்படுகிறது. மேற்படி நிலமானது பூமிதான நிலமோ, நில உச்சவரம்பிற்குட்பட்ட நிலமோ, பஞ்சமி நிலமோ இல்லை. மேலும் மேற்படி நிலமானது நீர்பிடிப்பு நிலம் இல்லை. மேற்படி நிலத்திணைச் சுற்றி 500 மீட்டர் சுற்றளவில் கல்வி நிறுவணங்களோ,

RAmmyam

குடியிருப்புகளோ, பராதானச் சின்னங்களோ ஏதுமில்லை. மேலும் தாழ்வழுத்த மின்கும்பியானது மேற்படி புலத்தின் குறுக்கே வடக்கு தெற்காக செல்கிறது. மேற்படி புல எண்.102/1A மற்றும் 10218–க்கு கிழக்கே புல எண்.102/2 பரப்பு ஹெக்.0.26.0 ஏர்ஸ் நிலம் குட்டை என தாக்கலாகியுள்ளது. மேலும் வட்டாட்சியர் மருங்காயுரி அவர்களது அறிக்கையில் கூவாரி கணி செய்ய விண்ணப்பித்துள்ள புலத்திற்கு அருகில் புல எண்.102/2 மொத்த பரப்பு 0.26.00 ஹெக்டேர் ஆனது கிராம கணக்கில் குட்டை என்று பதிவாகியுள்ளது. தற்சமயம் இந்த குட்டைக்கு நீர்வரத்து வாரிகளோ, கையிக்கால்களோ, பாசன வசதிகளோ மற்றும் ஆயக்கட்டுகளோ ஏதும் இல்லை என்றும் தெரிவித்துள்ளார். எனவே, அருகில் உள்ள குட்டைக்கு 10மீ பாதுகாப்பு இடைவெளி விட்டு குவாரிப் பணி செய்ய அனுமதி வழங்கலாம்.

மேலும் மனுதாரர் கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரும் புல எண்ணிற்கு கிழக்கே சுமார் 500மீ தொலைவில் மெஹருன்னிசா பேகம் என்பவரது கல் குவாரி செயல்பட்டு வருகிறது. கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரும் புல எண்களுக்கு அக்கியம்பட்டி கிராமம், புல எண்.157/28 பட்டா நிலம், லெக்கநாயக்கன்பட்டி கிராமம். புல எண்.101/1 பட்டா நிலம் மற்றும் லெக்கநாயக்கன்பட்டி கிராமம், புல எண்.101/2 அரசு புறம்போக்கு கல்லங்குத்து ஆகியவற்றின் வழியாக பாதை செல்கிறது.

மேற்படி புலங்களில் கல் மற்றும் கிராவல் குவாரி அமைப்பது தொடர்பாக கடந்த 20.04.2023 அன்று A-1 நோட்டிஸ் பிரசுரம் செய்யப்பட்டுள்ளது. மேலும், கல் மற்றும் கிராவல் குவாரி அமைக்க கோரும் நிலங்களில் நிலவரி பாக்கி ஏதுமில்லை.

கல் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி கோரிய புல எண்களுக்கான நான்கெல்லை விபரம் பின்பவருமாறு

புல எண்.102/1A

வடக்கு	அக்கியம்பட்டி கிராம எல்லை	
தெற்கு	புல எண்.102/1B – மனுதாரர் நிலம்	
கிழக்கு	புல எண்.102/2- குட்டை	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	

புல எண்.102/1B

வடக்கு	புல எண்.102/1A – மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1C –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.102/2 – குட்டை	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	



ഖ ലക്ക്ര	புல எண்.102/18 – மனுதார் நிலம்
தெற்கு	புல எண்.102/1D –மனுதார் நிலம்
கிழக்கு	புல எண்.102/1E – மனுதாரர் நிலம்
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து



புல எண்.102/1D

வடக்கு	புல எண்.102/1C – மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1F –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.102/1E – மனுதாரர் நிலம்	
மேற்கு	புல எண்.101/2- கல்லாங்குத்து	

цои отобя:102/1Е:-

வடக்கு	புல எண்.102/2-குட்டை	
தெற்கு	புல எண்.102/1F –மனுதார் நிலம்	
கிழக்கு	புல எண்.102/1C – மனுதளர் நிலம்	
மேற்கு	புல எண்.102/1D– மனுதாரர் நிலம்	

цои отобот.102/1F:-

வடக்கு	புல எண்.102/1D, 1E– மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1G –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.100 – கல்லாங்குத்து	
மேற்கு	புல எண்.101/2 – கல்லாங்குத்து	

புல எண்.102/1G:--

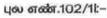
வடக்கு	புல எண்.102/1F– மனுதாரர் நிலம்	
தெற்கு	புல எண்.102/1H –மனுதாரர் நிலம்	
திழக்கு	புல எண்.100 – கல்லாங்குத்து	
மேற்கு	புல எண்.101/2– கல்லாங்குத்து	
	புல எண்.100 – கல்லாங்குத்து	

புல எண்.102/1H:-

வடக்கு	புல எண்.102/1G, 1I – மணுதாரர் நிலம்	
தெற்கு	புல எண்.102/11 –மனுதாரர் நிலம்	
கிழக்கு	புல எண்.100- கல்லாங்குத்து	
மேற்கு	புல எண்.100 – கல்லாங்குத்து	

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B-oraces Law



ส.102/1 : −		S. Bunganing Suss
வடக்கு	புல எண்.102/1H–மனுதாரர் நிலம்	1 3 B
தெற்கு	புல எண். 100– கல்லாங்குத்து	8.
கிழக்கு	புல எண். 100- கல்லாங்குத்து	505-3
மேற்கு	புல எண். 100– கல்லாங்குத்து	

மேலும், பார்வை 10-ல் காணும் கடித்தில் ஊராட்சி ஒன்றியம் அலுவலர்(வ.ஊ.), ஊராட்சி ஒன்றியம் மருங்காயுரி அவர்கள் மேற்கூறிய புல எண்களில் கல் மற்றும் கிராவல் குவாரி பணி செய்ய உதவி பொறியாளர், ஊராட்சி ஒன்றியம், மருங்காபுரி என்பவரின் பரிந்துரையின் பேரில் கீழ்காணும் நிபந்தனைகளுடன் பரிந்துரைத்து அனுமதி வழங்கப்படுகிறது என தெரிவித்துள்ளார்.

நிபந்தணைகள் :--

- 1. வருவாப்த்துறையினர் தள ஆய்வு மேற்கொண்டு அளவீடு செய்யப்பட்டு அறிக்கை பெறப்பட்ட பின்னரே குவாரி பணி நடைபெற வேண்டும். குட்டை நீர்ப்பிடிப்புப் பகுதிகளின் எல்லைகளை வருவாழ்த்துறையினர் தங்களது அளவையார்களைக் கொண்டு நீர்ணயிக்கப்பட்ட பின்னரே கல் மற்றும் கிராவல் குவாரி பணி செய்ய வேண்டும்.
- 2. வருவாய்த்துறையினர் புல வரைபடத்தில் குறிப்பிடப்பட்ட இடத்தில் மட்டும் கல் மற்றும் கிராவல் குவாரி பணி செய்ய வேண்டும்.
- 3. குட்டையிலிருந்து 10 மீட்டர் குறைவில்லாமல் இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரி பணி செய்ய வேண்டும்.
- 4. கல் மற்றும் கிராவல் குவாரி பணி செப்யும் பொழுது குட்டையின் வரத்துகளுக்கு எந்த சூழ்நிலையிலும் பாதிப்பு ஏற்படாத வண்ணம் முன்னெச்சரிக்கை நடவடிக்கைகள் எடுக்க வேண்டும்.
- குறியீடு செய்யப்பட்ட இடத்திற்கு அப்பாலோ அல்லது வேறு இடத்திலோ கல் மற்றும் கிராவல் மண் அள்ளப்பட்டால் அதற்கு மனுதாரரே முழு பொறுப்பாவார்.
- குட்டையின் தன்மை மற்றும் ஆயக்கட்டுத்தாரர்களின் நலனை கருத்திற்கொண்டு மண் எடுக்க அளிக்கப்பட்டிருக்கும் பரிந்துரை அறிக்கையினை எக்காரணமும் தெரிவிக்காமல் ரத்து செய்ய இத்துறைக்கு முழு அதிகாரம் உண்டு.
- 7. மண் எடுக்க பயன்படுத்தப்படும் வாகனங்கள் குட்டையின் நீர்ப்பிடிப்பு பகுதிகளை பாதிக்காத வண்ணம் செல்ல வேண்டும்.
- 8. **500**115 வாகனங்கனன பயண்படுத்தும் போது நீர்நிலைகளுக்கோ, நீரிவழித்தடங்களுக்கோ எவ்வித சேதமும் ஏற்படக்கூடாது. அவ்வாறு ஏற்பட்டால் அதனை நிவர்த்தி செய்ய நடவடிக்கை மேற்கொள்ளப்பட வேண்டும்.
- 9. கல் மற்றும் கிராவல் குவாரி பணி செய்யும் போது உரிம காலம் முடியும் வரை சட்டம் ஒழுங்கு பிரச்சனை ஏற்பட்டால் இத்துறை எவ்வித பொறுப்பும் ஏற்காது.



R. Arnnygem

எனவே, வருவாப் கோட்டாட்சியர், ஸ்ரீரங்கம் மற்றும் உதவி இயக்குநர் புறியியல் மற்றும் சுரங்கத்துறை, திருச்சிராப்பள்ளி ஆகியோரின் அறிக்கையின் படி திருச்சிராப்பள்ளி மாவட்டம், மருங்காயுரி வட்டம், லெக்கநாயக்கன்பட்டி கிராமம் புல எண்கள். 102/1A. 1810:10.1E.1F, 16.1H மற்றும் 1I – மொத்தம் பரப்பு 2.62.0 ஹெக்டேர் பட்டா நிலத்தில் திரு.ஆறுமுகம் த/பெ.ராமையா என்பவருக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி 19(1) –ன் படி கல் மற்றும் கிராவல் குவாரி செய்வதற்கு குத்தகை பத்திரம் நிறைவேற்றப்பட்ட நானிலிருந்து 10 ஆண்டுகளுக்கு கல் குவாரி மற்றும் அதில் முதல் 03(மூன்று) ஆண்டுகளுக்கு கிராவல் குவாரி பணி மேற்கொள்ள கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்குவதற்குரிய தேற்ற (Precise Area Communication) பரப்பாக கருதப்படுகிறது.

மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி எண். 41 மற்றும் 42-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்திணை 90 திணங்களுக்குள் கீழ்காணும் நிபந்தனைகளுக்கு உட்பட்டு சமர்ப்பிக்குமாறும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெறவும் மணுதாரர் கேட்டுக்கொள்ளப்படுகிறார்.

நிபந்தனைகள்

- அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூரும் இன்றி கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
- அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும், பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் மற்றும் கிராவல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- உயர்வழுத்தம் மற்றும் தாழ்வழுத்த பின்கம்பிகளுக்கு தமிழ்நாடு சிறுகனிமச் சலுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- குவாரிப்பணி ஆரம்பிக்கும் முன்னர் குத்தகைதாரர் தனது சொந்த செலவில் தாழ்வழுத்த மின்கம்பங்களை மாற்றி அமைக்க வேண்டும்.
- 5. குவாரிப் பணிகளின் போது பாறை அகல Non Electric Method வெடிக்களை மட்டுமே பயன்படுத்த வேண்டும்.
- 6. வரைவு சுரங்கத் திட்டம் சமர்ப்பிக்கும்போது இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021–ல் தெரிவித்த படி, அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தினை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS, Survey செய்து அதன் அறிக்கையினை

14)

சமர்ப்பிக்க வேண்டும். DGPS சர்வே அடிப்படையிலேயெ சுரங்கத்திட் வேண்டும்.

குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தல் கூடாது.

 குவாரித் தொழிலாளர்களை தமிழ்நாடு தொழிலாளர் நல வாரியத்தில் இவு இசய்வது ன் குழு காப்பீடு செய்வதையும் உறுதி செய்திடல் வேண்டும்.

> உதவி இயக்குநர். புவியியல் மற்றும் சுரங்கத்துணற, திருச்சிராப்பள்ளி

பெறுதல்,

திரு.ஆறுமுகம் த/பெ.ராமையா 47 வடக்கு தெரு. லெம்பலக்குடி. புதுக்கோட்டை மாவட்டம். OT TOWN

District : Thiruchirappalli

Taluk: MARUNGAPURI

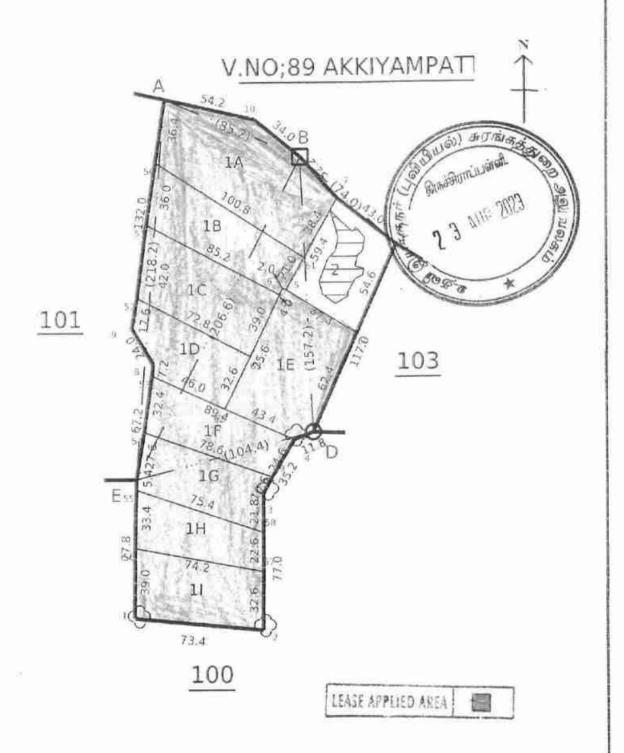
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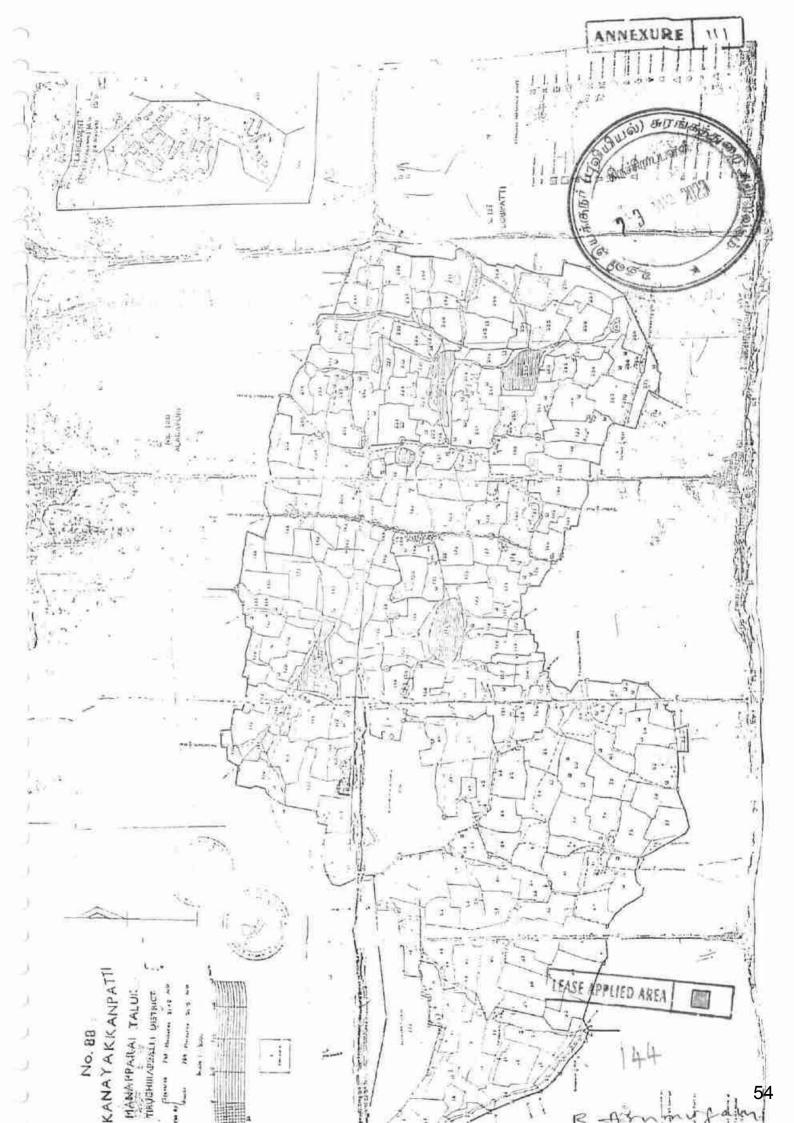
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தமிழக அரச வருவாம்த் முறை

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

மாவட்டம் : இருச்சிராப்பன்னி வருவாய் கிராமம் : லெக்காநாயக்கள்யட்டி

வட்டம் : மருங்காபுரி

பட்டா என் : 1235

உரிமையாளர்கள் பெயர்



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குறிப்பு2 :



பேற்கண்ட நகவல் / சானற்று நகல் விஷங்கள் மின் பறிவேட்டிலிருந்து பெறப்பட்டமை. இவற்றை தாங்கள் https://eservices.in.gov.in என்ற இணைய நனத்தில் 15/10/088/01235/60851 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறநி செய்துகோன்னவும்

² இத் நக்கல்கள் 27-02-2023 அன்று 09:23 18 AM நேரத்தில் அச்சடிக்கப்பட்டது

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Government of India



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VID : 9171 5054 2332 0111

வ் ஆ.அரர் எக்கது அரை பானம்

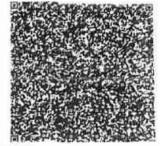
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Unique Identification Authority of India

ழகவரி: S/O என்பமா, 47, வடக்கு தொர, சமாப்பக்குடி, வெம்பகைகுடி, முக்கோட்டை, சிழநாடு - 622412

Address: S/O Ramaiyah, 47, north STREET, LEMBALAKUDI, Lembalakudi, Pudukkottai, Tamil Nadu - 622412



7504 4323 2413

VID : 9171 5054 2332 0111 → 1947 | → hetp@uldet.gov





Jeppiaar Cements Private Limited

Thittakudi Road, Keelamathur, Kunnam Taluk, Perambalur Dist-621 713. E-mall : jeppiaarariyalur@yahoo.com



This is to certify that Mr.S.Gopi, 5/o.V.Shanmugam was worked as a Geologist in Supervisory capacity in Jeppiaar Cements (P) Ltd. Panangoor limestone mines situated at Alanthuraiyarkattalai Village in Ariyalur Taluk & District from 01.06.2011 to 07.09.2016. His nature of duty involved in

- Survey and Exploration of new Limestone bearing areas and Reserve estimation, (under legislation of mines and minerals).
- 2 Sampling and Quality control & categorization of Limestone at the mines.
- 3. Production planning and other mining related works,
- 4. Preparation & updation of Mines statutory plans along with mines surveyor.
- 5. Preparation of mining plan and scheme of mining.

His conduct and character are very good and we wish him all the very best in his future endeavors.

COMMON PE

For jeppidar cements (P) Ltd

5.Kannan

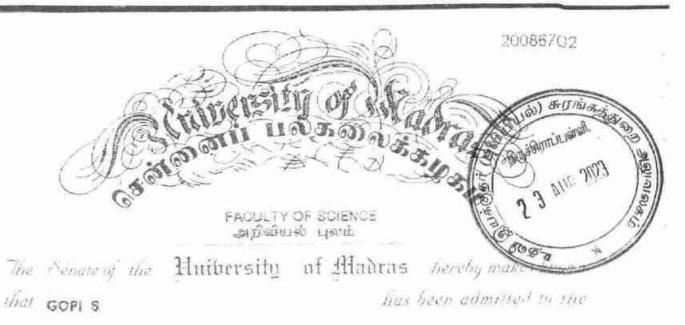
Mines Agent and General Manager

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Kauur - 24

R. Aramyten

Registered Office: Old No.12, New No.29, Ganapathy Street, Royapettah, Chennai - 600 014.



DEGREE OF MASTER OF SCIENCE IN GEOLOGY

he she having been vertified by duly appointed Examiners to be qualified to receive the same and was placed in the

APRIL 2010

through PRESIDENCY COLLEGE, GHENNAI [Autonomous]

சென்னைப் பன்கலைக்கழகப் போலை, 2010 ஆம் ஆண்டு ஏபிரல் மாதம் நடத்த புணியமைப்பியல்

சென்னை, மாநிலக் கல்லூரியில் (தன்னாட்சி)

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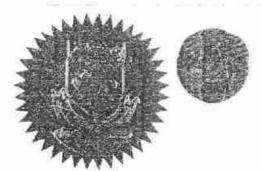
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தேர்வாளர்கள் சான்றவித்தபடி, அறிவீஙல் நீறைஞர் என்னும் பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

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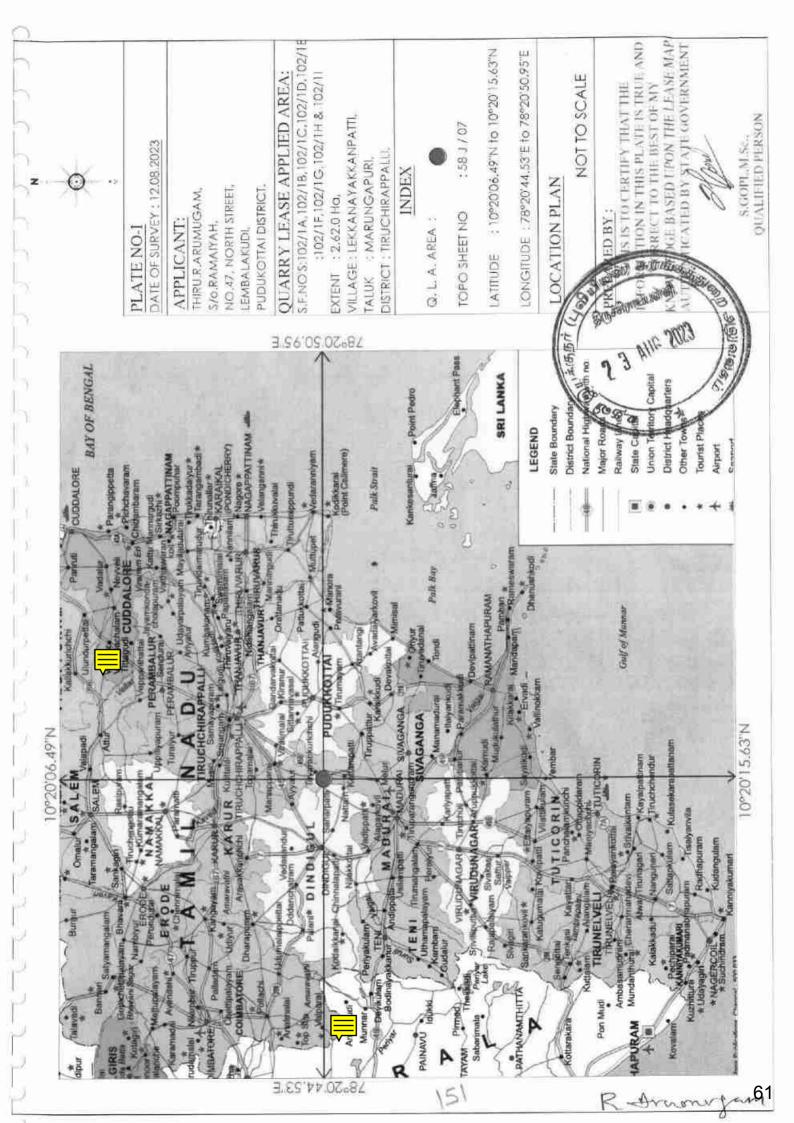
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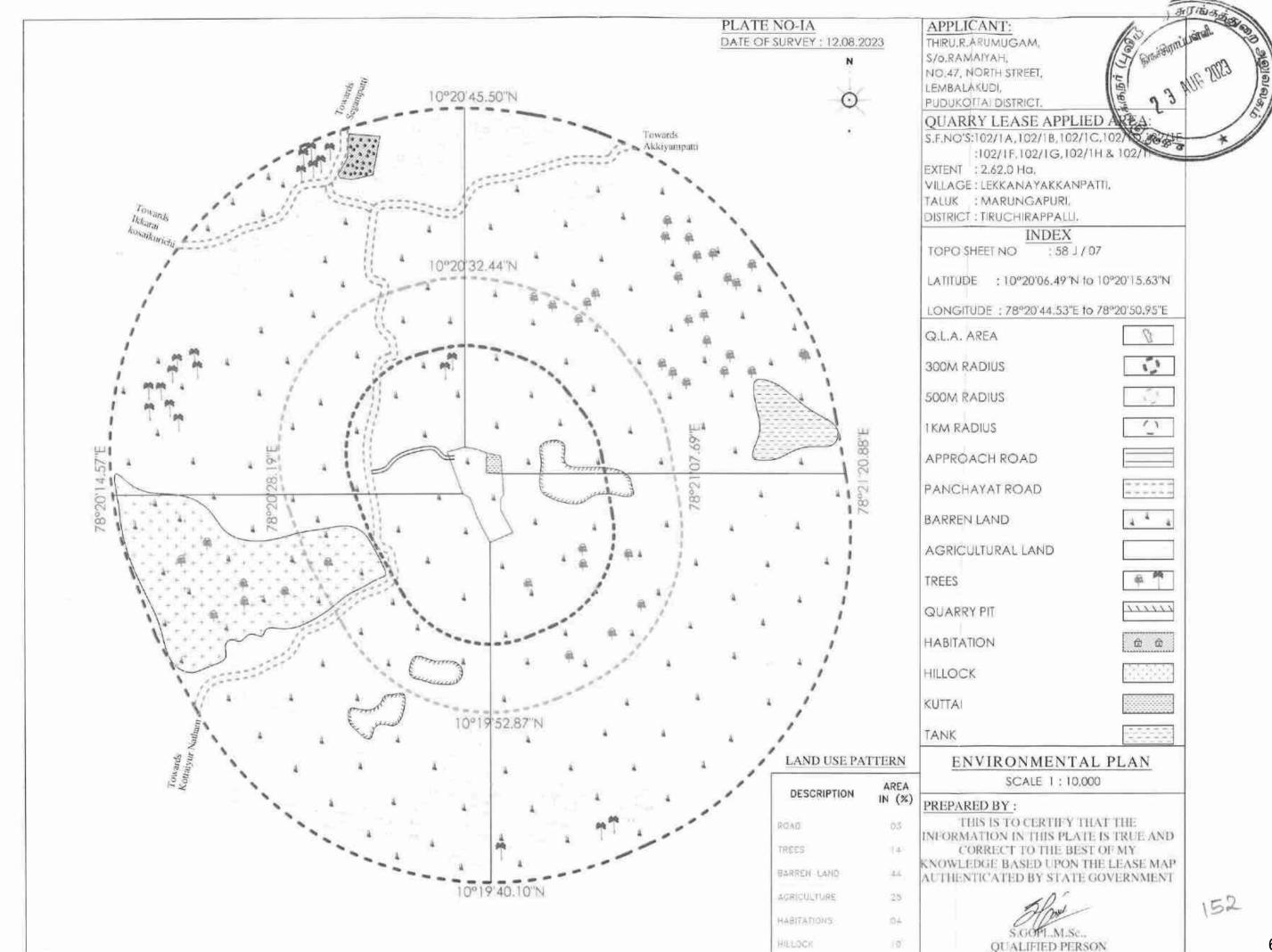
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10°20'45.50"N 10°19'40.10"N



PLATE NO-IB

DATE OF SURVEY: 12.08.2023

APPLICANT:

THIRU, R. ARUMUGAM.

S/o.RAMAIYAH, NO.47, NORTH STREET,

LEMBALAKUDI.

PUDUKOTTAI DISTRICT.

OUARRY LEASE APPLIED AREA:

S.F.NO'S:102/1A,102/1B,102/1C,102/1D,102/1E

:102/1F,102/1G,102/1H & 102/11

EXTENT : 2.62.0 Ha.

VILLAGE: LEKKANAYAKKANPATTI,

TALUK : MARUNGAPURI, DISTRICT : TIRUCHIRAPPALLI.

INDEX

:58 1/07 TOPO SHEET NO

LATITUDE : 10°20'06,49"N to 10°20'15.63"N

LONGITUDE: 78°20'44.53"E to 78°20'50.95"E

Q.L.A. AREA

300M RADIUS



500M RADIUS



TKM RADIUS



APPROACH ROAD



PANCHAYAT ROAD



ENVIRONMENTAL PLAN

SCALE 1:10,000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

S.GOPL.M.Sc.

QUALIFIED PERSON

10°36'53.91"N 10°25 56.18"N PLATE NO-I C

DATE OF SURVEY: 12.08.2023

APPLICANT:

THIRU, R. ARUMUGAM, S/O.RAMAIYAH. NO.47. NORTH STREET. LEMBALAKUDI,

PUDUKOTTAI DISTRICT.

OUARRY LEASE APPLIED A

S.F.NO'S:102/1A.102/1B.102/1C.102/1D :102/1F,102/1G,102/1H & 102/1I

EXTENT : 2.62.0 Ha.

VILLAGE: LEKKANAYAKKANPATTI,

TALUK : MARUNGAPURI. DISTRICT: TIRUCHIRAPPALLI.

INDEX

TOPO SHEET NO :58 J / 07

LATITUDE : 10°20'06.49"N to 10°20'15.63"N

LONGITUDE : 78°20'44,53"E to 78°20'50.95"E

Q.L.A. AREA



10KM RADIOUS



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TOPO SKETCH OF QUARRY LEASE

APPLIED AREA FOR

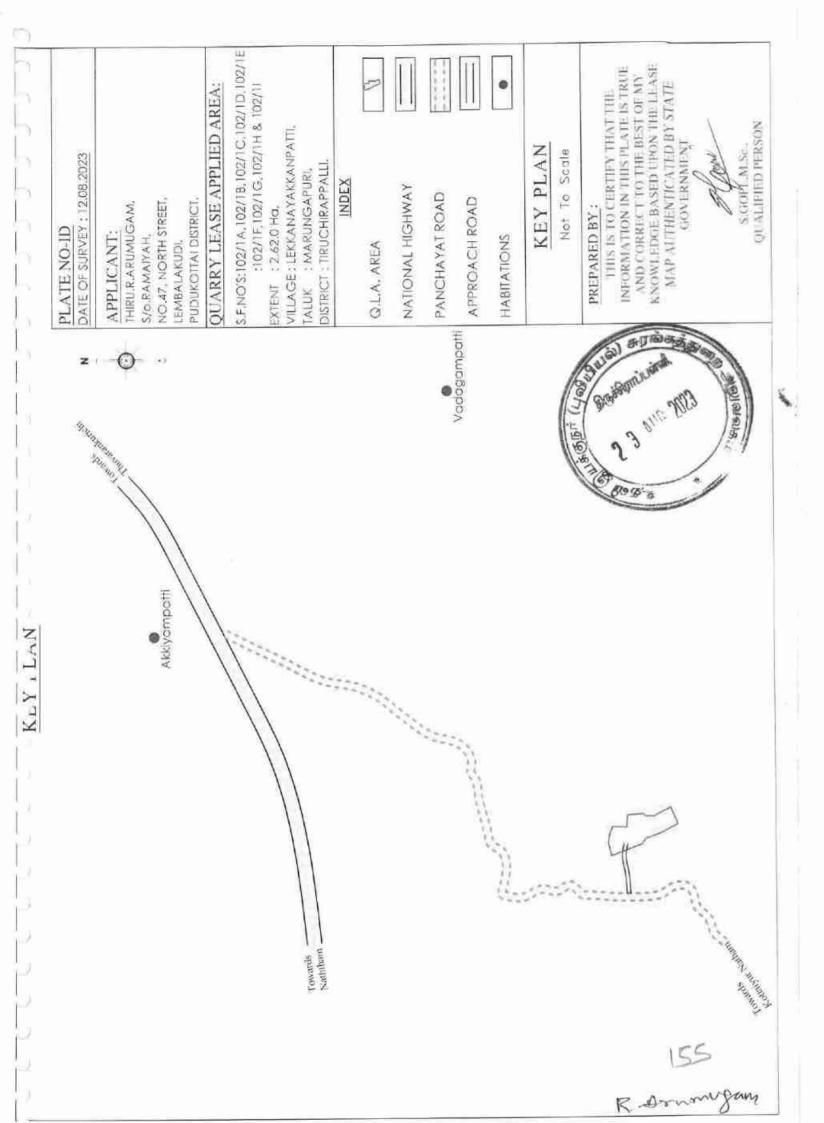
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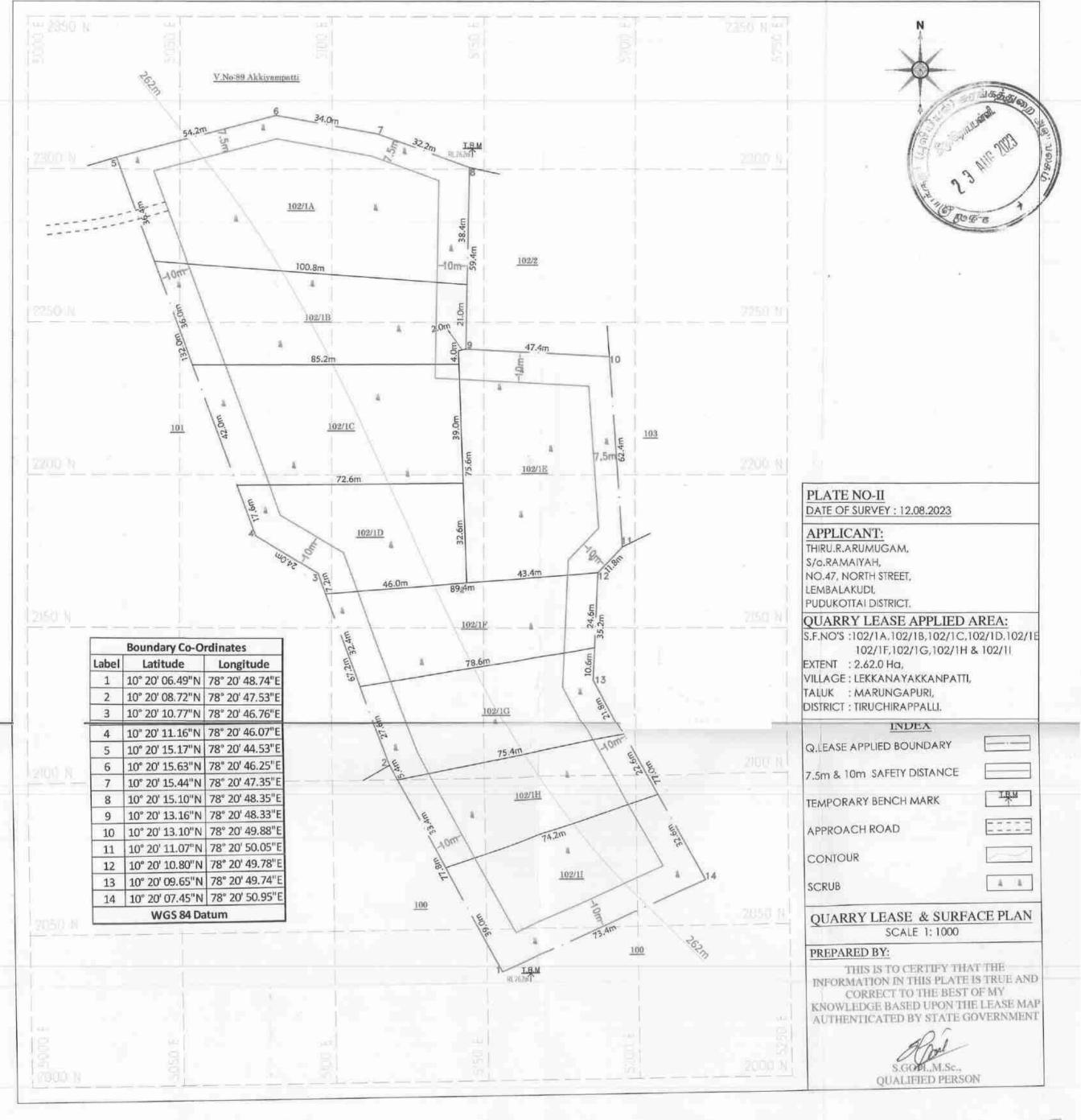
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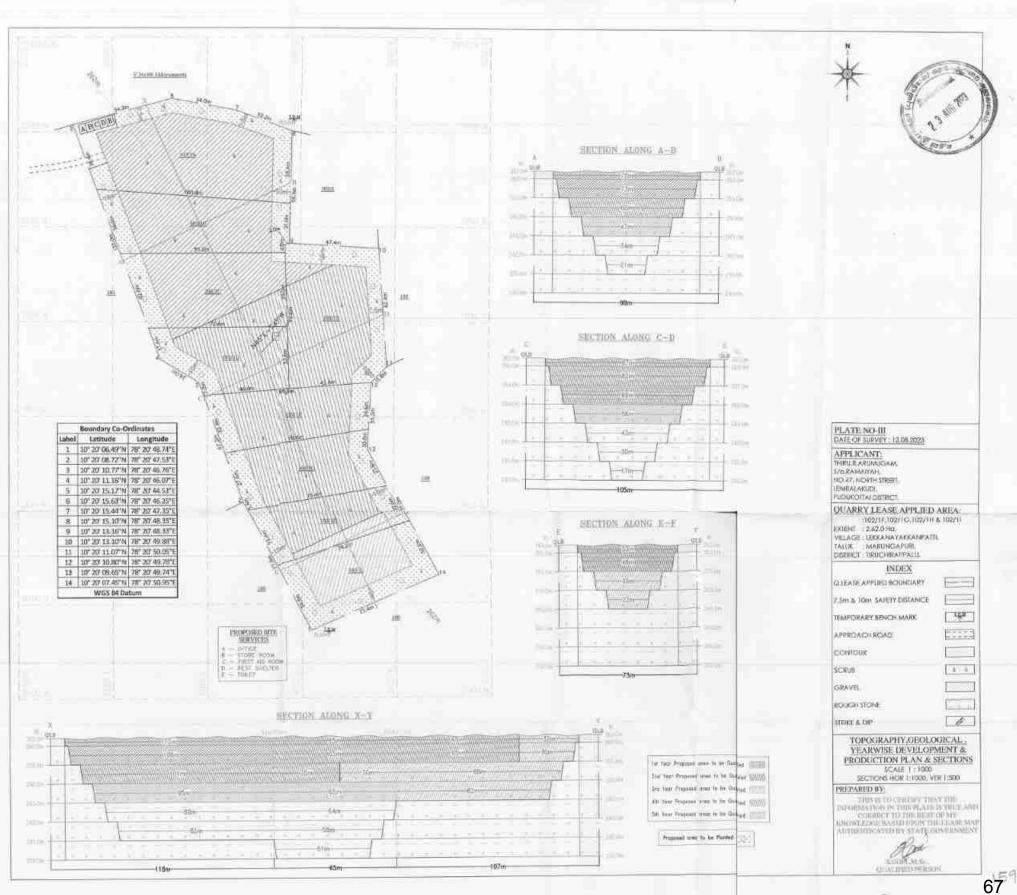
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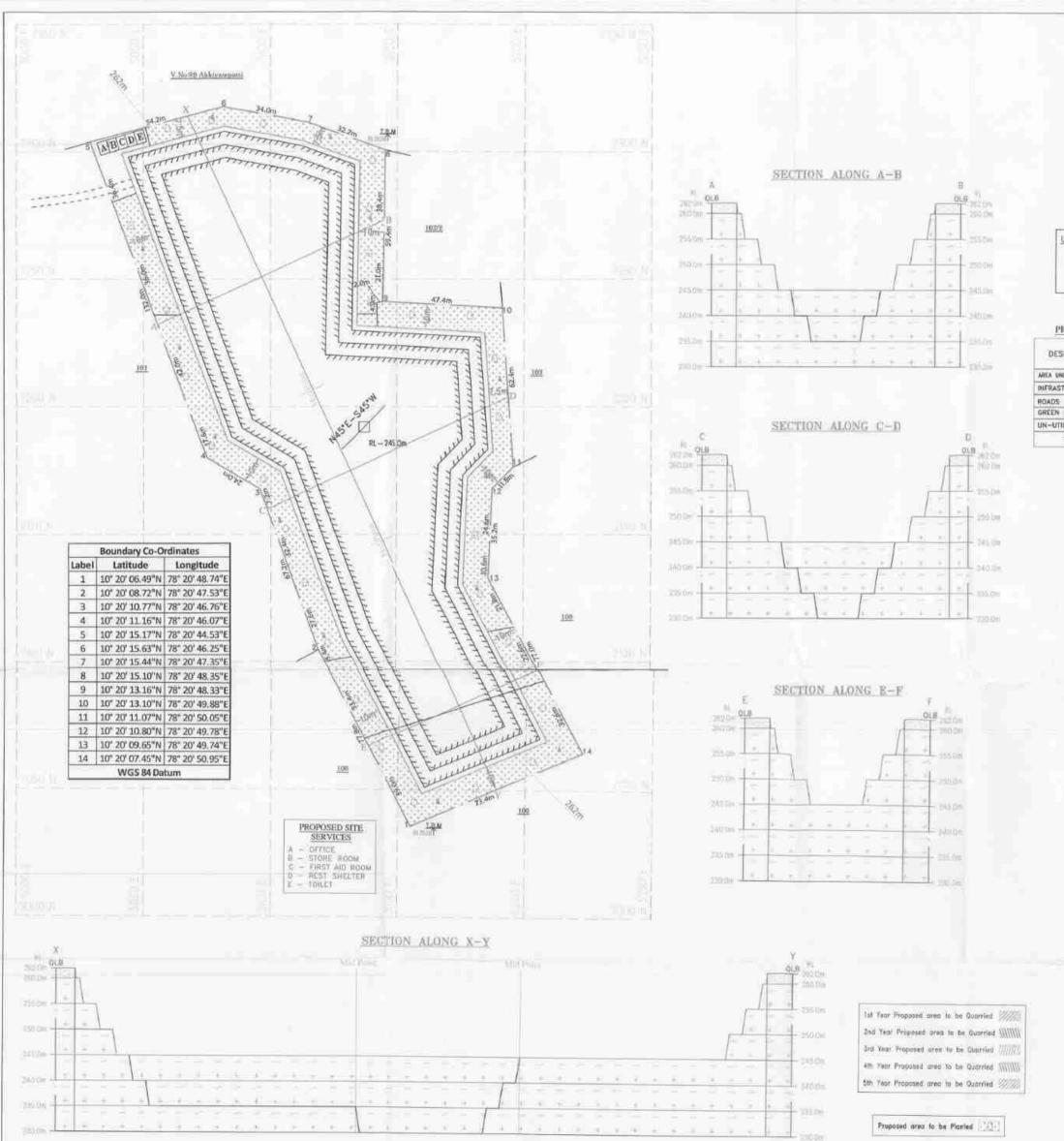
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

S.GOPL.M.Sc., QUALIFIED PERSON













Ultimate Pit Dimension of End of the Mining Plan Period L272mX70(Avg)mXD17m(Max) XXXX

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ho)	AREA AT THE END OF THIS QUARRYING PERIOD (Ho)	
AREA UNDER QUARRYING	MIT	1,90.0	
RIFRASTRUCTURE	160	0.01.0	
ROADS	1911	0.01.0	
GREEN BELT	NO	0.70.0	
UN-UTILIZED AREA	2.62.0	MI	
TOTAL	2.62.0	2.62.0	

PLATE NO-IV DATE OF SURVEY: 12.08.2023

APPLICANT: THIRU.R.ARUMUGAM.

5/o.RAMAIYAH, NO.47, NORTH STREET.

LEMBALAKUDI, PUDUKOTTAL DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NO'S:102/1A,102/1B,102/1C,102/1D,102/1E :102/1F,102/1G,102/1H & 102/1I

EXTENT : 2.62.0 Ha,

VILLAGE : LEKKANAYAKKANPATTI,

TALUK : MARUNGAPURI,

DISTRICT : TIRUCHIRAPPALLI. INDEX

QLEASE APPLIED BOUNDARY

7.5m & 10m SAFETY DISTANCE

TEMPORARY BENCH MARK

APPROACHROAD

CONTOUR

SCRUB

GRAVEL

ROUGH STONE

STRIKE & DIP

PROPOSED QUARRY PIT

PROGRESSIVE QUARRY CLOSER PLAN & SECTIONS

SCALE 1:1000 SECTIONS HOR 1:1000, VER 1:500

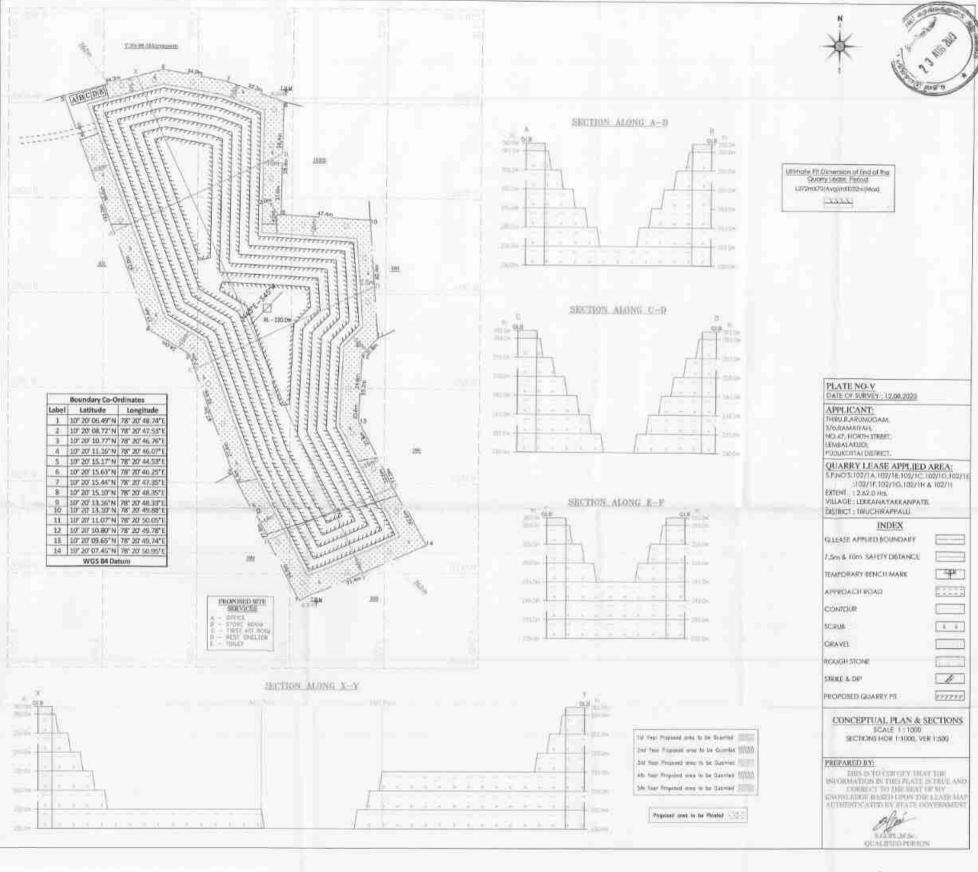
PREPARED BY:

THIS IS TO CERTIFY THAT THE DIPORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY RNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT



11

min



ANNEXURE - 3 500m radius cluster letter

From

A.Balamurugan M.Sc, M.B.A., Assistant Director, Geology and Mining, Tiruchirappalli. To

Thiru.R.Arumugam, S/o.Ramaiah, No.47, North Street, Lembalakudi, Pudukkottai.

Rc.No.302/2023/Mines

dated:23.08.2023.

Sir,

Sub: Mines and quarries – Minor minerals – Tiruchirappalli District – Marungapuri Taluk – Lekkanayakkanpatti Village – S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I over an extent of 2.62.0 Hects. of Patta land – Rough Stone and Gravel quarry permission requested by Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai – Precise area communicated – Mining Plan approved – the details of existing/abandoned quarries situated within 500mts, radial distance requested by the applicant – details furnished – Reg.

Ref:

- 1) Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai District application dated 02.03.2023.
- Precise area communication letter Rc.No.520/ 2021/Mines dated 11.08.2023.
- Assistant Director of Geology and Mining, Tiruchirappalli letter Rc No.302/2023/Mines dated. 23.08.2023
- Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai letter No. Nil dated 23.08.2023.

Thiru.R.Arumugam, S/o.Ramaiah, Pudukkottai has applied for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 2.62.0 Hects. of patta lands in S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I of Lekkanayakkanpatti village, Marungapuri Taluk, Tiruchirappalli District for a period of 10 years for Rough Stone and 3 years for Gravel under Rule 19 of Tamil Nadu Minor Mineral Concession Rules, 1959.

In the reference 2nd cited, The precise area communicated to the applicant Thiru.R.Arumugam, S/o.Ramaiah with a direction to produce the Mining Plan in respect of the lease applied area.

In the reference 3rd cited, the Assistant Director of Geology and Mining, Tiruchirappalli has approved the mining plan vide letter Rc.No.302/2023/Mines dated.23.08.2023

In the reference 4th cited, the applicant Thiru.R.Arumugam, S/o.Ramaiah has requested to furnish the details of all quarries located within 500 mts. radius from the lease area for obtaining environmental Clearance from SEIAA.

Hence, the details of quarries situated within 500 mts. radial distance from the periphery of this proposed quarry are furnished as follows

SI. No	Name of the lessee/applicant	Name of Village & Survey Number	Extent in Hectare	Lease Period		
(i)	Abandoned quarries		7144414			
1		NII		Th. C		
(ii)	Existing quarries .					
1	TVI.R.R. Infra Construction, No.2, Visalatchipuram, Madurai – 14	S.F.No.51/4, 54/1(P) of Patta land in Lekkanayakkanpatti village, Marungapuri Taluk	2.65.0	5 Years 02.12.2021 to 01.12.2026		
2	Tmt.J.Magarunisa, W/o.Jamal Mohamed, No.65, Hospital Street, Thuvarankurichi, Trichy.	S.F.No.104/1 and 104/2 of Patta land in Lekkanayakkanpatti village, Marungapuri Taluk	1.66.5	5 Years 04.02.2021 to 03.02.2026		
(iii)	Proposed quarries	, angapan raide	11 10 -11			
1	Thiru.R.Arumugam, S/o.Ramaiah, No.47, North Street, Lembalakudi, Trichy.	S.F.Nos.102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G,102/1H and 102/1I of Lekkanayakkanpatti village, Marungapuri Taluk	2.62.0	10 years for Rough Stone & 3 years for Gravel from the date of execution of lease deed		
(iv)	Future Proposed quarries					
1	-NII-					

Assistant Director Geology and Mining, Tiruchirappalli.

22 /8/m

161

Rarumugan

ANNEXURE - 4 VAO Letter

சான்று

திருச்சிராப்பள்ளி மாவட்டம், மருங்காபுரி வட்டம், லெக்கநாயக்கன்பட்டி கிராமம் புல எண் 102/1A,1B,1C,1D,1E,1F,1G,1B மற்றும் 11 மொத்த பரப்பு 2.62.00 ஹெக்ட்டர் பட்டா நிலத்தில் இராமையா மகன் ஆறுமுகம் என்பவர் கல் மற்றும் கிராவல் குவாரிக்கு விண்ணப்பித்துள்ளார். மேற்படி பட்டா நிலத்தின் 300 மீட்டர் சுற்றளவில் அங்கீகரிக்கப்பட்ட வீட்டுமனைகள், பள்ளிகள், புராதன சின்னங்கள், மயானங்கள், உயர்மின்னழுத்த கம்பிகள் இல்லை என்றும், 10 மீட்டர் சுற்றளவில் கிராமச் சாலைகள் ஏதும் இல்லை என்றும் விசாரணை மற்றும் புலத் தணிக்கையில் தெரிய வருகிறது என்பதை தெறிவித்துக் கொள்கிறேன்

இப்படிக்கு

கிராம நிர்வாக அலுவலர்

கிராம் நிர்வாக அலுவண், வேக்கநாயக்கன்பட்டி கிராக்,

_ மருங்காபுரி வட்டம். */*

TOPOGRAPHICAL VIEW OF LEKKANAYAKKANPATTI VILLAGE, ROUGH STONE AND GRAVEL QUARRY



NAME OF THE APPLICANT :

Thiru.R.Arumugam,

DISTRICT

Tiruchirappalli,

TALUK

Marungapuri,

VILLAGE

Lekkanayakkanpatti,

S.F.NOs

102/1A, 102/1B, 102/1C, 102/1D, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I,

EXTENT

2.62.0Ha.

Place: Lekkanayakkanpatty
Date: 02-09 2023

VAO SIGN & SEAL

கிராம நிர்வாக அலுவலர். வெக்கநாயக்கள்பட்டி கிராவட்ட

<u>_ மருங்காபுரி வட்டம்.</u>

ANNEXURE - 5 Monitoring Report carried out by NABL Lab



416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-	159	Report Date.	21,10.2023
		The proposed quarry Of Th	iru R. Arumugam	
Customer Name	& Address		3, 102/1C, 102/1A, 102/1E, 102/11 i2.0 Ha,Lekkanayakkanpatti Villa	

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Within Mine Lease Area	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-159	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	10.10.2023	Test Completed on	21.10.2023
Temperature	34°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	72.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	33.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	12.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

THE REPORT *** J. GNANAPRAKASAM

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
Terms and conditions:

Terms and conditions:

(1) The test items will not be retained for more than 15 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test report shall not be reproduced except in full without the written approval of the laboratory (4) Any we for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4. (5) The correctness of the information related to sample(s) in the Test Request Form/Customer letterhead/Email is the customer's responsibility. The laboratory reports the said information in the test report and is not liable for the same.

Page 1 of 1



416/15, Dharga Road, Perungalathur, West Tambaram, Chennaì- 600045. Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23	160	Report Date	21.10.2023
Customer Name	& Address		1B, 102/1C, 102/1A, 102/1E, 102/1I 2.62.0 Ha,Lekkanayakkanpatti Villaş	

AMBIENT AIR QUALITY

Sample Location	A2-Seegampatti Village
Positioned height of Sampler	1.5 M above Ground Level

IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-160	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	10.10.2023	Test Completed on	21.10.2023
Temperature	34°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		- 12

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Report No.

Sample Description

Sampling Procedure

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

OF THE REPORT **** J. GNANAPRAKASAM Please Contact:

Rese

Chennai - 45

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
Terms and conditions:

Terms and conditions:
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Page I of I



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TEST REPORT

Report No.	SARL/23-16	51	Report Date	21.10.2023
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	
Sample Descript	ion	AMBIENT AIR QUALIT		
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		
Sample Location		A1-Within Mine Lease Ar	ea	
Positioned heigh	t of Sampler	1.5 M above Ground Level		
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs
Sample Reference	e No	SARL/A/CHE-161	Sample Received on	16.10.2023
Sample Collected by		LABORATORY	Test Commenced on 16.10.2	
Sample Collected		11.10.2023	Test Completed on	21.10.2023
Temperature		30°C	Relative Humidity	64%
Sample Conditio	n	Fit for Analysis	***	1.11

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	64.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	29.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description AMBIENT AIR QUALITY Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location A2-Seegampatti Village Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-162	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	11.10.2023	Test Completed on	21.10.2023
Temperature	30°C	Relative Humidity	64%
Sample Condition	Fit for Analysis	-	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Chirtiani - 45 GNANAPRAKASAM + D.

Authorized Signatory

Technical Manager

Report Date.

21.10.2023

Please Contact:

Report No.

SARL/23-162

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TEST REPORT

O' ET CLOS I LO	100					

	The proposed quarry Of T	hiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
Customer Ivanie & Address	102/1I over an extent of 2.	62.0 Ha, Lekkanayak kanpatti Vi	illage, Marungapuri			
	Taluk, Tiruchirappalli Disi	trict, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALIT	Y				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location	A3-Naveen Garden Villag	e				
Positioned height of Sampler	1.5 M above Ground Level					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-163	Sample Received on	16.10.2023			
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023			
Sample Collected Date	12.10.2023	Test Completed on	21.10.2023			
Temperature	32°C	Relative Humidity	58%			
Sample Condition	Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m ³	22.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT** J. GNANAPRAKASAM

Authorized Signatory

21.10.2023

Report Date.

Please Contact:

Report No-

SARL/23-163

Technical Manager For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-1	164	Report Date.	21.10.2023	
Customer Name	& Address	The proposed quarry Of Tl survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri	
Sample Descript	ion	AMBIENT AIR QUALIT			
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	l	A4-Kottaiyur Natham Village			
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-164	Sample Received on	16.10.2023	
Sample Collected		LABORATORY	Test Commenced on	16.10.2023	
Sample Collected		12.10.2023	Test Completed on	21.10.2023	
Temperature		32°C	Relative Humidity	58%	
Sample Conditio	n	Fit for Analysis	**		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.6	60
3	Sulphur Dioxide (SO ₂)	1S:5182: Part 02:2001	μg/m³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Verified 21 10 23

END OF THE REPORT T

J. GNANAPRAKASAM

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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TEST REPORT

Report No.	SARL/23-165	Report Da	ite. 21.10.2023
	The	proposed quarry Of Thiru R. Arumugam	

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Naveen Garden Village				
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-165	Sample Received on	16.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023		
Sample Collected Date	13.10.2023	Test Completed on	21.10.2023		
Temperature	32°C	Relative Humidity	43%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 2/10/23

Authorized Signatory

Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam					
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
Customer Name & Address	102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri					
	Taluk, Tiruchirappalli Dist	trict, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY					
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location	A4-Kottaiyur Natham Vill	age				
Positioned height of Sampler	1.5 M above Ground Level					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No.	SARI /A/CHE 166 Sample Received on 16 10 2023					

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-166	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	13.10.2023	Test Completed on	21.10.2023
Temperature	32°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		*

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory J. GNANAPRAKASAM Technical Manager

Report Date.

21.10.2023

Please Contact:

Report No.

SARL/23-166

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientenalytical.com

TEST REPORT

Report No.	SARL/23-	167	Report Dat	e. 21.10.2023		
Customer Name	& Address	and the second s	B, 102/1C, 102/1A, 102/1E, 10 62.0 Ha,Lekkanayakkanpatti V	•		
Sample Descripti	on	AMBIENT AIR QUALITY				
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
		- Wi				
Sample Location		A5-Akkiyampatti Village				
Positioned height	of Sampler	1.5 M above Ground Level				
Customer Referen	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-167	Sample Received on	16.10.2023		
Sample Collected	by	LABORATORY	Test Commenced on	16.10.2023		
Sample Collected	Date	14.10.2023	Test Completed on	21.10.2023		
Temperature		33°C	Relative Humidity	43%		
Sample Condition	1	Fit for Analysis		*		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

***END OF THE REPORT**

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-168	3	Report I	Date.	21.10.2023
Customer Name &	Address		B, 102/1C, 102/1A, 102/1E, 62.0 Ha,Lekkanayakkanpatt		
Sample Description AMBIENT AIR QUALITY					
Sampling Procedure	e	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
_ ×					
Sample Location		A6-Lekka Nayakanpatti V	illage		
Positioned height o	f Sampler	1.5 M above Ground Level			
Customer Reference	e	As per work order	Sampling Procedure		24 hrs
Sample Reference l	No	SARL/A/CHE-168	Sample Received on		16.10.2023
Sample Collected b	y	LABORATORY	Test Commenced on		16.10.2023
Sample Collected D	Date	14.10.2023	Test Completed on		21.10.2023
Temperature		33°C	Relative Humidity		43%
Sample Condition		Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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Chennal - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Please Contact:

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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TEST REPORT

Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		
Sample Location	A5-Akkiyampatti Village		
Positioned height of Sampler	1.5 M above Ground Level		
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-169	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	15.10.2023	Test Completed on	21.10.2023

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	44.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Resea

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

Authorized Signatory

Report Date.

21.10.2023

48%

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No-

Temperature

Sample Condition

SARL/23-169

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

33°C

Fit for Analysis

Terms and conditions:

(1) The test items will not be retained for more than 13 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test report shall not be reproduced except in full without the written approval of the laboratory (4) Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4. (5) The correctness of the information related to sample(s) in the Test Request Form/Customer letterhead/Email is the customer's responsibility. The laboratory reports the said information in the test report and is not liable for the same.

Page 1 of I



416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A6-Lekka Nayakanpatti V	illage		
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-170	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	15.10.2023	Test Completed on	21.10.2023
Temperature	33°C	Relative Humidity	48%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
t	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

21.10.2023

WEND OF THE REPORT *** J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-170

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Akkiyampatti Village			
Positioned height of Sampler	1.5 M above Ground Leve	1		
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-183	Sample Received on	23.10.2023	

As per work order	Sampling 1 recedure	To 1 Tites
SARL/A/CHE-183	Sample Received on	23.10.2023
LABORATORY	Test Commenced on	23.10.2023
17.10.2023	Test Completed on	28.10.2023
33°C	Relative Humidity	50%
Fit for Analysis		
	SARL/A/CHE-183 LABORATORY 17.10.2023 33°C	SARL/A/CHE-183 Sample Received on LABORATORY Test Commenced on 17.10.2023 Test Completed on 33°C Relative Humidity

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	49.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Verified 28 10123

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

Authorized Signatory

J. GNANAPRAKASAM

28.10.2023

Report Date.

Technical Manager

Please Contact:

Report No.

SARL/23-183

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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45 x

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TEST REPORT

Report No.	SARL/23-1	84	Report Date.	28.10.2023		
Customer Name & Address		The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Descript	ion	AMBIENT AIR QUALIT	Y			
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A6-Lekka Nayakanpatti V	illage			
Positioned heigh	t of Sampler	1.5 M above Ground Leve				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-184	Sample Received on	23.10.2023		
Sample Collected	d by	LABORATORY	Test Commenced on	23.10.2023		
Sample Collected	d Date	17.10.2023	Test Completed on	28.10.2023		
Temperature		33°C	33°C Relative Humidity 50%			
Sample Conditio	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	51.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

Authorized Signatory
J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

18

Resea

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientenalytical.com

TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
		62.0 Ha,Lekkanayakkanpatti Vi	Hage, Marungapuri		
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-185	Sample Received on	23.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023		
Sample Collected Date	18.10.2023 Test Completed on 28.10.2023				
Temperature	32°C	Relative Humidity	49%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	43.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit,

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 28 16 23

Authorized Signatory

Report Date.

28.10.2023

Technical Manager

Please Contact:

Report No.

SARL/23-185

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Resea

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1	B, 102/1C, 102/1A, 102/1E, 102	2/1F, 102/1G, 102/1H and		
	102/11 over an extent of 2.	62.0 Ha,Lekkanayakkanpatti Vi	Illage, Marungapuri		
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A6-Lekka Nayakanpatti Village				
Positioned height of Sampler	1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-186	Sample Received on	23.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023		
Sample Collected Date	18.10.2023	Test Completed on	28.10.2023		
Temperature	32°C	Relative Humidity	49%		
Sample Condition	Fit for Analysis	W -5:			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g/m³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μ g /m³	6.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL - Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date:

28.10.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-186

For any Technical Issues & Complaints: vinalinath@shrientanalytical.com

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Page I of 1



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TEST REPORT

Report No.	SARL/23-18	Report Date.	28.10.2023
		The proposed quarry Of Thiru R. Arumugam	
		survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/ 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Vil	

Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description
AMBIENT AIR QUALITY

Sampling Procedure
IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location A3-Naveen Garden Village
Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-187	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	19.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.8	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	7.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 28 10/23

END OF THE REPORT*

J. GHINNAPSIGNIAS AM

Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-	188	Report Date.	28.10.2023			
Customer Name & Address		The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Descript:	ion	AMBIENT AIR QUALIT					
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location		A4-Kottaiyur Natham Village					
Positioned heigh	t of Sampler	1.5 M above Ground Level					
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs			
Sample Reference	e No	SARL/A/CHE-188	Sample Received on	23.10.2023			
Sample Collected		LABORATORY	Test Commenced on	23.10.2023			
Sample Collected Date		19.10.2023	Test Completed on	28.10.2023			
Temperature		32°C	Relative Humidity 46%				
Sample Conditio	n	Fit for Analysis	10 5				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

--- END OF THE REPORT J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

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TEST REPORT

Out Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and			
Customer Name & Address	102/11 over an extent of 2.	62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri	
	Taluk, Tiruchirappalli Dist	rict, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALIT			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A3-Naveen Garden Village			
Positioned height of Sampler	1.5 M above Ground Leve			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-189	Sample Received on	23.10.2023	
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023	
Sample Collected Date	20.10,2023	Test Completed on	28.10.2023	
Temperature	32°C	Relative Humidity	43%	
remperature	32 C	Relative Flairment	10.70	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.1	60
3	Sulphur Dioxide (SO ₂)	1S:5182: Part 02:2001	μg/m³	3.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

28,10,2023

END OF THE REPORT 495 ± 6

Authorized Signatory J. GNANAPRAKASAM

Please Contact:

Report No.

SARL/23-189

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager Terms and conditions:

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TEST REPORT

Report No.	SARL/23-1	90	Report Date	e. 28.10.2023	
Customer Name	& Address	The proposed quarry Of survey nos. 102/1A, 102 102/1I over an extent of Taluk, Tiruchirappalli D	/1B, 102/1C, 102/1A, 102/1E, 102 2.62.0 Ha,Lekkanayakkanpatti Vi	2/1F, 102/1G, 102/1H and	
Sample Descript	tion	AMBIENT AIR QUALITY			
Sampling Proceed	dure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	1	A4-Kottaiyur Natham V	illage		
Positioned heigh	nt of Sampler	1.5 M above Ground Le	1.5 M above Ground Level		
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference	ce No	SARL/A/CHE-190	Sample Received on	23.10.2023	
Sample Collecte		LABORATORY	Test Commenced on	23.10.2023	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.0	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	8.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

& Resp

For Shrient Analytical and Research Labs Pvt. Ltd

Test Completed on

Relative Humidity

THE REPORT***J. GNANAPRAKASAM

Authorized Signatory

28.10.2023

43%

Technical Manager

Please Contact:

Sample Collected Date

Temperature Sample Condition

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

20.10.2023

Fit for Analysis

32°C

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TEST REPORT

Report No.	SARL/23-1	91	Report Date	28.10.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Description AMBIENT AIR QUALITY					
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
		7			
Sample Location		A1-Within Mine Lease Ar	ea		
Positioned heigh	t of Sampler	1.5 M above Ground Leve	I		
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-191	Sample Received on	23.10.2023	
Sample Collected		LABORATORY	Test Commenced on	23.10.2023	
Sample Collected		21.10.2023	Test Completed on	28.10.2023	
Temperature		33°C	33°C Relative Humidity 44%		
Sample Condition Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
l	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	66.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	30.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03,2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

Chennai – 44

For Shrient Analytical and Research Labs Pvt. Ltd & Research

Authorized Signatory

J. GNANAPRAKASAM CEND OF THE REPORT Technical Manager

Please Contact:

43 # PY For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

resport ito:	OMICE 23-	172		
		The proposed quarry Of Thiru R. Ar		
Customer Name	& Address	survey nos. 102/1A, 102/1B, 102/1C	C, 102/1A, 102/1E, 102/1I	F, 102/1G, 102/1H and
Customer Name	& Address	100/11 over an automt of 2.62.0 Lin I	akkanavakkannatti Villa	as Marunganuri

102/11 over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY

IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A2-Seegampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-192	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	21.10.2023	Test Completed on	28.10.2023
Temperature	33°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L~1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd hennai -

Technical Manager

Report Date.

28.10.2023

Please Contact:

Report No.

SART /23-192

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-193	Report Date.	28.10.2023	
		**		
	The proposed quarry C	of Thiru R Arumugam		

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Within Mine Lease Area				
Positioned height of Sampler 1.5 M above Ground Level					
Customer Reference	As per work order	Sampling Procedure	24 hrs		
~ 1 ~ ^ 3I	0 1 7 1 1 10 10 100	G 1 D 1 1	22 10 2022		

Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-193	Sample Received on	23.10.2023	
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023	
Sample Collected Date	22,10,2023	Test Completed on	28.10.2023	
Temperature	32°C	Relative Humidity	46%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	61.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	28.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	$\mu g/m^3$	9.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd g, Rese

Authorized Signatory

Please Contact:

ENDOF THE REPORT* J. GNANAPRAKASAM

Chennar - 45

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Funds of Faddress		62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri		
	Taluk, Tiruchirappalli Dist				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A2-Seegampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-194	Sample Received on	23.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023		
Sample Collected Date	22.10.2023	Test Completed on	28.10.2023		
Temperature	32°C	Relative Humidity	46%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L 1.1)	02

Remarks: Limits; *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

120000

For Shrient Analytical and Research Labs Pvt. Ltd

Report No.

SARL/23-194

Authorized Signatory

Report Date.

28.10.2023

ENDOFTHE REPORT J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimal nath@shrientanalytical.com

Technical Manager

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TEST REPORT

Report No. SARLIZS-	170	Roport Date	04,11.2025		
	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102			
edstomer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri		
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A1-Within Mine Lease Ar	ea			
Positioned height of Sampler	1.5 M above Ground Leve	1			
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-195	Sample Received on	30.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023		
Sample Collected Date	24.10.2023	Test Completed on	04.11.2023		
Temperature	33°C	Relative Humidity	43%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	72.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	33.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	13.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date:

04.11.2023

Report No.

SARL/23-195

Authorized Signatory

Please Contact:

CENTROL THE REPORT *** J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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TEST REPORT

Report No.	SARL/23-	196	Report Date	. 04.11.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Descripti	on	AMBIENT AIR QUALIT			
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A2-Seegampatti Village			
Positioned height	of Sampler	1.5 M above Ground Leve			
Customer Referen	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-196	Sample Received on	30.10.2023	
Sample Collected		LABORATORY	Test Commenced on	30.10.2023	
Sample Collected	Date	24.10.2023	Test Completed on	04.11.2023	
Temperature		33°C	Relative Humidity	43%	
Sample Condition	1	Fit for Analysis	*		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	55.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	5.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd

ENDOFTHE REPORT*** J. GNANAPRAKASAM

Authorized Signatory

Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Tropert Tro	STRUST25	177		Att Post 2 ares	0111112025
Customer Name &	& Address	survey nos 102/1I ove	ed quarry Of Thiru R. Arum 102/1A, 102/1B, 102/1C, 1 an extent of 2.62.0 Ha,Leki chirappalli District, Tamil N	02/1A, 102/1E, 102/1F kanayakkanpatti Villag	

Sample Description AMBIENT AIR QUALITY Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

A1-Within Mine Lease Area	
1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-197	Sample Received on	30.10.2023	
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023	
Sample Collected Date	25.10.2023	Test Completed on	04.11.2023	100
Temperature	33°C	Relative Humidity	46%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	70.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	32.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.2	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	12.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

04 11 2023

Report Date

Please Contact:

Report No.

CARL /23 107

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com
Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-1	198	Report Date.	04.11.2023		
Customer Name	& Address	The proposed quarry Of TI survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri		
Sample Descript	ion	Y				
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	1	A2-Seegampatti Village				
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-198	Sample Received on	30.10.2023		
Sample Collecte		LABORATORY	Test Commenced on	30.10.2023		
Sample Collecte		25.10.2023	Test Completed on	04.11.2023		
Temperature		33°C	Relative Humidity	46%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd

Verifiedo4 11/23

*END OF THE REPORT***

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

For any Technical Issues & Complaints, vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

Report No-	SARL/23-1	199	Report Date	. 04.11.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Description AMBIENT AIR QUALITY						
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A3-Naveen Garden Village	e			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-199	Sample Received on	30.10.2023		
Sample Collected		LABORATORY	Test Commenced on	30.10.2023		
Sample Collected		26.10.2023	Test Completed on	04.11.2023		
Temperature		32°C	Relative Humidity	49%		
Sample Conditio	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.3	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks; Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

J. GNANAPRAKASAM Technical Manager

Authorized Signatory

Please Contact:

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TEST REPORT

Report No-	SARL/23-2	00	Report Date	. 04.11.2023		
Customer Name	& Address	The proposed quarry Of Tl survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Descript	ample Description AMBIENT AIR QUALITY					
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location Positioned heigh		A4-Kottaiyur Natham Vill 1.5 M above Ground Level	age			
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-200	Sample Received on	30.10.2023		
Sample Collected		LABORATORY	Test Commenced on	30.10.2023		
Sample Collected		26.10.2023	Test Completed on	04.11.2023		
Temperature		32°C Relative Humidity 49%		49%		
Sample Conditio	<u> </u>	Fit for Analysis	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03,2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

Authorized Signatory J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and			
Customer Name & Address		62.0 Ha, Lekkanayakkan patti Vi		
	Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A3-Naveen Garden Villag	e		
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-201	Sample Received on	30.10.2023	
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023	
Sample Collected Date	27.10.2023	Test Completed on	04.11.2023	
Temperature	33°C	Relative Humidity	44%	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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Fit for Analysis

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

04.11.2023

Verified 04 11/23

*END OF THE REPORT***

J. GNANAPRAKASAM

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Please Contact:

Report No.

Sample Condition

SARL/23-201

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TEST REPORT

Report No.	SARL/23-202	Report Da	te. 04.11.2023

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.	
Sample Description	AMBIENT AIR QUALITY	
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines	

Sample Location	A4-Kottaiyur Natham Village 1.5 M above Ground Level				
Positioned height of Sampler					
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-202	Sample Received on	30.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023		
Sample Collected Date	27.10.2023	Test Completed on	04.11.2023		
Temperature	33°C	Relative Humidity	44%		
Sample Condition	Fit for Analysis		107		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	51.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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Authorized Signatory

For Shrient Analytical and Research Labs Pvt. Ltd

J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-2	203	Report Date	. 04.11.2023		
Customer Name	& Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Descript	ion	AMBIENT AIR QUALIT	Y			
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
		fig.				
Sample Location	<u> </u>	A5-Akkiyampatti Village				
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-203	Sample Received on	30.10.2023		
Sample Collected		LABORATORY	Test Commenced on	30.10.2023		
Sample Collected		28.10.2023	Test Completed on	04.11.2023		
Temperature		33°C	PC Relative Humidity 46%			
Sample Conditio	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g/m ³	22.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd Razodich

Authorized Signatory

END OF THE REPORT J. GNANAPRAKASAM

For any Technical Issues & Complaints; vimalnath@shrientanalytical.com

Technical Manager

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-204	4	Report Date	e. 04.11.2023			
Customer Name &	t Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Description	n	AMBIENT AIR QUALITY	Y				
Sampling Procedu	re	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
		As-					
Sample Location		A6-Lekka Nayakanpatti Village					
Positioned height	of Sampler	1.5 M above Ground Level					
Customer Referen	ce	As per work order	Sampling Procedure	24 hrs			
Sample Reference	No	SARL/A/CHE-204	Sample Received on	30.10.2023			
Sample Collected		LABORATORY	Test Commenced on	30.10.2023			
Sample Collected	Date	28.10.2023	Test Completed on	04.11.2023			
Temperature		33°C Relative Humidity 46%					
Sample Condition		Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Please Contact:

J. GNANAPRAKASAM

Authorized Signatory

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-:	205	Report Date	e. 04.11.2023				
		The proposed quarry O	The proposed quarry Of Thiru R. Arumugam					
Customer Name & Address			survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
			102/II over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri					
			Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Descript	ion	AMBIENT AIR QUAL	LITY					
Sampling Proced	lure	IS - 5182 (Part - 14: 200	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location		A5-Akkiyampatti Village						
Positioned heigh	t of Sampler	1.5 M above Ground Leve	el					
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs				
Sample Reference	e No	SARL/A/CHE-205	Sample Received on	30.10.2023				
Sample Collected	1 by	LABORATORY	Test Commenced on	30.10.2023				
Sample Collected	d Date	29.10.2023	Test Completed on	04.11.2023				
Temperature		31°C	PC Relative Humidity 52%					
Sample Conditio	n	Fit for Analysis						

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A6-Lekka Nayakanpatti V	illage			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-206	Sample Received on	30.10.2023		
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.2	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date –	mg/m³	BDL (D.L – 1.1)	02

01.03.2023)

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Test Completed on

Relative Humidity

Report Date.

04.11.2023

04.11.2023

52%

Verified 04 11/23

BND OF THE REPORT***

J. GNANAPRAKASAM
Technical Manager

Authorized Signatory

Please Contact:

Report No.

Sample Collected Date

Temperature Sample Condition SARL/23-206

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

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29.10.2023

Fit for Analysis

31°C

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TEST REPORT

Report No. SARL/23-20			Report Date.	11.11.2023
		The proposed quarry Of Thiru F	R. Arumugam	
		survey nos. 102/1A, 102/1B, 10 102/1I over an extent of 2.62.0		

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location A5-Akkiyampatti Village Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-207	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	31.10.2023	Test Completed on	11.11.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

OF THE REPORT*** J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Report No.	SARL/23-20	08	Report Date.	11.11.2023	
Customer Name	& Address	The proposed quarry Of Tl survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri	
Sample Descript	ion	AMBIENT AIR QUALITY			
Sampling Procedure		IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
7-3					
Sample Location	1	A6-Lekka Nayakanpatti V	illage		
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-208	Sample Received on	06.11.2023	
Sample Collecte		LABORATORY	Test Commenced on	06.11.2023	
Sample Collected Date		31.10.2023	Test Completed on	11.11.2023	
THE COMMON					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ <i>g</i> /m³	23.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μ g /m³	7.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

END OF THE REPORT***

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Temperature

Sample Condition

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29°C

Fit for Analysis

J. GNANAPRAKASAM Technical Manager

66%

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-2	09	Report Date	. 11.11.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Descript	ion	AMBIENT AIR QUALIT			
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
		- W1			
Sample Location		A5-Akkiyampatti Village			
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-209	Sample Received on	06.11.2023	
Sample Collected		LABORATORY	Test Commenced on	06.11.2023	
Sample Collected	d Date	01.11.2023	Test Completed on	11.11.2023	
Temperature		31°C	Relative Humidity	55%	
Sample Condition		Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	21.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

s. Res.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

J. GNANAPRAKASAM

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TEST REPORT

Report No.	SARL/23-2	10	Report Date	11.11.2023		
Customer Name & Address		The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Descripti	on	AMBIENT AIR QUALIT	Y			
Sampling Proced	иге	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A6-Lekka Nayakanpatti V	illage			
Positioned height of Sampler		1.5 M above Ground Level				
Customer Referen	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-210	Sample Received on	06.11.2023		
Sample Collected	l by	LABORATORY	Test Commenced on	06.11.2023		
Sample Collected	Date	01.11.2023	Test Completed on	11.11.2023		
Temperature		31°C	Relative Humidity	55%		
Sample Condition		Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182; Part 23:2006	μg/m³	47.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM

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TEST REPORT

Report No.	SARL/23-211		Report Date	11.11.2023		
Customer Name & Address		The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
		102/1I over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri				
		Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	on	AMBIENT AIR QUALIT	Y			
Sampling Procedu	ire	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A3-Naveen Garden Villag	e			
Positioned height	of Sampler	1.5 M above Ground Leve	I			
Customer Referen	ice	As per work order	Sampling Procedure	24 hrs		
Sample Reference	No	SARL/A/CHE-211	Sample Received on	06.11.2023		
Sample Collected	by	LABORATORY	Test Commenced on	06.11.2023		
Sample Collected	Date	02.11.2023	Test Completed on	11.11.2023		
Temperature		30°C	Relative Humidity	62%		
Sample Condition Fit for Analysis						

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-212	Report Date.	11.11.2023	
	The	proced quarry Of Thirn R. Arnmugam		

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kottaiyur Natham Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-212	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	02.11.2023	Test Completed on	11.11.2023
Temperature	30°C	Relative Humidity	62%
Sample Condition	Fit for Analysis	-	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182; Part 02:2001	μg/m³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

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THE REPORT***J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Report No.	SARL/23-	213	Report Date	11.11.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi			
Sample Descript	ion	AMBIENT AIR QUALIT	Y			
Sampling Procedure		IS - 5182 (Part - 14: 2000	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	1	A3-Naveen Garden Village	e			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-213	Sample Received on	06.11.2023		
Sample Collecte		LABORATORY	Test Commenced on	06.11.2023		
Sample Collecte		03.11.2023	Test Completed on	11.11.2023		
Temperature		31°C	Relative Humidity	61%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.0	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	1.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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TEST REPORT

Report No.	SARL/23-2	214	Report Date	. 11.11.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Descript	ion	AMBIENT AIR QUALIT	Y		
Sampling Procedure		IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A4-Kottaiyur Natham Vill	age		
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-214	Sample Received on	06.11.2023	
Sample Collected	1 by	LABORATORY	Test Commenced on	06.11.2023	
Sample Collected	d Date	03.11.2023	Test Completed on	11.11.2023	
Temperature		31°C	Relative Humidity	61%	
Sample Conditio	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

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CHENDOLTHE REPORT J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Report No.	SARL/23-2	15	Report Date.	11.11.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descripti	ion	AMBIENT AIR QUALITY				
Sampling Procedure		IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location Positioned height		A1-Within Mine Lease Ar 1.5 M above Ground Leve				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-215	Sample Received on	06.11.2023		
Sample Collected		LABORATORY	Test Commenced on	06.11.2023		
Sample Collected Date		04.11.2023	Test Completed on	11.11.2023		
Temperature		28°C	Relative Humidity	75%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	56.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

PEND OF THE REPORT J. GNANAPRAKASAM Technical Manager

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Sample Condition

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam			
Customer Name & Address	· ·	B, 102/1C, 102/1A, 102/1E, 102		
	102/11 over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri			
	Taluk, Tiruchirappalli Dist			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
	-21			
Sample Location	A2-Seegampatti Village			
Positioned height of Sampler	1.5 M above Ground Leve			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-216	Sample Received on	06.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023	
Sample Collected Date	04.11.2023	Test Completed on	11.11.2023	
Temperature	28°C	Relative Humidity	75%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	44.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.0	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	5.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT*** J. GNANAPRAKASAM

Authorized Signatory

11.11.2023

Report Date.

Report No.

SARL/23-216

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
Terms and conditions:

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Page I of I



416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location Positioned height of Sampler	A1-Within Mine Lease Ar 1.5 M above Ground Leve			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-217	Sample Received on	06.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023	
Sample Collected Date	05.11.2023	Test Completed on	11.11.2023	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	60.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	28.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

Authorized Signatory

Report Date.

11.11.2023

82%

DOF THE REPORT*** J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

Temperature

Sample Condition

SARL/23-217

26°C

Fit for Analysis

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

& Resea

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-	218	Report Date	. 11.11.2023			
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil				
Sample Descript	ion	AMBIENT AIR QUALIT	AMBIENT AIR QUALITY				
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
		in					
Sample Location	1	A2-Seegampatti Village					
Positioned heigh	t of Sampler	1.5 M above Ground Leve					
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs			
Sample Reference	e No	SARL/A/CHE-218	Sample Received on	06.11.2023			
Sample Collecte		LABORATORY	Test Commenced on	06.11.2023			
Sample Collecte	d Date	05.11.2023	Test Completed on	11.11.2023			
Temperature		26°C	26°C Relative Humidity 82%				
Sample Conditio	n	Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Please Contact:

J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager Terms and conditions:

& Res

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Page 1 of 1



416/15, Dharga Road, Perungalathur, West Tambaram, Cheллаі- 600045. Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and			
Customer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi		
	rict, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
7-3-				
Sample Location	A1-Within Mine Lease Are	ea		
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-219	Sample Received on	13.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023	
Sample Collected Date	07.11.2023	Test Completed on	18.11.2023	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	58.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

Authorized Signatory

Report Date.

18.11.2023

68%

Please Contact:

Report No.

Temperature Sample Condition SARL/23-219

30°C

Fit for Analysis

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

Chennai - 45

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Page 1 of 1



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TEST REPORT

		The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Name & Address		B, 102/1C, 102/1A, 102/1B, 102 62.0 Ha,Lekkanayakkanpatti Vi	•			
		, ,	mage, Marungapuri			
Sample Description	Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY					
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
	111					
Sample Location	A2-Seegampatti Village					
Positioned height of Sampler	1.5 M above Ground Leve					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-220	Sample Received on	13.11.2023			
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023			
Sample Collected Date	07.11.2023	Test Completed on	18.11.2023			
Temperature	30°C	Relative Humidity	68%			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

National Ambient air quality standards from CPCB, BDL-Below detectable limit. DL –Detectable limit.

Re

Fit for Analysis

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

J. GNANAPRAKASAM

Please Contact:

Report No.

Sample Condition

SARL/23-220

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager Terms and conditions:

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18.11.2023

Report Date.



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TEST REPORT

	The proposed quarry Of T			
Customer Name & Address	survey nos. 102/1A, 102/1	B, 102/1C, 102/1A, 102/1E, 102	2/1F, 102/1G, 102/1H and	
Customer runne & runness		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri	
Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALIT			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A1-Within Mine Lease Area			
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-221	Sample Received on	13.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023	
Sample Collected Date	08.11.2023	Test Completed on	18.11.2023	
Temperature	28°C	Relative Humidity	77%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	60.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	8.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 18 [1] 23

ENDOF THE REPORT***

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Report Date.

18.11.2023

Please Contact:

Report No.

SARL/23-221

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Page 1 of 1



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TEST REPORT

Report No.	SARL/23-22	2	Report Date.	18.11.2023
Customer Name	& Address		niru R. Arumugam B, 102/1C, 102/1A, 102/1E, 102/1F 62.0 Ha,Lekkanayakkanpatti Villag	

Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY Sample Description IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A2-Seegampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-222	Sample Received on	13.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023	
Sample Collected Date	08.11.2023	Test Completed on	18.11.2023	
Temperature	28°C	Relative Humidity	77%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182; Part 23:2006	μg/m³	46.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	22.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

18.11.2023

J. GNANAPRAKASAM

Authorized Signatory

Please Contact:

Report No.

For any Technical Issues & Complaints, vimalnath@shrientanalytical.conTechnical Manager

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALIT			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location Positioned height of Sampler	A3-Naveen Garden Villag 1.5 M above Ground Level	e		
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-223	Sample Received on	13.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023	
Sample Collected Date	09.11.2023	Test Completed on	18.11.2023	
Temperature	30°C	Relative Humidity	63%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	10.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit, DL - Detectable limit,

& Res

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

Authorized Signatory

18.11.2023

Report Date.

Please Contact:

Report No.

SARL/23-223

J. GNANAPRAKASAM S' # ρ¥ For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Page 1 of 1



416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045.

Phone No; 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientenalytical.com

TEST REPORT

224	Report But	10.11.2025		
————— ————————————————————————————————	η-			
The proposed quarry Of Thiru R. Arumugam				
survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
102/11 over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri				
Taluk, Tiruchirappalli Dist	trict, Tamil Nadu.			
AMBIENT AIR QUALITY				
IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
A4-Kottaiyur Natham Vill	age			
1.5 M above Ground Level				
As per work order	Sampling Procedure	24 brs		
SARL/A/CHE-224	Sample Received on	13.11.2023		
LABORATORY	Test Commenced on	13.11.2023		
09.11.2023	.11.2023 Test Completed on 18.11.2023			
30°C	Relative Humidity	63%		
Fit for Analysis				
	The proposed quarry Of To survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist AMBIENT AIR QUALITY IS – 5182 (Part – 14: 2000 & A4-Kottaiyur Natham Vill 1.5 M above Ground Level As per work order SARL/A/CHE-224 LABORATORY 09.11.2023 30°C	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Vi Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPC A4-Kottaiyur Natham Village 1.5 M above Ground Level As per work order SARL/A/CHE-224 Sample Received on LABORATORY Test Commenced on 09.11.2023 Test Completed on Relative Humidity		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	21.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m ³	7.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

g Rese

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

18.11.2023

Verified 11/23

Report No.

SARL/23-224

END OF THE REPORT

Please Contact:

J. GNANAPRAKASAM

Authorized Signatory

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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TEST REPORT

Report No.	SARL/23-22	25	Report Date	. 18.11.2023		
		The proposed quarry Of T				
Customer Name & Address		survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
		102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri				
		Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description AMBIENT AIR QUALITY						
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	1	A3-Naveen Garden Villag	ge			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	ce No	SARL/A/CHE-225	Sample Received on	13.11.2023		
Sample Collecte	d by	LABORATORY	Test Commenced on	13.11.2023		
Sample Collecte	d Date	10.11.2023	Test Completed on	18.11.2023		
Temperature		29°C	Relative Humidity	70%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL-Below detectable limit. DL-Detectable limit.

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hennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

J. GNANAPRAKASAM

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and			
Customer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi		
	Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALIT	Y		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A4-Kottaiyur Natham Village			
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-226	Sample Received on	13.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023	
Sample Collected Date	10.11,2023	Test Completed on	18.11.2023	
Temperature	29°C	Relative Humidity	70%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

Опеллај.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 18 11/23

END OF THE REPORT

Authorized Signatory

Report Date.

18.11.2023

J. GNANAPRAKASAM

Please Contact:

Report No.

SARL/23-226

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com Technical Manager Terms and conditions:

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-227	Sample Received on	13.11.2023		
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023		
Sample Collected Date	11.11.2023	Test Completed on	18.11.2023		
Temperature	29°C	Relative Humidity	65%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

04.11.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

Sample Condition

SARL/23-227

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Fit for Analysis

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri						
Sample Description	AMBIENT AIR QUALIT	Taluk, Tiruchirappalli District, Tamil Nadu.					
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines						
Sample Location	A6-Lekka Nayakanpatti V	illage					
Positioned height of Sampler	1.5 M above Ground Level						
Customer Reference	As per work order	Sampling Procedure	24 hrs				
Sample Reference No	SARL/A/CHE-228	Sample Received on	13.11.2023				
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023				
Sample Collected Date	11.11.2023	Test Completed on	18.11.2023				
Temperature	29°C						
Sample Condition	Fit for Analysis	1					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	56.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 04 11/23

Authorized Signatory

THE REPORT*** J. GNANAPRAKASAM
Technical Manager

Please Contact:

Report No.

SARL/23-228

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Page I of I

04.11.2023

Report Date.



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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Panie & Address		62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri		
	Taluk, Tiruchirappalli Dist	rict, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALIT	Y			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
	11-				
Sample Location	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-229	Sample Received on	13.11.2023		
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023		
Sample Collected Date	12.11.2023	Test Completed on	18.11.2023		
Temperature	29°C	Relative Humidity	56%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

18.11.2023

END OF THE REPORT J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-229

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

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TEST REPORT

230	Report Ban	0.11.2023				
The state of the s						
survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and						
I		illage, Marungapuri				
AMBIENT AIR QUALITY						
IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines						
A6-Lekka Nayakanpatti V	illage					
1.5 M above Ground Level						
As per work order	Sampling Procedure	24 hrs				
SARL/A/CHE-230	Sample Received on	13.11.2023				
LABORATORY	Test Commenced on	13.11.2023				
12.11.2023 Test Completed on 18.11.2023						
29°C						
Fit for Analysis						
	The proposed quarry Of T survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dis AMBIENT AIR QUALIT IS – 5182 (Part – 14: 2000 & A6-Lekka Nayakanpatti V 1.5 M above Ground Level As per work order SARL/A/CHE-230 LABORATORY 12.11.2023 29°C	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti V. Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPC A6-Lekka Nayakanpatti Village 1.5 M above Ground Level As per work order Sampling Procedure SARL/A/CHE-230 Sample Received on LABORATORY Test Commenced on 12.11.2023 Test Completed on Relative Humidity				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

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Chennai # 41

48 * 67

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 18 11/23

END OF THE REPORT

Authorized Signatory

Report Date.

18.11.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-230

For any Technical Issues & Complaints: virmal nath@shrientanalytical.com

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam					
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
		62.0 Ha,Lekkanayakkanpatti Vi	ilage, Marungapuri			
	Taluk, Tiruchirappalli Dist					
Sample Description	AMBIENT AIR QUALITY					
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location	A5-Akkiyampatti Village					
Positioned height of Sampler	1.5 M above Ground Leve					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-231	Sample Received on	20.11.2023			
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023			
Sample Collected Date	14.11.2023 Test Completed on 26.11.2023					
Temperature	25°C	Relative Humidity	77%			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.8	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	7.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

ReFor Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

26.11.2023

48 --- END OF THE REPORT*** J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

Sample Condition

SARL/23-231

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

Fit for Analysis

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Page 1 of 1



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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Lekka Nayakanpatti Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-232	Sample Received on	20.11.2023	
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023	
Sample Collected Date	14.11.2023	Test Completed on	26.11.2023	
Temperature	25°C	Relative Humidity	77%	200
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	25.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

26.11.2023

THE REPORT*** J. GNANAPRAKASAM

Report No.

SARL/23-232

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
Terms and conditions:

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com
Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description AMBIENT AIR QUALITY
Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Akkiyampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-233	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	15.11.2023	Test Completed on	26.11.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26 11/23

END OF THE REPORT

Authorized Signatory

Report Date.

26.11.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-233

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Positioned height of Sampler	1.5 M above Ground Leve		
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-234	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	15.11.2023	Test Completed on	26.11.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m ³	6.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Cnennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

26.11.2023

Please Contact:

Report No.

SARL/23-234

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

Terms and conditions:

J. GNANAPRAKASAM

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END OF THE REPORT

Page 1 of 1



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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

	51105.25	
ı		The proposed quarry Of Thiru R. Arumugam
	Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and
Ì	Customer Name & Address	102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri

Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description
AMBIENT AIR QUALITY

Sampling Procedure
IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Naveen Garden Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-235	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	16.11.2023	Test Completed on	26.11.2023
Temperature	31°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26 11 23

Report No.

SARL/23-235

Authorized Signatory

Report Date.

26.11.2023

Please Contact:

Technical Manager

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-2	236	Report Date	26.11.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descript	ion	AMBIENT AIR QUALIT	AMBIENT AIR QUALITY			
Sampling Proced	lure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003),	CPCB Guide lines		
Sample Location		A4-Kottaiyur Natham Vill	age			
Positioned heigh	t of Sampler	1.5 M above Ground Leve				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-236	Sample Received on	20.11.2023		
Sample Collected	d by	LABORATORY	Test Commenced on	20.11.2023		
Sample Collected	d Date	16.11.2023	Test Completed on	26.11.2023		
Temperature		31°C Relative Humidity 52%		52%		
Sample Condition Fit for Analysis						

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

PENDOP THE REPORT ... J. GNANAPRAKASAM Technical Manager

Please Contact:

YS + PT For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-	237	Report Date	. 26.11.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Descript	ion	AMBIENT AIR QUALIT	Y		
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	1	A3-Naveen Garden Village			
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-237	Sample Received on	20.11.2023	
Sample Collected	d by	LABORATORY	Test Commenced on	20.11.2023	
Sample Collected	d Date	17.11.2023	Test Completed on	26.11.2023	
Temperature		32°C	Relative Humidity	56%	
Sample Conditio	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

---ENDOFTHE REPORT --- J. GNANAPRAKASAM 45 + 9

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For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrlentanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

Report No. SARL/23-	238	Report Date	e. 26.11.2023			
		H :				
	The proposed quarry Of T					
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
Customer Funde & Rediress		.62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri			
	Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Description	AMBIENT AIR QUALIT	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location	A4-Kottaiyur Natham Vill	age				
Positioned height of Sampler	1.5 M above Ground Leve	1				
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-238	Sample Received on	20.11.2023			
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023			
Sample Collected Date	17.11.2023	Test Completed on	26.11.2023			
Temperature	32°C	Relative Humidity	56%			
Sample Condition	Fit for Analysis	11	1 10			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Verified 26 (1)23

For Shrient Analytical and Research Labs Pvt. Ltd

S *** END OF THE REPORT*** J. GNANAPRAKASAM

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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TEST REPORT

Report No-	SARL/23-2	39	Report Date	26.11.2023		
Customer Name	& Address	· ·	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descripti	ion	AMBIENT AIR QUALIT				
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A1-Within Mine Lease Area				
Positioned height	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-239	Sample Received on	20.11.2023		
Sample Collected	l by	LABORATORY	Test Commenced on	20.11.2023		
Sample Collected Date		18.11.2023	Test Completed on	26.11.2023		
Temperature		31°C	Relative Humidity	55%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	68.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	31.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182; Part 02:2001	μ g /m³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit, DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

J. GNANAPRAK**ASAM**

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager
Terms and conditions: Terms and conditions:

b Elni

Chennai - 45

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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com

Website : www.shrientanalytical.com

TEST REPORT

Di HCLi 25	240	report But	20.11.2043		
,	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Prante & Address	102/1I over an extent of 2.62.0 Ha, Lekkanayakkanpatti Village, Marungapuri				
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A2-Seegampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-240	Sample Received on	20.11.2023		
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023		
Sample Collected Date	18.11.2023	Test Completed on	26.11.2023		
Temperature	31°C	Relative Humidity	55%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.0	80_
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified26 11/23

J. GNANAPRAKASAM

Authorized Signatory

Report Date

26.11.2023

Technical Manager

Please Contact:

Report No.

Sample Condition

SARL/23-240

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Fit for Analysis

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TEST REPORT

Report No.	SARL/23-	241	Report Date	26.11.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	· ·	
Sample Description AMBIENT AIR QUALITY					
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A1-Within Mine Lease Ar	ea		
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere		A 1 4	C	241	
		As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-241	Sample Received on	20.11.2023	
Sample Collected	d by	LABORATORY	Test Commenced on	20.11.2023	
Sample Collected	d Date	19.11.2023	Test Completed on	26.11.2023	
Temperature		28°C	Relative Humidity	76%	
Sample Conditio	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	73.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	34.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	13.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

S *** END OF THE REPORT***

J. GNANAPRAKAS**AM**

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
Terms and conditions:

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Page 1 of I



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TEST REPORT

	The proposed quarry Of T	hiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and					
Customer Name & Address	102/1I over an extent of 2.	62.0 Ha,Lekkanayakkanpatti Vi	illage, Marungapuri			
	Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Description	AMBIENT AIR QUALIT	Y				
Sampling Procedure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003	, CPCB Guide lines			
Sample Location	A2-Seegampatti Village					
Positioned height of Sampler	1.5 M above Ground Leve	1				
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-242	Sample Received on	20.11.2023			
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023			
Sample Collected Date	19.11.2023	Test Completed on	26.11.2023			
Temperature	28°C	Relative Humidity	76%			
Sample Condition	Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182; Part 02:2001	μg/m³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

Verified 26 11/23

Res For Shrient Analytical and Research Labs Pvt. Ltd

. Authorized Signatory

Report Date.

26.11.2023

END OF THE REPORT***

J. GNANAPRAKASAM
Technical Manager

Please Contact:

Report No.

SARL/23-242

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-2	243	Report Date	02.12.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102. 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descript	ion	AMBIENT AIR QUALIT				
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location Positioned heigh		A1-Within Mine Lease Ar 1.5 M above Ground Leve				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-243	Sample Received on	27.11.2023		
Sample Collected	d by	LABORATORY	Test Commenced on	27.11.2023		
Sample Collected	d Date	21.11.2023	Test Completed on	02.12.2023		
Temperature		32°C	Relative Humidity 53%			
Sample Conditio	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	71.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	32.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	12.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

150 ***END OF THE REPORT*** Please Contact:

& Reso

J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com Technical Manager Terms and conditions: (1) The test items will not be retained for more than 15 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000	& Part – V: Reaffirmed - 2003)	, CPCB Guide lines		
Sample Location	A2-Seegampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve	1			
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-244	Sample Received on	27.11.2023		
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Test Completed on

Relative Humidity

S *** J. GNANAPRAKASAM Technical Manager

02.12.2023

02.12.2023

53%

Report Date.

Please Contact:

Report No.

Sample Collected Date

Temperature Sample Condition SARL/23-244

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

Chennai -

21.11.2023

Fit for Analysis

32°C

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TEST REPORT

- 1		
	Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A1-Within Mine Lease Area	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-245	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	22.11.2023	Test Completed on	02.12.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
l	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	56.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	8.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

J. GNANAPRAKASAM

Authorized Signatory

02.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-245

For any Technical Issues & Complaints: vimal nath@shrientanalytical.com Technical Manager Terms and conditions:

Chennai -

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Seegampatti Village		
Positioned height of Sampler	1.5 M above Ground Level		Thir
		241	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-246	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	22.11.2023	Test Completed on	02.12.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182; Part 06:2006	μg/m³	8.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Resea

For Shrient Analytical and Research Labs Pvt. Ltd

THE REPORT***

Authorized Signatory

J. GNANAPRAKASAM

02.12.2023

Report Date:

Please Contact:

Report No.

SARL/23-246

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TEST REPORT

Report No.	SARL/23-2	47	Report Date	02.12.2023		
		TI	Fl.: D. A			
Customer Name	& Address	The proposed quarry Of 7 survey nos. 102/1A, 102/102/1I over an extent of 2 Taluk, Tiruchirappalli Di	1B, 102/1C, 102/1A, 102/1E, 102 2.62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri		
Sample Descript	rion	AMBIENT AIR QUALIT	ГУ			
Sampling Proceed	dure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
		-74				
Sample Location	า	A3-Naveen Garden Villa	ge			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	ce No	SARL/A/CHE-247	Sample Received on	27.11.2023		
Sample Collecte		LABORATORY	Test Commenced on	27.11.2023		
Sample Collected Date		23.11.2023	Test Completed on	02.12.2023		
Temperature		29°C	°C Relative Humidity 68%			
Sample Condition	on	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM

Report Date.

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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TEST REPORT

Report No.	SARL/23-24	8	Report Date	. 02.12.2023		
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Descript	ion	AMBIENT AIR QUALITY				
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	1	A4-Kottaiyur Natham Villa	age			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference No		SARL/A/CHE-248	Sample Received on	27.11.2023		
Sample Collecte		LABORATORY	Test Commenced on	27.11.2023		
Sample Collected Date		23.11.2023	Test Completed on	02.12.2023		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

--- END OF THE REPORTAN Ouys + Pi

Authorized Signatory

68%

J. GNANAPRAKASAM Technical Manager

Please Contact:

Temperature

Sample Condition

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Terms and conditions:

29°C

Fit for Analysis

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A3-Naveen Garden Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-249	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	24.11.2023	Test Completed on	02.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g/m ³	24.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.4	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	10.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT

J. GNANAPRAKASAM

02.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-249

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com Technical Manager

Chennal - 45

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TEST REPORT

Report No.	SARL/23-25	Report Date.	02.12.2023
		The proposed quarry Of Thiru R. Arumugam	
Customer Name	& Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F	

102/11 over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A4-Kottaiyur Natham Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-250	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	24.11.2023	Test Completed on	02.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g/m ³	50.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

END OF THE REPORT

Authorized Signatory

For Shrient Analytical and Research Labs Pvt. Ltd

Please Contact:

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager Terms and conditions:

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TEST REPORT

Report No.	SARL/23-2	51	Report Date.	02.12.2023
a	0.444	The proposed quarry Of survey nos. 102/1A, 102	Thiru R. Arumugam /1B, 102/1C, 102/1A, 102/1E, 102/1F	F, 102/1G, 102/1H and
Customer Name	& Address	102/1I over an extent of	2.62.0 Ha,Lekkanayakkanpatti Villag	ge, Marungapuri

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A5-Akkiyampatti Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-251	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	25.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

J. GNANAPRAKASAM Technical Manager

02.12.2023

Report Date.

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri		
	Taluk, Tiruchirappalli Dist				
Sample Description	AMBIENT AIR QUALIT				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A6-Lekka Nayakanpatti V	illage			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-252	Sample Received on	27.11.2023		
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023		
Sample Collected Date	25.11.2023	Test Completed on	02.12.2023		
Temperature	29°C Relative Humidity 67%				
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Verified 2/2/23

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

02.12.2023

J. GNANA

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-252

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TEST REPORT

Report No.	SARL/23-2	53	Report Date	02.12.2023
Customer Name	& Address	The proposed quarry Of 2 survey nos. 102/1A, 102/1 102/1I over an extent of 2 Taluk, Tiruchirappalli Di	1B, 102/1C, 102/1A, 102/1E, 102/11 2.62.0 Ha,Lekkanayakkanpatti Villaş	F, 102/1G, 102/1H and ge, Marungapuri
Sample Description		AMBIENT AIR QUALITY		
Sampling Procedure		IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		
Sample Location	1	A5-Akkiyampatti Village		
Positioned heigh	t of Sampler	1.5 M ghove Ground Level		

1 ositioned neight of bampier	1.5 W above Ground Level		
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-253	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	26.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.3	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μ g /m³	8.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits; *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Re.

For Shrient Analytical and Research Labs Pvt. Ltd

S + TAEND OF THE REPORT***

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

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For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

	THE LOCAL PARTY
	The proposed quarry Of Thiru R. Arumugam
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and
	102/II over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri
	Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY

Sample Location A6-Lekka Nayakanpatti Village
Positioned height of Sampler 1.5 M above Ground Level

IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-254	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	26.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
i	Particulate Matter less than 10 micron size (PM ₃₀)	IS:5182: Part 23:2006	μg/m³	55.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

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SARI /23-254

A. Share

For Shrient Analytical and Research Labs Pvt. Ltd

.

Authorized Signatory

Please Contact:

Report No.

Sampling Procedure

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

J. GNANAPRAKASAM
Technical Manager

02.12.2023

Report Date.

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TEST REPORT

Report No.	SARL/23-255		Report Date.	09.12.2023
	Тт	ne proposed quarry Of Thiru R. Arumugam		
		menungs 102/14 102/1R 102/1C 102/14		F 102/1G 102/1H and

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Akkiyampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-255	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	28.11.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g/m ³	56.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL - Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

*END OF THE REPORT**

Authorized Signatory

J. GNANAPRAKASAM

Technical Manager

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TEST REPORT

V.	
Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR OUALITY

Sample Location	A6-Lekka Nayakanpatti Village
Positioned height of Sampler	1.5 M above Ground Level

IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-256	Sample Received on	04.12.2023	
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023	
Sample Collected Date	28.11.2023	Test Completed on	09.12.2023	
Temperature	29°C	Relative Humidity	66%	(÷
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	58.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	28.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB_BDL-Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

09.12.2023

WEND OF THE REPORT ... J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

Sampling Procedure

SARL/23-256

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TEST REPORT

Report No.	SARL/23-2	257	Report Date.	09.12.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102/62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descripti	ion	AMBIENT AIR QUALIT	Y			
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A5-Akkiyampatti Village				
Positioned height	t of Sampler	1.5 M above Ground Leve				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-257	Sample Received on	04.12.2023		
Sample Collected		LABORATORY				
Sample Collected Date 29.11		29.11.2023	1.2023 Test Completed on			
Temperature		29°C	Relative Humidity	69%		
Sample Condition		Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

J. GNANAPRAKASAM

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Page 1 of 1



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TEST REPORT

Report No.	SARL/23-2	.58	Report Date	. 09.12.2023		
		The proposed quarry Of T	hiru R Arumugam			
Customer Name	& Address	survey nos. 102/1A, 102/1	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descripti	ion	AMBIENT AIR QUALIT				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A6-Lekka Nayakanpatti V	illage			
Positioned height	t of Sampler	1.5 M above Ground Leve	1			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-258	Sample Received on	04.12.2023		
Sample Collected	l by	LABORATORY	Test Commenced on	04.12.2023		
Sample Collected Date		29.11.2023	1.2023 Test Completed on			
Temperature		29°C	Relative Humidity	69%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT

Please Contact:

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J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Report No.	SARL/23-2	159	Report Date	09.12.2023	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Descripti	ion	AMBIENT AIR QUALIT			
Sampling Proced			& Part – V: Reaffirmed - 2003),	CPCB Guide lines	
Sampling 110000	iure	13 - 3102 (1 art - 14. 2000	ce l'art - v. Reallithed 2005)	Of OB Galet Hills	
Sample Location		A3-Naveen Garden Village	9		
Positioned heigh	t of Sampler	1.5 M above Ground Leve			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-259	Sample Received on	04.12.2023	
Sample Collected		LABORATORY	Test Commenced on	04.12.2023	
Sample Collected		30.11.2023	Test Completed on	09.12.2023	
Temperature		24°C	C Relative Humidity 90%		
Sample Conditio	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

thennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-260		Report Date	. 09.12.2023	
Customer Name &	Address	The proposed quarry Of Th survey nos. 102/1A, 102/11 102/1I over an extent of 2.0 Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri	
Sample Description		AMBIENT AIR QUALITY			
Sampling Procedur	e	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A4-Kottaiyur Natham Villa	age		
Positioned height o	f Sampler	1.5 M above Ground Level			
Customer Reference	e	As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-260	Sample Received on	04.12.2023	
Sample Collected b		LABORATORY	Test Commenced on	04.12.2023	
Sample Collected I		30.11.2023	Test Completed on	09.12.2023	
Temperature		24°C	Relative Humidity	90%	
Sample Condition		Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	12.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL-Below detectable limit. DL-Detectable limit.

& Res

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

Please Contact:

For any Technical Issues & Complaints vimalination shrientanalytical.com Technical Manager

J. GNANAPRAKASAM

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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

	The proposed quarry Of T				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri		
	Taluk, Tiruchirappalli Dis				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A3-Naveen Garden Villag	e			
Positioned height of Sampler	1.5 M above Ground Leve	1			
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-261	Sample Received on	04.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023		
Sample Collected Date	01.12.2023	Test Completed on	09.12.2023		
Temperature	31°C	Relative Humidity	59%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

& Reson

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 09 12/23

Chennai - 45

Authorized Signatory

J. GNANAPRAKASAM
.... Technical Manager

09.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-261

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-262	Re	port Date.	09.12.2023		
	The proposed quarry	Of Thiru R. Arumugam				
Custom on Nome & Ade	survey nos. 102/1A,	102/1B, 102/1C, 102/1A, 102	2/1E, 1 <mark>02/</mark> 1F	F, 102/1G, 102/1H and		
Customer Name & Add	102/1I over an exten	102/II over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri				
	Taluk, Tiruchirappal	li District, Tamil Nadu.				
Sample Description	AMBIENT AIR QU	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14:	2000 & Part - V: Reaffirme	d - 2003), C	PCB Guide lines		
Sample Location	A4-Kottaiyur Nathar	n Village				
Positioned height of Sa	mpler 1.5 M above Ground	Level				
Customer Reference	As per work order	Sampling Proce	dure	24 hrs		
Sample Reference No	SARL/A/CHE-262	Sample Receive	ed on	04.12.2023		
Sample Collected by	LABORATORY	Test Commence	ed on	04.12.2023		
Sample Collected Date	01.12.2023	Test Completed	on	09.12.2023		
Temperature	31°C	Relative Humid	ity	59%		
Sample Condition	Fit for Analysis	,				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Please Contact:

For Shrient Analytical and Research Labs Pvt. Ltd cal & Resea

Authorized Signatory

THE REPORT*** OF END OF

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

00 10 2022

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TEST REPORT

Report No.	SARL/23-2	263	Report Date	. 09.12.2023		
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Descripti	ion	AMBIENT AIR QUALITY				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003)	, CPCB Guide lines		
Sample Location		A1-Within Mine Lease Ar	ea			
Positioned height	t of Sampler	1.5 M above Ground Leve				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-263	Sample Received on	04.12.2023		
Sample Collected		LABORATORY	Test Commenced on	04.12.2023		
Sample Collected		02.12.2023	Test Completed on	09.12.2023		
Temperature		29°C	Relative Humidity	67%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	64.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	29.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL - Detectable limit.

8 Resea

For Shrient Analytical and Research Labs Pvt. Ltd

Chennai - 45

Authorized Signatory

Please Contact:

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimal nath@shrientanalytical.comTechnical Manager

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TEST REPORT

Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	
Sample Description	AMBIENT AIR QUALIT		
Sampling Procedure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003)	, CPCB Guide lines
Sample Location	A2-Seegampatti Village		
Positioned height of Sampler	1.5 M above Ground Level		
Customer Reference	As per work order	Sampling Procedure	24 hrs
	As per work order SARL/A/CHE-264	Sampling Procedure Sample Received on	24 hrs 04.12.2023
Sample Reference No		Sampling Procedure Sample Received on Test Commenced on	
Customer Reference Sample Reference No Sample Collected by Sample Collected Date	SARL/A/CHE-264	Sample Received on	04.12.2023

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	55.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 09/12/23

MEND OF THE REPORT

Authorized Signatory

Report Date.

09.12.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

Sample Condition

SARL/23-264

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

Fit for Analysis

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TEST REPORT

4	
Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

A1-Within Mine Lease Area Sample Location Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-265	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	03.12.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis	· · · · · · · · · · · · · · · · · · ·	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	68.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	31.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory J. GNANAPRAKASAM

09.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-265

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager Terms and conditions:

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com
Website: www.shrientanalytical.com

TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102			
	- I	62.0 Ha,Lekkanayakkanpatti Vi	nage, marungapuri		
	Taluk, Tiruchirappalli Dist				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A2-Seegampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-266	Sample Received on	04.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	04.12,2023		
Sample Collected Date	03.12.2023 Test Completed on 09.12.2023				
Temperature	29°C Relative Humidity 67%				
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.8	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	7.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

& Research

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 09 12 23

Chennai - 45) & Co

Authorized Signatory

Report Date.

09.12.2023

J. GNANAPRAKASAM
Technical Manager

Please Contact:

Report No.

SARL/23-266

For any Technical Issues & Complaints: vimal nath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

resport ivo:	5/ HdL/25-20/			
		The proposed quarry Of Thiru R. Arumugam		
Courts on Norma	O. A. dalman	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 1	02/1F, 102/1G, 102/1H an	ıd
Customer Name	& Address	102/11 over an extent of 2.62.0 Ha, Lekkanayakkan patti		

Sample Description AMBIENT AIR QUALITY
Sampling Procedure IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Location	A1-Within Mine Lease Area	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-267	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	05.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	58%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	59.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

8. Research

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date

16.12.2023

Verified 16 12/23

END OF THE REPORT

Authorized Signatory

J. GNANAPRAKASAM

Technical Manager

Please Contact:

Report No

CADI /22 267

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri				
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALIT	Y			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A2-Seegampatti Village				
Positioned height of Sampler	1.5 M above Ground Leve	1			
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-268	Sample Received on	11.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023		
Sample Collected Date	05.12.2023 Test Completed on 16.12.2023				
Temperature	31°C Relative Humidity 58%				
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	6.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

& Reses

Chennai - 45

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For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

Please Contact:

Report No.

SARL/23-268

9/148 For any Technical Issues & Complaints: vimalinath@shrientanalytical.com Terms and conditions:

J. GNANAPRAKASAM Technical Manager

16.12.2023

Report Date.

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam			
Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102		
		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri	
	Taluk, Tiruchirappalli Dist			
Sample Description	AMBIENT AIR QUALIT	Y		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	A1-Within Mine Lease Area			
Positioned height of Sampler	1.5 M above Ground Level			
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-269	Sample Received on	11.12.2023	
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023	
Sample Collected Date	06.12.2023 Test Completed on 16.12.2023			
Temperature	31°C	Relative Humidity	59%	
Sample Condition	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	65.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	30.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

a Res

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Verified /b 12/23

END OF THE REPORT

Authorized Signatory

Report Date.

16.12.2023

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-269

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-21	70	Report Date,	16.12.2023		
Customer Name &	k Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vil	TIF, 102/IG, 102/IH and lage, Marungapuri		
Sample Description	on	AMBIENT AIR QUALITY				
Sampling Procedu	ire	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A2-Seegampatti Village				
Positioned height	of Sampler	1.5 M above Ground Level				
Customer Referer	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference No		SARL/A/CHE-270	Sample Received on	11.12.2023		
Sample Collected by		LABORATORY	Test Commenced on	11.12.2023		
Sample Collected Date		06.12.2023	Test Completed on	16.12.2023		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m ³	6.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits; *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai -

31°C

Fit for Analysis

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

END OF THE REPORT*** Authorized Signatory

59%

Please Contact:

Temperature

Sample Condition

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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TEST REPORT

Report No.	SARL/23-	271	Report Date	e. 16.12.2023	
Customer Name	& Address		1B, 102/1C, 102/1A, 102/1E, 102 2.62.0 Ha,Lekkanayakkanpatti Vi		
Sample Descripti	ion	AMBIENT AIR QUALIT	ſΥ		
Sampling Procedure IS – 5182 (Part – 14			Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		
Sample Location		A3-Naveen Garden Villag	ge		
Positioned height	t of Sampler	1.5 M above Ground Level			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-271	Sample Received on	11.12,2023	
Sample Collected by		LABORATORY	Test Commenced on	11.12.2023	
Sample Collected Date		07.12.2023	Test Completed on	16.12.2023	
Temperature		31°C	Relative Humidity	57%	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	25.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μ g /m³	9.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd B Researce

Chennai - 45

Fit for Analysis

J. GNANAPRAKASAM

Please Contact:

Sample Condition

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14; 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kottaiyur Natham Vill	age	
Positioned height of Sampler	1.5 M above Ground Level		
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-272	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	07.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	57%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

J. GNANAPRAKASAM

16.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-272

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager Terms and conditions:

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TEST REPORT

Report No.	SARL/23-2	273	Report Date	16.12.2023			
		The proposed quarry Of Thiru R. Arumugam					
Customer Name & Address		survey nos. 102/1A, 102/1	B, 102/1C, 102/1A, 102/1E, 102	/1F, 102/1G, 102/1H and			
Customer Name	& Address		62.0 Ha,Lekkanayakkanpatti Vil	lage, Marungapuri			
		Taluk, Tiruchirappalli Dist	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Descript	ion _	AMBIENT AIR QUALIT					
Sampling Proces	lure	IS - 5182 (Part - 14: 2000 &	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location A3-Naveen Garden Village			e				
Positioned heigh	t of Sampler	1.5 M above Ground Level					
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs			
Sample Reference	e No	SARL/A/CHE-273	Sample Received on	11.12.2023			
Sample Collected	d by	LABORATORY	Test Commenced on	11.12.2023			
Sample Collected Date		08.12.2023	.12.2023 Test Completed on				
Temperature		31°C	Relative Humidity	60%			
Sample Condition	n	Fit for Analysis					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	1141	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT*** J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Research

Labs

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TEST REPORT

Report No.	SARL/23-274		Report Date	. 16.12.2023	
Customer Name &	Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil		
Sample Description AMBIENT AIR QUALITY					
Sampling Procedure	e	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A4-Kottaiyur Natham Vill	age		
Positioned height of	f Sampler	1.5 M above Ground Level			
Customer Reference	e	As per work order	Sampling Procedure	24 hrs	
Sample Reference l	No	SARL/A/CHE-274	Sample Received on	11.12.2023	
Sample Collected b		LABORATORY	Test Commenced on	11.12.2023	
Sample Collected Date		08.12.2023	.12.2023 Test Completed on		
Temperature 31°C		31°C	Relative Humidity	60%	
Sample Condition		Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Please Contact:

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J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.					
Sample Description	AMBIENT AIR QUALIT					
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines					
Sample Location	A5-Akkiyampatti Village					
Positioned height of Sampler	1.5 M above Ground Level					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-275	Sample Received on	11.12.2023			
Sample Collected by	LABORATORY Test Commenced on 11.12.2023					
Sample Collected Date	09.12.2023 Test Completed on 16.12.2023					
Temperature	30°C	Relative Humidity	65%			
- A						

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

Report No.

Sample Condition

SARL/23-275

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

16.12.2023

** EXP OF THE REPORT*** J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

Chennai - 45

Fit for Analysis

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-27	76	Report Date	e. 16.12.2023		
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 103 62.0 Ha,Lekkanayakkanpatti V	2/1F, 102/1G, 102/1H and illage, Marungapuri		
Sample Descripti	on	AMBIENT AIR QUALIT				
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A6-Lekka Nayakanpatti V	Lekka Nayakanpatti Village			
Positioned height	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-276	Sample Received on	11.12.2023		
Sample Collected		LABORATORY	Test Commenced on	11.12.2023		
Sample Collected Date		09.12.2023	12.2023 Test Completed on			
Temperature		30°C				
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable lim

hermai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory J. GNANAPRAKASAM END OF THE REPORT

Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-277

Sample Condition

16.12.2023 Report Date.

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Akkiyampatti Village	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Level					
Customer Reference	As per work order	Sampling Procedure	24 hrs			
Sample Reference No	SARL/A/CHE-277	Sample Received on	11.12.2023			
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023			
Sample Collected Date	10.12.2023	Test Completed on	16.12.2023			
Temperature	29°C	Relative Humidity	70%			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.9	100
2	Particulate Matter less than 2.5 micron size (PM ₂₅)	IS 5182 (Part 24):2019	μg/m³	23.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Fit for Analysis

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TEST REPORT

Report No.	SARL/23-27	28	Report Date	. 16.12.2023		
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102. 62.0 Ha,Lekkanayakkanpatti Vil			
Sample Descripti	ion	AMBIENT AIR QUALIT	Y			
Sampling Proced	ure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
		· ·				
Sample Location		A6-Lekka Nayakanpatti Village				
Positioned height	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-278	Sample Received on	11.12.2023		
Sample Collected		LABORATORY	Test Commenced on	11.12.2023		
Sample Collected Date		10.12.2023	Test Completed on	16.12.2023		
Temperature		29°C	Relative Humidity	70%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

Please Contact:

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-279		Report Date.	23.12.2023		
Customer Name	& Address		102/1C, 102/1A, 102/1E, 102/ 0 Ha,Lekkanayakkanpatti Vill			
Sample Descript	ion	AMBIENT AIR QUALITY				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A5-Akkiyampatti Village				
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-279	Sample Received on	18.12.2023		
Sample Collected		LABORATORY	Test Commenced on	18.12.2023		
Sample Collected		12.12.2023	Test Completed on	23.12.2023		
Temperature		30°C				
Sample Conditio	n	Fit for Analysis	· · · · · · · · · · · · · · · · · · ·			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

SEND OF THE REPORT***

Please Contact:

J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

nt of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri alli District, Tamil Nadu.
JALITY
4: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines
֡

Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-280	Sample Received on	18.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023		
Sample Collected Date	12.12.2023	Test Completed on	23.12.2023		
Temperature	30°C	Relative Humidity	59%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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Authorized Signatory

Report Date.

23.12.2023

END OF THE REPORT

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-280

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45 × 63

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TEST REPORT

Report No.	SARL/23-2	281	Report Date.	23.12.2023		
Customer Name	& Address	The proposed quarry Of TI survey nos. 102/1A, 102/11 102/11 over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vill	1F, 102/1G, 102/1H and age, Marungapuri		
Sample Descript	tion	AMBIENT AIR QUALITY				
Sampling Proces	dure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003),	CPCB Guide lines		
Sample Location	1	A5-Akkiyampatti Village				
Positioned heigh	nt of Sampler	1.5 M above Ground Leve				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
			Sample Received on	18.12.2023		
Sample Collecte		LABORATORY	Test Commenced on	18.12.2023		
Sample Collected Date		13.12.2023	Test Completed on	23.12.2023		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	55.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: "National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

Authorized Signatory

END OF THE REPORT*** J. GNANAPRAKASAM Technical Manager

62%

Please Contact:

Temperature Sample Condition

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27°C

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

Report No. SARL/23-	282	Report Butt			
Customer Name & Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2.1 Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location Positioned height of Sampler	A6-Lekka Nayakanpatti V 1.5 M above Ground Leve				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-282	Sample Received on	18.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023		
Sample Collected Date	13.12.2023	Test Completed on	23.12.2023		
Temperature	27°C	Relative Humidity	62%		
SUSSIAL EASISTED CONTROL					

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	57.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m ³	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date

23.12.2023

Verified 23 12)23

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ND OF THE REPORT***

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

Sample Condition

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Fit for Analysis

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Naveen Garden Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-283	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	14.12.2023	Test Completed on	23.12.2023
Temperature	28°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

Verified 23 12 23

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

23.12.2023

END OF THE REPORT*

J. GNANAPRAKASAM Technical Manager

Please Contact:

Report No.

SARL/23-283

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

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	The proposed quarry Of T				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Plante & Address	102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri				
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A4-Kottaiyur Natham Vill	lage			
Positioned height of Sampler	1.5 M above Ground Leve	1			
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-284	Sample Received on	18.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023		
Sample Collected Date	14.12.2023	Test Completed on	23.12.2023		
Temperature	28°C	Relative Humidity	56%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	9.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

Verified 23 12 23

Chennai - 45 0 0 THE REPORT***

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

23.12.2023

Report Date.

Please Contact:

Report No.

Sample Condition

SARL/23-284

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-2	85	Report Date	23.12.2023		
Customer Name	& Address	The proposed quarry Of TI survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Descript	ion	AMBIENT AIR QUALIT	Y			
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	1	A3-Naveen Garden Village	e			
Positioned heigh	t of Sampler	1.5 M above Ground Leve				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-285	Sample Received on	18.12.2023		
Sample Collecte		LABORATORY	Test Commenced on	18.12.2023		
Sample Collecte		15.12.2023	Test Completed on	23.12.2023		
Temperature		26°C	Relative Humidity	73%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	22.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

ENA

Authorized Signatory J. GNANAPRAKASAM

Technical Manager

Please Contact:

Sample Condition

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Chennai -

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TEST REPORT

Report No.	SARL/23-2	86	Report Date	23.12.2023		
Customer Name	& Address		IB, 102/IC, 102/IA, 102/IE, 102 .62.0 Ha,Lekkanayakkanpatti Vi			
Sample Description AMBIENT AIR QUALITY						
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A4-Kottaiyur Natham Vil	lage			
Positioned heigh	t of Sampler	1.5 M above Ground Level				
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-286	Sample Received on	18.12.2023		
Sample Collected		LABORATORY	Test Commenced on	18.12.2023		
Sample Collected	d Date	15.12.2023	Test Completed on	23.12.2023		
Temperature		26°C	26°C Relative Humidity 73%			
Sample Conditio	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

***ENDO

Authorized Signatory

THE REPORT*** J. GNANAPRAKASAM

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Technical Manager
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TEST REPORT

Report No.	SARL/23-2	287	F	Report Date.	23.12.2023
		The proposed quarry O	f Thiru R. Arumugam		3
Customer Name	& Address	survey nos. 102/1A, 10	2/1B, 102/1C, 102/1A, 1 f 2 62 0 Ha Lekkanavaki		

Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY Sample Description IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

A1-Within Mine Lease Area Sample Location 1.5 M above Ground Level Positioned height of Sampler

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-287	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	16.12.2023	Test Completed on	23.12.2023
Temperature	29°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	73.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	33.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	13.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks; Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory

Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

The proposed quarry Of Thiru R. Arumugam
survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and
102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Seegampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-288	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	16.12.2023	Test Completed on	23.12.2023
Temperature	29°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		<i>\</i> \\

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd A& Russ

***END OF THE REPORT

Authorized Signatory J. GNANAPRAKASAM

Technical Manager

Report Date.

23.12.2023

Please Contact:

Report No.

SARL/23-288

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TEST REPORT

Report No.	SARL/23-289		Report Date	. 23.12.2023
Customer Name &	Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	
Sample Description AMBIENT AIR QUALITY				
Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lin			, CPCB Guide lines	
Sample Location		A1-Within Mine Lease Are	ea	
Positioned height o	f Sampler	1.5 M above Ground Leve		
Customer Reference	e	As per work order	Sampling Procedure	24 hrs
Sample Reference 1	No	SARL/A/CHE-289	Sample Received on	18.12.2023
Sample Collected b	у	LABORATORY	Test Commenced on	18.12.2023
Sample Collected D	Date	17.12.2023	Test Completed on	23.12.2023
Temperature		23°C	Relative Humidity	90%
Sample Condition		Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	69.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	32.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	$\mu g/m^3$	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	12	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM Please Contact: Technical Manager

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TEST REPORT

Report No.	SARL/23-290	Report Date.	23.12.2023
	The proposed quarry Of		
Customer Name		2/1B, 102/1C, 102/1A, 102/1E, 102/1F 52.62.0 Ha,Lekkanayakkanpatti Villag	

Taluk, Tiruchirappalli District, Tamil Nadu. Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location	A2-Seegampatti Village	
Positioned height of Sampler	1.5 M above Ground Level	

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-290	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	17.12.2023	Test Completed on	23.12.2023
Temperature	23°C	Relative Humidity	90%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	45.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

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J. GNANAPRAKASAM Technical Manager

23.12.2023

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-2	291	Report Date	. 30.12.2023
Customer Name & Address		The proposed quarry Of To survey nos. 102/1A, 102/1 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri
Sample Description AMBIENT AIR QUALITY				
Sampling Procedure IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lin			CPCB Guide lines	
		Gride Control of the		
Sample Location		A1-Within Mine Lease Ar	ea	
Positioned height	t of Sampler	1.5 M above Ground Leve	1	
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs
Sample Reference		SARL/A/CHE-291	Sample Received on	25.12.2023
Sample Collected		LABORATORY	Test Commenced on	25.12.2023
Sample Collected		19.12.2023	Test Completed on	30.12.2023
Temperature 28°C		28°C	Relative Humidity	61%
Sample Condition	n	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	67.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	31.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	11.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

J. GNANAPRAKASAM Technical Manager

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Please Contact:

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TEST REPORT

Report No.	SARL/23-2	292	Repor	t Date.	30.12.2023
					
Customer Name	& Address	The proposed quarry Of Tl survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/11 62.0 Ha,Lekkanayakkanpa	E, 102/11 atti Villa	F, 102/1G, 102/1H and ge, Marungapuri
Sample Description AMBIENT AIR QUALITY					
Sampling Proced	ure	IS - 5182 (Part - 14: 2000	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		
		nu para di manana di manana di manana di manana di manana di manana di manana di manana di manana di manana di			
Sample Location		A2-Seegampatti Village			
Positioned height	t of Sampler	1.5 M above Ground Leve			
Customer Refere	nce	As per work order	Sampling Procedu	re	24 hrs
Sample Reference		SARL/A/CHE-292	Sample Received		25.12.2023
Sample Collected		LABORATORY	Test Commenced		25.12.2023
Sample Collected		19.12.2023	Test Completed or		30.12.2023
Temperature		28°C	Relative Humidity	0	61%
Sample Condition	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	56.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.8	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

Verified 30 12/23

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Please Contact:

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Technical Manager

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102			
		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri		
	Taluk, Tiruchirappalli Dist				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A1-Within Mine Lease Ar	ea			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-293	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	20.12.2023	Test Completed on	30.12.2023		
Temperature	28°C	Relative Humidity	64%		
Sample Condition	Fit for Analysis	11			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	62.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	28.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μ g /m³	9.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

Authorized Signatory

30.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-293

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager Terms and conditions:

J. GNANAPRAKASAM

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-2	94	Report Date	. 30.12.2023		
Customer Name &	≿ Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Description	on	AMBIENT AIR QUALIT				
Sampling Procedu	ire	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A2-Seegampatti Village				
Positioned height	of Sampler	1.5 M above Ground Level				
Customer Referen	ice	As per work order	Sampling Procedure	24 hrs		
Sample Reference	No	SARL/A/CHE-294	Sample Received on	25.12.2023		
Sample Collected		LABORATORY	Test Commenced on	25.12.2023		
Sample Collected	Date	20.12.2023	Test Completed on	30.12.2023		
Temperature		28°C	8°C Relative Humidity 64%			
Sample Condition	- · · · · · · · · · · · · · · · · · · ·	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g /m³	53.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-2	295	Report Date	30.12.2023		
Customer Name &	ὰ Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi			
Sample Description AMBIENT AIR QUALITY						
Sampling Procedu	ıre	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A3-Naveen Garden Village				
Positioned height	of Sampler	1.5 M above Ground Level				
Customer Referen	ice	As per work order	Sampling Procedure	24 hrs		
Sample Reference	No	SARL/A/CHE-295	Sample Received on	25.12.2023		
Sample Collected	by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected	Date	21.12.2023	Test Completed on	30.12.2023		
Temperature		29°C	Relative Humidity	60%		
Sample Condition		Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	46.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.9	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

& Read

Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

THE REPORT***J. GNANAPRAKASAM

Authorized Signatory

Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-29	06	Report Date.	30.12.2023		
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102/ 62.0 Ha,Lekkanayakkanpatti Vill	1F, 102/1G, 102/1H and age, Marungapuri		
Sample Descripti	on	AMBIENT AIR QUALIT				
Sampling Proced		IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A4-Kottaiyur Natham Vill	age			
Positioned height	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference		SARL/A/CHE-296	Sample Received on	25.12.2023		
Sample Collected		LABORATORY	Test Commenced on	25.12.2023		
Sample Collected		21.12.2023	Test Completed on	30.12.2023		
Temperature		29°C	Relative Humidity	60%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM

Please Contact:

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& Res

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END OF THE REPORT**



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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address		B, 102/1C, 102/1A, 102/1E, 102			
Customer Name & Macross		62.0 Ha,Lekkanayakkanpatti Vi	Ilage, Marungapuri		
	Taluk, Tiruchirappalli Dist	rict, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALIT				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A3-Naveen Garden Village	e			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-297	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	22.12.2023	Test Completed on	30.12.2023		
Temperature	29°C	Relative Humidity	56%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	4.3	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μg/m³	9.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

30.12.2023

ENDOF THE REPORT J. GNANAPRAKASAM

Report No.

SARL/23-297

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager
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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Name & Address	102/1I over an extent of 2.	62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri		
	Taluk, Tiruchirappalli Dist	rict, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location	A4-Kottaiyur Natham Vill	age			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-298	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	22.12.2023	Test Completed on	30.12.2023		
Temperature	29°C	Relative Humidity	56%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182; Part 06:2006	μg/m³	11.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks; Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

** ENDOF THE REPORT**** J. GNANAPRAKASAM Technical Manager

30.12.2023

Report Date.

Please Contact:

Report No.

SARL/23-298

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi			
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 &	Part - V: Reaffirmed - 2003), CPC	B Guide lines		
Sample Location	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-299	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	23.12.2023	Test Completed on	30.12.2023		
		Relative Humidity	52%		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT

J. GNANAPRAKASAM

Please Contact:

Report No.

Sample Condition

SARL/23-299

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Page I of I

30.12.2023

Report Date.



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TEST REPORT

	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
Customer Name & Address		62.0 Ha,Lekkanayakkanpatti Vi			
	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 &	Part - V: Reaffirmed - 2003), CPC	B Guide lines		
Sample Location	A6-Lekka Nayakanpatti V	illage			
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-300	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	23.12.2023	Test Completed on	30.12.2023		
Temperature	28°C	Relative Humidity	52%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.4	80
4	Nitrogen Dioxide (NO2)	IS:5182: Part 06:2006	μ g /m³	8.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

Chennai - 45

Verified 30 12/23

Report No.

SARL/23-300

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

Report Date.

30.12.2023

Please Contact:

J. GNANAPRAKASAM

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Website: www.shrientanalytical.com

TEST REPORT

report No.	301	Report But	7. 50.12.2023		
	The proposed quarry Of Thiru R. Arumugam				
Customer Name & Address	survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and				
		62.0 Ha,Lekkanayakkanpatti Vi	llage, Marungapuri		
	Taluk, Tiruchirappalli Dist	trict, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY				
Sampling Procedure	IS - 5182 (Part - 14: 2000 &	Part - V: Reaffirmed - 2003), CPC	B Guide lines		
	40				
Sample Location	A5-Akkiyampatti Village				
Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-301	Sample Received on	25.12.2023		
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023		
Sample Collected Date	24.12.2023	Test Completed on	30.12.2023		
Temperature	28°C	Relative Humidity	61%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	48.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL -Detectable limit.

Chennai - 45

30 12/23

SARL/23-301

× -> 240%

Authorized Signatory

J. GNANAPRAKASAM

For Shrient Analytical and Research Labs Pvt. Ltd

Report Date.

30.12.2023

Please Contact:

Report No.

For any Technical Issues & Complaints: vimalnath@shrientanalytical.comTechnical Manager

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TEST REPORT

Report No.	SARL/23-3	302	Report Date	30.12.2023
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	
Sample Description AMBIENT AIR QUALITY				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 &	Part - V: Reaffirmed - 2003), CPC	B Guide lines
Sample Location		A6-Lekka Nayakanpatti V	illage	
Positioned heigh	t of Sampler	1.5 M above Ground Level		
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs
Sample Reference	e No	SARL/A/CHE-302	Sample Received on	25.12.2023
Sample Collected	d by	LABORATORY	Test Commenced on	25.12,2023
Sample Collected	d Date	24.12.2023	Test Completed on	30.12.2023
Temperature		28°C	Relative Humidity	61%
Sample Conditio	n	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

END OF THE REPORT*** J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-	303	Report Date	. 06.01.2024
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	
Sample Description AMBIENT AIR QUALITY				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003)	, CPCB Guide lines
Sample Location		A5-Akkiyampatti Village		
Positioned heigh	t of Sampler	1.5 M above Ground Leve		
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs
Sample Reference	e No	SARL/A/CHE-303	Sample Received on	01.01.2024
Sample Collected		LABORATORY	Test Commenced on	01.01.2024
Sample Collected		26.12.2023	Test Completed on	06.01.2024
Temperature		27°C	27°C Relative Humidity	
Sample Conditio	n	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	54.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

PEND OF THE REPORT***

Authorized Signatory J. GNANAPRAKASAM Technical Manager

Please Contact:

48 For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-30	04	Report Date	. 06.01.2024
Customer Name	& Address	The proposed quarry Of TI survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi	/1F, 102/1G, 102/1H and llage, Marungapuri
Sample Description AMBIENT AIR QUALITY				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000	& Part - V: Reaffirmed - 2003)	CPCB Guide lines
Sample Location		A6-Lekka Nayakanpatti V	illage	
Positioned height	t of Sampler	1.5 M above Ground Leve		
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs
Sample Reference	e No	SARL/A/CHE-304	Sample Received on	01.01.2024
Sample Collected		LABORATORY	Test Commenced on	01.01.2024
Sample Collected		26.12.2023	Test Completed on	06.01.2024
Temperature		27°C	Relative Humidity	67%
Sample Condition	n	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	56.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	27.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	8.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

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For Shrient Analytical and Research Labs Pvt. Ltd

*** END OF THE REPORT*** SARS & P

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	AMBIENT AIR QUALITY			
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
C 1. 14:	AC ALL WITTE			
Sample Location	A5-Akkiyampatti Village			
Positioned height of Sampler	1.5 M above Ground Leve	<u> </u>		
Customer Reference	As per work order	Sampling Procedure	24 hrs	
Sample Reference No	SARL/A/CHE-305	Sample Received on	01.01.2024	
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024	
Sample Collected Date	27.12.2023	Test Completed on	06.01.2024	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL - Detectable limit.

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Chennai - 45

For Shrient Analytical and Research Labs Pvt. Ltd

Relative Humidity

Report No.

Temperature

Sample Condition

SARL/23-305

END OF THE REPORT

Authorized Signatory

Report Date.

06.01.2024

61%

Please Contact:

28°C

Fit for Analysis

J. GNANAPRAKASAM Technical Manager

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/23-3	306	Report Date.	06.01.2024	
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11	B, 102/1C, 102/1A, 102/1E, 102/	/IF, 102/IG, 102/IH and	
		102/1I over an extent of 2.62.0 Ha, Lekkanayakkan patti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description AMBIENT AIR QUALITY					
Sampling Proceed	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A6-Lekka Nayakanpatti V	illage		
Positioned heigh	t of Sampler	1.5 M above Ground Level			
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-306	Sample Received on	01.01.2024	
Sample Collecte		LABORATORY	Test Commenced on	01.01.2024	
Sample Collected Date		27.12.2023	Test Completed on	06.01.2024	
Temperature		28°C	Relative Humidity	61%	
Sample Condition	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μ g/m ³	52.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM END OF THE REPORT*** Please Contact: For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-30	7	Report Date	06.01.2024	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vi		
Sample Description AMBIENT AIR QUALITY					
Sampling Proceed	dure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location	1	A3-Naveen Garden Village	e		
Positioned heigh	t of Sampler	1.5 M above Ground Leve			
Customer Refere	ence	As per work order	Sampling Procedure	24 hrs	
Sample Reference	ce No	SARL/A/CHE-307	Sample Received on	01.01.2024	
Sample Collected	d by	LABORATORY	Test Commenced on	01.01.2024	
Sample Collected Date		28.12.2023	8.12.2023 Test Completed on		
Temperature		28°C	Relative Humidity	67%	
Sample Conditio	m	Fit for Analysis		W.	

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	53.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	24.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB, BDL-Below detectable limit. DL -Detectable limit.

Verified 6 01/24

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory
J. GNANAPRAKA

J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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other of the report***



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TEST REPORT

Report No.	SARL/23-30	08	Report Date	06.01.2024	
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2.4 Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and lage, Marungapuri	
Sample Description AMBIENT AIR QUALITY					
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines			
Sample Location		A4-Kottaiyur Natham Villa	age		
Positioned height	t of Sampler	1.5 M above Ground Level			
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference		SARL/A/CHE-308	Sample Received on	01.01.2024	
Sample Collected		LABORATORY	Test Commenced on	01.01.2024	
Sample Collected Date		28.12.2023	Test Completed on	06.01.2024	
Temperature		28°C	Relative Humidity	67%	
Sample Condition	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	47.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	21.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	3.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT***

Authorized Signatory

Please Contact: PIT J. GNANAPRAKASAM

Please Contact:
For any Technical Issues & Complaints: vimalmath@shrientanalytical.com Technical Manager

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Positioned height of Sampler	1.5 M above Ground Level				
Customer Reference	As per work order	Sampling Procedure	24 hrs		
Sample Reference No	SARL/A/CHE-309	Sample Received on	01.01.2024		
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024		
Sample Collected Date	29.12.2023	Test Completed on	06.01.2024		
Temperature	29°C	Relative Humidity	63%		
Sample Condition	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	50.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	9.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Please Contact:

Report No.

SARL/23-309

For Shrient Analytical and Research Labs Pvt. Ltd 3 Kes

Authorized Signatory

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J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

06.01.2024

Report Date.

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TEST REPORT

Report No.	SARL/23-3	310	Report Date	. 06.01.2024	
Customer Name	& Address		B, 102/1C, 102/1A, 102/1E, 102 .62.0 Ha,Lekkanayakkanpatti Vil		
Sample Description AMBIENT AIR QUALITY					
Sampling Procedure IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines				, CPCB Guide lines	
Sample Location		A4-Kottaiyur Natham Vill	age		
Positioned height	t of Sampler	1.5 M above Ground Leve	l		
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs	
Sample Reference	e No	SARL/A/CHE-310	Sample Received on	01.01.2024	
Sample Collected	d by	LABORATORY	Test Commenced on	01.01.2024	
Sample Collected Date		29.12.2023	Test Completed on	06.01.2024	
Temperature		29°C	Relative Humidity	63%	
Sample Condition	n	Fit for Analysis			

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	51.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL-Below detectable limit. DL-Detectable limit.

END OF THE REPORT*

Authorized Signatory

For Shrient Analytical and Research Labs Pvt. Ltd

J. GNANAPRAKASAM Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

,	Report No.	SARL/23-311	Report Date.	00.01.2024
	Customer Name & Ad	The proposed quarry Of Thiru I survey nos. 102/1A, 102/1B, 10 102/1I over an extent of 2.62.0	02/1C, 102/1A, 102/1E, 102/1I	

Taluk, Tiruchirappalli District, Tamil Nadu. AMBIENT AIR QUALITY Sample Description IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location A1-Within Mine Lease Area Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-311	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	30.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
ī	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	57.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	26.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks; Limits; *National Ambient air quality standards from CPCB, BDL-Below detectable limit, DL-Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

Danout No.

CADT /02 011

Authorized Signatory

06 01 2024

Donort Data

FND OF THE REPORT*** 145 + bi Please Contact:

J. GNANAPRAKASAM For any Technical Issues & Complaints: vimalnath@shrientanalytical.com Technical Manager

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Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com

Website: www.shrientanalytical.com

TEST REPORT

Report No S	SARL/23-312		Report Date.	06.01.2024		
	p		7			
	The proposed	l quarту Of Thiru R. Arumuga	m			
Customer Name & Add		02/1A, 102/1B, 102/1C, 102/1				
Customer Name & Au	102/II over a	n extent of 2.62.0 Ha,Lekkana	ayakkanpatti Villa	ge, Marungapuri		
	Taluk, Tiruch	Taluk, Tiruchirappalli District, Tamil Nadu.				
Sample Description		AMBIENT AIR QUALITY				
Sampling Procedure	IS – 5182 (Pa	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
W- W- 8						
Sample Location	A2-Seegamp	atti Village				
Positioned height of Sa	mpler 1.5 M above	Ground Level				
Customer Reference	As per work	order Sampling	g Procedure	24 hrs		
Sample Reference No	SARL/A/CH	IE-312 Sample F	Received on	01.01.2024		
Sample Collected by	LABORATO	ORY Test Con	nmenced on	01.01.2024		
Sample Collected Date	30.12.2023	Test Con	npleted on	06.01.2024		
Temperature	28°C	Relative	Humidity	60%		
Sample Condition	Fit for Analy	/sis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	52.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	25.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	7.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

Verified 6 01/29

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

PANEND OF THE REPORT***

J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Report No.	SARL/23-	313	Report Date	. 06.01.2024		
Customer Name	& Address	The proposed quarry Of The survey nos. 102/1A, 102/11 102/1I over an extent of 2. Taluk, Tiruchirappalli Dist	B, 102/1C, 102/1A, 102/1E, 102 62.0 Ha,Lekkanayakkanpatti Vil	/1F, 102/1G, 102/1H and llage, Marungapuri		
Sample Descripti	ion	AMBIENT AIR QUALIT				
Sampling Proced	lure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines				
Sample Location		A1-Within Mine Lease Area				
Positioned height	t of Sampler	1.5 M above Ground Level				
Customer Refere	nce	As per work order	Sampling Procedure	24 hrs		
Sample Reference	e No	SARL/A/CHE-313	Sample Received on	01.01.2024		
Sample Collected		LABORATORY	Test Commenced on	01.01.2024		
Sample Collected		31.12.2023	Test Completed on	06.01.2024		
Temperature		29°C	Relative Humidity	53%		
Sample Condition	n	Fit for Analysis				

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	63.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μ g /m³	29.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μ g /m³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	10.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L – 1.1)	02

Remarks: Limits; *National Ambient air quality standards from CPCB, BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd

** END OF THE REPORT***

J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri
	Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description AMBIENT AIR QUALITY IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines Sampling Procedure

Sample Location A2-Seegampatti Village Positioned height of Sampler 1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-314	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	31.12.2023	Test Completed on	06.01.2024
Temperature	29°C	Relative Humidity	53%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	μg/m³	49.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	μg/m³	23.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	μg/m³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	μg/m³	6.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m³	BDL (D.L - 1.1)	02

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL -Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd g Resea

Report Date.

06.01.2024

TEND OF THE REPORT*** J. GNANAPRAKASAM

Report No.

SARL/23-314

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Technical Manager

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TEST REPORT

Report No.	SARL/23-171	R	Report Date.	21.10.2023
Customer Name	e & Address	The proposed quarry Of Thiru R. Arumug 102/1A, 102/1E, 102/1F, 102/1G, 102/1H Ha,Lekkanayakkanpatti Village, Marunga Tiruchirappalli District, Tamil Nadu.	and 102/11 ov	s. 102/1A, 102/1B, 102/1C, wer an extent of 2.62.0
Sample Descrip	otion	WATER		
Sample Mark		SW 1 - Palaru (Upstream) 1.7 km - S		

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 23: 2021
Sample Reference No.	SARL/W/CHE-171	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

SI. No.	Parameters	Protocol	Unit	Result	
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	7.20	Agreeable	
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	6.3	
3	pH at 25 °C	APHA 24th Edition 4500 - H+ B: 2023	Yel	7.46	
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1160	
5	Temperature	APHA 24th Edition 2550 B: 2023	°C	31	
В.	Chemical parameters				
6	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	734	
7	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	357	
8	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	48.6	
9	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	56.4	
10	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	122	
11	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	235	
12	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	345	



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TEST REPORT

Report No. SARL/23-171

Report Date.

21.10.2023

SI. No.	Parameters	Protocol	Unit	Result
13	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	360
14	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)
15	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	60.0
16	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.107
17	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.65
18	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)
19	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)
20	Total suspended solids	APHA 24th Edition 2540-D: 2023	mg/L	4.0
21	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	BDL (D.L - 4.0)
22	Biochemical oxygen demand (3 days at 27°C)	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
23	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.4

Remarks: BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Chennai - 45

Authorized Signatory ASAM

J. GNANAPRAKASAM

Technical Manager

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TEST REPORT

Report No.	SARL/23-172		Report Date.	21.10.2023
Customer Name	& Address	The proposed quarry Of Thiru R. Art 102/1A, 102/1E, 102/1F, 102/1G, 10 Ha,Lekkanayakkanpatti Village, Mar Tiruchirappalli District, Tamil Nadu.	2/1H and 102/1I o ungapuri Taluk,	s. 102/1A, 102/1B, 102/1C, wer an extent of 2.62.0
Sample Descrip	tion	WATER		
Sample Mark		SW 2 - Palaru (Downstream) 1.7 km	- S	

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 23: 2021
Sample Reference No.	SARL/W/CHE-172	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

SI. No.	Parameters	Protocol	Unit	Result	
A.	Physical parameters				
l	Odour	IS 3025 (Part 5): 2018		Agreeable	
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	10.0	
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	> ₽	7.52	
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1182	
5	Temperature	APHA 24th Edition 2550 B: 2023	°C	31.5	
В.	Chemical parameters				
6	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	752	
7	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	365	
8	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	48.6	
9	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	57.4	
10	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	125	
11	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	239	
12	Total Alkalinity (as CaCO ₃)	APHA 24 Edition 2320 B: 2023	mg/L	353	



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Website: www.shrientanalytical.com

TEST REPORT

Report No. SARL/23-172

Report Date. 21.10.2023

SI. No.	Parameters	Protocol	Unit	Result
13	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	370
14	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)
15	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO4 ² - E: 2023	mg/L	65.0
16	Iron (as Fe)	APHA 24 th Edition 3500 Fe B: 2023	mg/L	0.12
17	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.42
18	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)
19	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)
20	Total suspended solids	APHA 24th Edition 2540-D: 2023	mg/L	12.0
21	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	BDL (D.L – 4.0)
22	Biochemical oxygen demand (3 days at 27°C)	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
23	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.2

Remarks: BDL - Below Detectable limit (DL - Detectable limit)

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 1023

Please Contact:

END OF THE REPORT

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Chennai - 45

The state of

J. GNANAPRAKASAM

Technical Manager

Authorizéd Signatory

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TEST REPORT

Customer Name & Address	Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	WATER			
Sample Mark	GW 1 - Within Mine Le	ease Area		
Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021	
Sample Reference No.	SARL/W/CHE-173	Sample Received on	15.10.2023	

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-173	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl.					*Limits	
No.	Parameters	Protocol	Unit	Result	Permissible	
A.	Physical parameters					
1	Odour	IS 3025 (Part 5): 2018	₹:	Agreeable	Agreeable	
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0	
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.23	6.50-8.50	
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1350	40	
В.	Chemical parameters		- 11			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	820	2000	
6	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	405	600	
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	112	200	
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	30.4	100	
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	279	189	

21/10/23

Report No.

SARL/23-173

13.74 13/13

21.10.2023

Report Date.



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TEST REPORT

SARL/23-173 Report No.

Report Date.

21.10.2023

SI.	T	Parameters Protocol		D14	*Limits	
No.	Parameters			Result	Permissible	
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	126	ē	
11	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	380	600	
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	330	1000	
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0	
14	Sulphate as (SO ₄ ² -)	APHA 24th Edition 4500 SO4 ² - E: 2023	mg/L	67.6	400	
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.04	0.3	
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.51	45	
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.49	1.5	
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)	0.3	

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012. BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

460/145 **END OF THE REPORT***

Please Contact:

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J. GNANAPRAKASAM **Technical Manager**

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Website: www.shrientanalytical.com

TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	WATER			
Sample Mark	GW 2 - Seegampatti Vi	llage		

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-174	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

SI.					*Limits
No.	Parameters	Protocol	Unit	Result	Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	*	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24th Edition 4500 - H+ B: 2023	-	7.15	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1353	
В.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	830	2000
6	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	409	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	115	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	29.5	100
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	286	*



Report No.

SARL/23-174



C5-7 Med Pr

21.10.2023

Report Date.



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TEST REPORT

Report No. SARL/23-174

Report Date.

21.10.2023

SI.			×7. 1.	D 1	*Limits
No.	Parameters	Protocol	Unit	Result	Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	123	-
11	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	372	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	320	1000
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	136	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.06	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	3.06	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.45	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012. BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

cal & Resource ***END OF THE REPORT***

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Customer Name & Address	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.			
Sample Description	WATER			
Sample Mark	GW 3 - Naveen Garden	Village		
Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021	
Sample Reference No.	SARL/W/CHE-175	Sample Received on	15.10.2023	

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-175	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.				70. 1.	*Limits
	Parameters	Protocol	Unit	Result	Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	÷	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	-	7.35	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1745	
В.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1060	2000
6	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	454	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	110	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	42.9	100
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	275	:2)



Report No.

SARL/23-175



21.10.2023

Report Date.



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TEST REPORT

Report No. SARL/23-175 Report Date.

21.10.2023

SI.				D .14	*Limits
No.	Parameters	Protocol	Unit	Result	Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	179	
11	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	455	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	335	1000
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	183	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.09	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	1.68	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.26	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012. BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Please Contact:

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J. GNANAPRAKASAM

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TEST REPORT

Out Name & Address	The proposed quarry Of 102/1A, 102/1E, 102/1F	The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over an extent of 2.62.0			
Customer Name & Address		Ha, Lekkanayakkan patti Village, Marungapuri Taluk,			
		Tiruchirappalli District, Tamil Nadu.			
Sample Description WATER					
Sample Mark	GW 4 - Kottaiyur Natha	W 4 - Kottaiyur Natham Village			
Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021		
Sample Reference No.	SARL/W/CHE-176	Sample Received on	15,10,2023		

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-176	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis	<u>''</u>	

Sl.	_				*Limits
No.	Parameters	Protocol	Unit	Result	Permissible
Α.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	-	7.87	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1412	•
В.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	850	2000
6	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	458.6	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	102	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	48.9	100
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	254.8	



SARL/23-176

Report No.



R. May

21.10.2023

Report Date.



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TEST REPORT

Report No. SARL/23-176

Report Date.

21.10.2023

SI.	D .			D 14	*Limits
No.	Parameters	Protocol	Unit	Result	Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	203.8	l g
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	349	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	251	1000
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	126	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.05	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	1.39	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.32	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012. BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

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Please Contact:

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J. GNANAPRAKASAM Technical Manager

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TEST REPORT

Customer Name & Address	102/1A, 102/1E, 102/1F	Thiru R. Arumugam survey r f, 102/1G, 102/1H and 102/1I Village, Marungapuri Taluk, Tamil Nadu.	over an extent of 2.62.0
Sample Description	WATER		
Sample Mark	GW 5 - Akkiyampatti V	illage	
Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-177	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis	101	

SI.		11			*Limits
No. Parameters	Parameters	Protocol	Unit	Result	Permissible
A.	Physical parameters		77		
1	Odour	IS 3025 (Part 5): 2018	•	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	-	7.87	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	1476	3 9
В.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	898	2000
6	Total Hardness (as CaCO ₃) APHA 24 th Edition 2340 C		mg/L	439.0	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	89.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	51.7	100
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	223.4	24 0



SARL/23-177

Report No.



7: States

21.10.2023

Report Date.



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TEST REPORT

Report No. SARL/23-177

Report Date.

21.10.2023

Sl.			Unit	75 11	*Limits
No.	No. Parameters	Protocol		Result	Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	215.6	<u> </u>
11	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	337	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	429	1000
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO4 ² - E: 2023	mg/L	86.3	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.08	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.86	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.45	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

NEND OF HEREPORT

Authorized Signatory

J. GNANAPRAKASAM Technical Manager

Please Contact:

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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report Date.

21.10.2023

Customer Name & Address	102/1A, 102/1E, 102/1	f Thiru R. Arumugam survey i F, 102/1G, 102/1H and 102/1I i Village, Marungapuri Taluk, , Tamil Nadu.	over an extent of 2.62.0
Sample Description	WATER		
Sample Mark	GW 6 - Lekka Nayakar	ipatti Village	
Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-178	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. Parameters	T			Agreeable <1.0 7.16 2105	*Limits
	Protocol	Unit	Result	Permissible	
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	=	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	-	7.16	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µmhos/cm)	2105	
В.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1270	2000
6	Total Hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	356.7	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	98.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	26.3	100
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	247.0	360



Report No.

SARL/23-178



P. Jahray



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TEST REPORT

Report No. SARL/23-178

Report Date.

21.10.2023

Sl. Parameters		n	TT 4.	D 1	*Limits
	Protocol	Unit	Result	Permissible	
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	109.8	ř
11	Total Alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	402	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	463	1000
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24th Edition 4500 SO4 ² - E: 2023	mg/L	295	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.11	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	3.55	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.39	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012. BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT

J. GNANAPRAKASAM Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-1	179	Report Date.	21.10.2023
Customer Name	& Address	102/IA, 102/IE, 102/IF	Thiru R. Arumugam survey nos. 10 , 102/1G, 102/1H and 102/1I over a Village, Marungapuri Taluk, Tiruc	an extent of 2.62.0
Sample Descripti	on	SOIL	35.51	
Sample Mark		S1 - Within Mine Lease	Area	
Customer Referen	nce	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference	e No.	SARL/SO/CHE-179	Sample Received on	15.10.2023
Sample Collected	by	LADODATODY	Test Commenced on	15 10 2023

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-179	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987		7.54
2	Electrical Conductivity	IS 14767: 2000	μmhos/cm	83.16
3	Dry matter content	IS 15106: 2002	%	89.29
4	Water Content	IS 15106: 2002	%	10.71
5	Organic Matter	IS 2720: Part 22: 1972	%	0.54
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	210
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	Silty Clay Loam
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	12.3
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	50.7
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	37.0
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.86
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	604
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	234
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL $(D.L - 0.02)$
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	17.6
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.8

Remarks: BDL - Below Detectable limit (DL - Detectable limit)

For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT*

Chormai - 45

Authorized Signatory J. GNANAPRAKASAM

Technical Manager

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TEST REPORT

Report No.	SARL/23-180		Report Date.	21.10.2023
Customer Name	& Address	The proposed quarry Of Thiru R. Arus 102/1A, 102/1E, 102/1F, 102/1G, 102 Ha,Lekkanayakkanpatti Village, Maru	2/1H and 102/11 over an	extent of 2.62.0
Sample Descripti	ion	SOIL		
Sample Mark		S2 - Seegampatti Village		

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-180	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987		5.33
2	Electrical Conductivity	IS 14767: 2000	μmhos/cm	42.35
3	Dry matter content	IS 15106: 2002	%	93.20
4	Water Content	IS 15106: 2002	%	6.80
5	Organic Matter	IS 2720: Part 22: 1972	%	0.65
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	305
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67:	%	Silty Clay Loam
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67:	%	11.9
	ii. Silt	Methods Manual - Soil testing in India - P. No-67:	%	52.0
	iii. Clay	Methods Manual - Soil testing in India - P. No-67; 2011	%	36.0
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.22
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	1010
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	649
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L - 0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	19.2
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.1

Remarks: BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory Cheens of the Report.

For any Technical Issues & Complaints: vimalinath@shrientanalytical.com J. GNANAPRAKASAM

(1) The test items will not be retained for more than 15 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test be reproduced except in full without the written approval of the laboratory (4) have test for advantage. report shall not be reproduced except in full without the written approval of the laboratory (4) Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4. (5) The correctness of the information related to sample(s) in the Tast Request Form/Customer letterhead/Email is the customer's responsibility. The laboratory reports the said information in the test report and is not liable for the same.

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416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-181	Report Date.	21.10.2023	
Customer Name	& Address	The proposed quarry Of Thiru R. Arumugam survey nos. 1-102/1A, 102/1E, 102/1F, 102/1G, 102/1H and 102/1I over a Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruc	n extent of 2.62.0	
		SOIL		
Sample Mark		S3 - Naveen Garden Village		

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-181	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis	* * * * * * * * * * * * * * * * * * * *	

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987		7.51
2	Electrical Conductivity	IS 14767: 2000	μmhos/cm	82.94
3	Dry matter content	IS 15106: 2002	%	90.55
4	Water Content	IS 15106: 2002	%	9.45
5	Organic Matter	IS 2720: Part 22: 1972	%	0.72
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	156
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	Silty Clay Loam
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	13.4
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	50.1
	iii. Clay	Methods Manual - Soil testing in India - P. No-67:	%	36.5
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.76
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	606
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	232
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L - 0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	18.7
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.6

Remarks: BDL - Below Detectable limit (DL - Detectable limit)

For Shrient Analytical and Research Labs Pvt. Ltd

Chennai - 45 END OF THE REPORT*** Authorized Signatory

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

J. GNANAPRAKASAM

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416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045. Phone No: 9841074398 / 9698141777 E-mail: Info@shrientanalytical.com Website: www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-182	Report Date.	21.10.2023

Customer Name & Address

The proposed quarry Of Thiru R. Arumugam survey nos. 102/1A, 102/1B, 102/1C, 102/1A, 102/1E, 102/1F, 102/1F, 102/1H and 102/1I over an extent of 2.62.0 Ha,Lekkanayakkanpatti Village, Marungapuri Taluk, Tiruchirappalli District, Tamil Nadu.

Sample Description

NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/N/CHE-182	Date of Monitoring	14.10.2023
Sample Collected by	LABORATORY	——————————————————————————————————————	

Level in dB (A)

					FAAA	I III db (A)
Time in hrs	N1	N2	N3	N4	N5	N6
06.00	42.2	41.3	40.6	43.1	41.3	43.4
07.00	44.1	45.2	43.2	41.5	44.1	47.2
08.00	43.2	50.1	41.6	42.6	40.6	48.3
09.00	46.1	49.6	45.2	44.2	43.8	50.2
10.00	48.2	50.2	47.3	45.1	45.7	47.3
11.00	56.2	47.3	50.1	43.8	48.2	46.2
12.00	54.1	49.2	51.3	44.1	46.1	48.4
13.00	53.2	46.5	47.6	43.2	50.2	50.1
14.00	55.4	50.4	45.2	44.6	47.2	47.5
15.00	51.2	48.7	43.1	42.2	48.1	45.3
16.00	50.6	49.2	47.2	44.3	46.8	47.1
17.00	48.2	46.2	46.2	47.2	49.2	46.3
18.00	45.1	45.2	44.2	43.2	46.2	48.2
19.00	43.2	43.7	44.5	45.6	45.2	46.1
20.00	41.5	44.3	42.3	41.3	44.1	44.2
21.00	40.4	41.6	40.6	42.8	42.2	42,2
22.00	41.3	43.2	41.2	40.1	40.6	43.2
23.00	39.6	40.6	39.5	43.1	43.2	41.6
24.00	40.3	38.7	38.6	40.6	41.6	44.2
01.00	38.4	39.5	40.1	38.3	39.5	42.1
02.00	39.1	40.6	38.8	40.1	40.2	40.6
03.00	41.3	38.2 & Ke	39.4	37.5	38.5	42.6
04.00	39.5	38.6	2.19.1	38.5	41.2	41.2
05.00	41.2	40.1chenna	-45. S. 38.7	38.1	39.2	43.3

2 10 23

7: 2 mol 2

Page I of 2

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416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045.
Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No. SAR	L/23-182
----------------	----------

Report Date.	21.10.2023	
--------------	------------	--

	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	50.5	47.7	46.1	43.9	46.3	47.2
NIGHT EQUIVALENT	40.2	40.2	39.5	39.9	40.7	42.5
DAY & NIGHT EQUIVALENT	48.9	46.3	44.8	43.0	45.1	46.2

Remarks:

LOCATIONS:

N1 - Within Mine Lease Area

N2 - Seegampatti Village

N3 - Naveen Garden Village

N4 - Kottaiyur Natham Village

N5 - Akkiyampatti Village

N6 - Lekka Nayakanpatti Village

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

*END OF THE REPORT***

& Researce

Chennal -

Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:
For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Terms and conditions:

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National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

416/15, DHARGAS ROAD, PERUNGALATHUR, WEST TAMBARAM, CHENNAI, KANCHIPURAM, TAMIL NADU, INDIA

in the field of

TESTING

Certificate Number:

TC-12339

Issue Date:

30/09/2023

Valid Until:

29/09/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL. (To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: SHRIENT ANALYTICAL AND RESEARCH LABS PRIVATE LIMITED

Signed for and on behalf of NABL



N. Venkateswaran Chief Executive Officer

ANNEXURE - 6 Blasting Agreement with Certificate

INRI

SELVAM EXPLOSIVES,

S.MARIANATHAN,
57/1. MAHARAJAPURAM 3rd STREET,
THIRUKOKARNAM,
PUDUKKOTTAI-622002,
EXPLOSIVE MAGAZINE AT MAVILIPPATTI,
MUSIRI TK, TRICHY DT

LICENCE No: E/HQ/TN/22/412(E81144) CELL No: 9442207256

DATE: 24.08.2023

To,

R.ARUMUGAM, S/o. RAMAIAH, No.47, NORTH STREET, LEMBALAKUDI, THIRUMAYAM (TK), PUDUKKOTTAI (DT),TAMILNADU.

Ref:-Your Letter Dated :Rc.No.302/2023 (G&M). Dated.23-08-2023

Sub:- Regarding blasting work using explosive to your proposed quarry.

Respected Sir,

We are having 2 explosive licences in From 22 holding licences No: **E25277** and **E81144**. Situated in survey **SF.No**:519/1A, Vellanoor village, Kulathur(tk), Pudukkottai(dt), **SF.No**: 143/1, Mavilippatti village, Musiri(tk), Trichy(dt). Our office functioning at 57/1, Maharajapuram 3rd street, Thirukogarnam, Pudukkottai Dt.

We are enacting 2 explosive vans for transporting detonators and class 2 separately for our magazine to our work site and well experienced and licensed blasters and shotfirer for safe blasting work since 10 years without untoward incident.

We are willing to undertake blasting work on contract basis at your **SF. No**:- 102/1A, 102/1B,102/1C,102/1D,102/1E,102/1F,102/1G,102/1H and 102/1I of LEKKANAYAKKANPATTI VILLAGE, MARUNGAPURI (TK), TRICHIRAPPALLI (DT).

THANK YOU

For SELVAM EXPLOSIVES

Enclosure: 1. LICENCE COPIES 2,

2. EXPLOSIVE VAN LICENCE COPIES 2.

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Rubrumy far 243



भारत सरकार | Government of India

वाणिज्य और उद्योग मंत्रालय। Ministry of Commerce & Industry पेट्रोतियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petraleum & Explosives Safety Organisation (PFSO)

पूर्व नाम- विस्फोटक विभाग | Farmerly- Department of Explosives

A और D - विग, ब्लॉक 1-8, ट्रसरा तत, शास्त्री भवन। A & D - Wing, Block 1-S, Ilad Floor, Shastri Bhavan

26 हज्जोउस रोड नुगमबक्कम मेत्रे | 26 ()addous Road, Nuugambakkam Chennai 600006 फोन (Phune):- 28281023 | फैक्स (Fax):- 28284848

\$ Act Fmail: (tecechennal@explosives.gov.in

HSII (No t: E/HQ/TN/22/412(E81144)

सेवा में। To.

M's Selvam Explosives.

No.57/1, Maharajapuram IIIrd Street, Phirugokarnam, Pudukkottai, ToxonWilloge - Thirugokarnam

District-PUDUKKOTTAL State-Tamil Nadu, Pincode - 622003

Survey No.143/1, ग्राम Mavilipani, जिला TIRUCHIRAPPALLI, राज्य Tamil Natlu में विस्फोटक के मैगुजीन में उपयोग के लिए कब्बा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E-HQ/TN/22/41 अE81144) के नवीनीकरण संदर्भ में।

Possession for Use of of Explusives from magazine situated at Survey No.:143/1, Mavilipatii, Dist. TIRUCHIR APPALLI, Tamil Nadii -Licence No.: E/HQ/TN/22-412/E81144) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding Subject

होत्य | Sir.

आपका उपर्युक्त विषय पर पत्र संख्या 85605 दिलांक 28/03/2023 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्ररूप LE-3 में जारी अनुहारित दिलांक 31/3/2028 तक नदीनीकृत कर इस पत्र के साथ जी जा रही है।

Reference to your letter No. 85605 dated; 28/03/2023, the subject livence duly renewed upto 31/3/2028 and issued in Furm LE-3 of Explosives Rules, 2008 is forwarded herewith.

नुवादि के आगामी नवीकरण हेत् कृपया निम्नलिखित दस्तावेज दिनांक 31/03/ 2028 से पहले इस कार्यांतय को भेजे जाएं

or further renowal of licence, please submit the following documents so as to reach this office on or before 31/3/2028.

प्ररूप आरई-। में विधितत पूर्ण एवं हस्ताक्षरित आवेदन।

Application in Form RE-1 duly filled in and signed.

एक से पाँच वर्ष के अनुश्राप्ति शुस्को का, विस्फोटक नियम, 2008 के तहत ऑनलाइन आवेदन पोर्टल पर उपलब्ध ई. भगतान सविधा के माध्यम से लाइसेंस शुस्क ऑनलाइन जमा किया जाना है। Licence fees renewable for one to five years, to be submitted online through e-payment facility available on online application portal under the Explosives Rules, 2008.

अनुमोदित प्तान के साथ मूल अनुवान्ति।

Criginal licence with approved plan. कृपया इस संबंध में ठिस्कोटक नियम, 2008 के नियम 112 का भी संदर्भ ग्रहण करें।

In this connection, please also refer to Rule 112 of Explosives Rules, 2008

विस्फोटकों के क्रम हेतु आरई-।। में मांगपत्र (इंडेंट) आपूर्तिकर्ता को दिया जाए और उसी की एक प्रति इस कार्यालय को भेजी जाएं (आतिशवाजी गोदाम के तिए तागू नहीं)।

Indent for purchase of explosives shall be placed in RE-11 with the supplier and copy of the same shall be sent to this office. (Not applicable for fireworks store house)

कृष्या विस्कोटकों की जैमासीक विवरणों हर तिमाही के अंत में अस्ई-7 में प्रस्तुत की जाए । विवरणी इस कार्यालय के कार्यालय में आगामी तिमाही के 10 तारीख से पहले पहुंच जानी चाहिए।आतिष्यक्षाजी गोदाम के लिए लागू नहीं ; | Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to reach this office by 10th of the succeeding quarter. (Not applicable for fireworks store house

सभी ब्लास्टिंग आपरेशन एक सद्धम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वैध शॉट फापर प्रमाणपत्र थारक हो। हालांकि, खान अधिनियम 1952 के अधीन आने वाले खानों में ब्लास्टिंग

आपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित हो।

All blasting operations shall be carried out by a competent person holding a valid shot fiver's permit granted under above rules. However, blasting operations in mines coming under the purview of the Mines Act 1952, the biasser shall have qualifications prescribed in the regulations framed under the said Act.

भवदीय। Your a faithfully

(अहिन नेदी | AHIN NANDI)

उप विस्कोटक नियंत्रक | Dy. Controller of Explosives

कते संपुरत मुख्य विस्फोटक नियंत्रक | For Joint Chief Controller of Explosives

दक्षिणांचल, चेन्ने | South Circle, Chensui

लिपि प्रेषित | Copy Forwarded to:

।. ज़िला मजिस्ट्रेट (District Magistrate), TIRUCHIRAPPALLI (Tamil Nadu)- सूचना के लिए (for information.)

कृते संयुक्त मुख्य विस्फोटक निर्यत्रक | For Joint Chief Controller of Explosives दक्षिणाचल, चेन्ने | South Circle, Chennat

दिनांक (Date) 30/03/2023

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट http://peas.gov.in देखें.) (For more information regarding status fees and other details please visit our website http://pess.gov.m)

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

R Arnon yan244

अनुज्ञप्ति प्ररूप एत. ई.न | LICENCE FORM LE-!

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुन्धेद अक) से (प) देखिए।) (See article 3(a) to (d) of Part Lof Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1.2.3,4,5 या वर्ग ा के विस्कोटक या किसी मेगजीन में वर्ग 6 के विस्कोटक रखने के लिए अनुहादि Licence to possess : (c) for use, explosives of class 1, 2.3,4,5 6 of 7 in a magazine

जनुशन्ति से. (Licence No.) : EALQ/TN/22/412(E81144) वार्षिक फीस रुपए (Annual Fee Rs): 11200/-

1. Licence is hereby granted to

M/s. Selvam Explosives (अधिभोगी / Occupier : Shri S. Marianathan Proprietor), No.57/1, Maharajapuram Illrd Street.
Thirugokarnam, Pudukkuttai., Town Village - Thirugokarnam, District-PUDUKKOTTAI, State-Tamil Nadu. Pincode - 622/003



को अनुज्ञप्ति अनुदत्त की जाती है।

2 अनुज्ञप्तिधारी की प्रास्थिति | Sums of licensee : Individual

अनुक्रप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है।
 Licence is valid only for the following purpose.

possess for use of Slurry Explosives. Safety Fuse, Detenating Fuse.

Detonutors. - के उपयोग के लिए

4. अनुहासि विस्फोदकों के निम्नलिखित किस्सों, प्रकार और मात्रा के लिए विधिमान्य है। Licence is valid for the following kinds and quantity of explosives: — (क) (2)

क	नाम और विवरण	वर्ग और प्रभाग	त्रप.क्रमण	मात्रा किसी एक समय में
Sr. No	Name and Description	Class & Division	Sub-division	Quantity at any one time
1,	Slurry Explosives	3.0	O	5000 Kg.
2	Safety Fuse	6.1	Ü	20000 Mus
3.	Detonating Fuse	6.2	0	50000 Mtrs
4.	Detonators	6,3	0	44000 Nos.

(ख) किसी एक कतैंडर मास में खरीदे जाने वाले विस्कोटक की मात्रा (अनुच्छेद ३(ख) और (ग) के अधीन अनुचाप्ति के लिए। (b) Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)] :

12 times us above.

5- निम्नलिखित रेखाचित्र (रेखाचित्र) से अनुसाद परिसर की पृष्टि होती है। The ticensed premises shall conform to the following drawing(s):

रेखाचित्र के. (Drawing No.) E/HQ/TN/22/412(E81144)

दिनांक (Dated) 22/07/2014

6 अनुत्राति परिसर निम्नलिखत पते पर स्थित हैं। The licensed premises are situated at following address: Survey No. 143/1 , ग्राम (Town/Village): Mavilipatti

जिला (District)

TIRUCHIRAPPALLI

पुलिस पाना (Police Station) : Thatbaiyangaspettai

राज्य (State) ई. मेल (E-Mail) Tamil Nadu

पिनकोड (Pincode)

फैक्स (Fax)

622003

दूरभाष (Phone) 7. अनुञ्जपित परिसर में निम्नतिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities.

: a main magazine room, a lobby and a detonator store room.

8. अनुज्ञानि समय — समय पर यथासंशोधित विस्फोटक अधिनियम. 1884 और उनके अधीन विश्वत विस्फोटक नियम. 2004 के उपबंधों, शतों और अतिरिक्त शतों और निम्नलिश्चित उपान्नद्दों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Amexures.

। उपर्युक्त क्रम से 5 में क्या कचित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विक्रण दर्शित करते हुए)। Drawings (showing site, constructional and other details) as stated in serial No. 5 above.

 अनुक्रप्ति प्राधिकारी व्याररा हाता.क्षरित इस अनुक्रप्ति की शर्ते और अतिरिक्ति शर्ते। Conditions and Additional Conditions of this licence signed by the licensing authority.

3. दूरी प्ररूप DE-2 | Distance Form DE-2.

यह अनुक्राप्त तारीख 31 मार्च 2018 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2018.

यह अनुक्रप्ति, अधिनियम या उसके अधीन विरवित नियमों या अनुसूची v के भाग 4 के प्रति निर्दिष्ट सेट-vn के अधीन तथा उपवर्णित इस अनुक्रप्ति की शर्ती का अधिक्रमण करने या यदि अनुक्रप्त परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लाग हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

ਗ਼ੀਬ | The Date - 22/07/2014

Sd-

मुख्य विस्कोटक निपंत्रक | Chief Controller of Explosives

Amendments :

Amendment of Quantity of Explosives/Monthly Purchase Limit dated: 29/08/2018

Amendment of Quantity of Explosives/Monthly Purchase Limit dated: 10/08/2020

नवीनीकरण के पृष्ठांकन के लिए स्थान Space for Endorsement of Renewal

नवीकरण की तारीख समाप्ति की तारीख अनुजापन प्राधिकारी के हस्ताक्षर और स्टाम्प Date of Renewal Date of Expiry Signature of licensing authority and stamp 30.03/2023 31.03/2028 It. Chief Controller of Explosives, South Circle, Chennai

> कानुनी बेतावनी : विस्कोटकों को गलत इंग से बलाने या उनका दुरूपयोग विधि के अधीन गंभीर दांडिक अपराध होगा। Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence noder the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

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Digitally signed by ArtiN NANCI Reason: Licence No. EHID/TN/22/412 Location Chemiu [E81144]

R. Arum Cam

🚁 में वर्ग 1.2.3.4.5.6. और 7 के विस्फोटकों को बिक्री या प्रयोग हेतु रखने के लिए प्ररूप एल.ई. 3 (अनुबोद 3 (ख) से (गा) में मुख्य विस्फोटक नियंत्रक या विस्फोटक नियंत्रक व्हारा प्रदान किए जाने वाले अनुसच्ति सं. E/HQ/TN 22/112/E81144) की गर्ते नियसिखित हैं ।

The following are the conditions of licence number E/HQ/TN/22/412(E81144) to possess for sale of usq. explosives of Class 1.2.3, 4, 5, 6 and 7 in a magazine in Form LE-3 (articles 3(b) to (c)) granted by Chief controller of Explosives or Controller of Explosives.

। परिसर में किसी भी समय विस्फोटकों की मात्रा अनुजापन योग्य सामर्थ्य से अधिक नहीं होगी ।

The quantity of explosives on the premises at any one time shall not exceed the beensable capacity. विस्फोटकों के भंडारण के लिए प्रयुक्तर होने वाली मैगजीन अनुसूची III और अनुस्राति के उपाबंध में विनिर्दृष्ट सुरक्षा दूरी बनाए रखना होगा। The magazine used for storage of explosives shall maintain safety distance specified in Schedule III and annesite to the heavee

मेगजीन का प्रयोग उन सभी विस्फोटकों के, जो इस अनुब्राप्ति में विनिर्दिष्ट है, रखे जाने के लिए और ऐसे रखे जाने से संबंध आधान या ओजार या उपकरणों के रखे जाने के लिए ही किया जाएगा; अन्यधा नहीं ।

The magazine shall be used only for keeping all explosives specified in this licence and of receptacles for or mole or implements for work connected with the keeping of such explosives

पैकानों को खोलने का कार्य और विस्फोटकों को तीलने तथा पैक करने का कार्य वैगाजीन में नहीं किया जाएगा ।

The opening of packages and the weighing and packing of explaint establing the carried on in the magnine. 5 दो या दो से अधिक वर्णन के विस्कोदकों की, जिन्हें मैगजीन में रखे जाने की अनुशा दी जा सकती है, मैगजीन में तभी रखे जाएंगे जब उनमें से प्रत्येक को, ऐसे प्रदीर्थ पा स्वरूप का कीई मध्यवर्री विभायक तमाकर या उनके बीच ऐसा मध्यवर्ती स्थान छोडकर, परस्पर पृथक कर दिया जाए कि किसी कहर से विस्कोदक में लगने वाली आग पा होने वाला विस्फोट किसी अन्य वर्णन के विस्फोटक तक न पहुंच सके , परंतु

[घ] 2 (नाइट्रेट मिश्रण), वर्ग 3 (नाइट्रो योगिक) के विभिन्न विस्फोटक, वर्ग 6 प्रथम प्रभाग के अतर्गत आने वाले सुरक्षा पत्नीते और वर्ग 6 प्रभाग 2 के अंतर्गत आनेवाले विस्फोटक

प्रेरक प्रतीते. जिनमें कोई खुला तोहाँ या इस्पात नहीं है, एक दूसरे के साथ बिना किसी मध्यवर्ती विभाजक या स्थायन के रखे जा सकते हैं ।

(ड) वर्ग ६ प्रभाग ३ के अंतर्गत आनेवाले विस्फोटक प्रेरक अलग रक्षे जाएंगे ।

व वर्ग । के अंतर्गत आने वाले बारूद को अलग रखा जाएगा ।

Two or more description or explosives which may be permitted to be kept in the magnetine shall be kept only if they are separated from each other by an intervening partition of such substance or obstracter, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other; Provided that-

(d) the various explosives of Class 2 (nitrate-mixture), Class 3 (miro-compound), safety flases belonging to Class 6 Division 1 and detonating flases belonging to Class 6 Division 2 as do not contain any exposed from or steel, may be kept with each other without any intervening partition or space;

(e) Detocators belonging to Class 6 Division 3 shall be kept separately.

(f) Gran powerfor belonging to Class I shall be kept separately.

6. वर्ग 3 (नाइट्रो योगिक) के विस्फोटकों को, उनके विनिर्माण की तारीख से एक वर्ष बीत जाने के पश्चात सिवाय अनुवायन प्राधिकारी की विसेष मंजूरी के मैगजीन में नहीं रखा

Explosives of Class 3 (nitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the

special sanction of licensing authority. 7 वर्ग 3 (नाइट्रो योगिक) के विस्फोटकों को, उनके विनिर्माण की तारीख से एक वर्ष बीत जाने के पक्षत मेगजीन में तभी रखा जाएगा जब कि किसी दिस्फोटक नियंत्रक ने इसके लिए विशेष मंजुरी दे दी हो ।

🕡 जब ऐसी मेंजुरी दे दी गई हो तो प्रत्येक निरीक्षण पर किसी विस्कोटक नियंत्रक से ऐसा लिखित प्रमाणपत्र अभिप्राप्त कर लिया जाए जिसमें दी गई मंजुरी के अंतर्गत आनेवाली

अवधि दर्शित की गई हो और ऐसे प्रमाणपत्र के अनुत्राध्विधारी अपने पास रक्षेगा और मांग की जाने पर प्रस्तुरत करेगा ।

(a) जब कोई विस्फोटक मानक शुद्धता का न रह जाने के कारण या द्रवणीकरण या नाइट्रो म्हीअसरीन या द्रव नाइट्रो योगिक के निकल जाने के विन्ह प्रकट होने के कारण नैगबीन में भण्डारित किए जाने के उपयुक्त नहीं रह जाता है तो अनुब्रप्तिधारी अपने ही व्यय पर ऐसे विस्फोटक के निएटारे के लिए ऐसे निर्देशों का अनुपालन करेगा जी मुख्य नियंत्रक या विस्फोटक नियंत्रक जारी करें।

Explosives of Class 3 (eitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the special senetion of the Controller of Explosives.

(i) When such sanction has been given, a written certificate showing the period covered by the sanction shall be obtained from the Controller of Explosives at

each aspection, and shall be kept by the licensee and produced on demand.

(ii) When an explosive owing to its being no longer of standard purity or owing to signs of liquetaction or of exuded nitro-glycenn or liquid nitro-glycenn or liquid nitro-compound is no longer in for storage in the magazine or store house the licensee shall comply, at his own expense, with such directions as to its disposal as the Thief Controller or Controller of Explosives may issue.

 मैंगर्जीन के भीतरा भाग या उसमें लगी बैंचो, शेल्फों और उसकी फिटिंग का इस प्रकार संविभीण किया जाएगा या उन्हें इस प्रकार अंतरित या अवतरित किया जाएगा कि विस्फोटक का किसी लॉह या इस्पात के साथ संपर्क रोका जा सके । भीतरी भाग में लगी बेंचे, शैस्के और फिटिंग प्रधासाध्य प्रिट से मुक्त एवं साफ रखे जाएंगे तथा ऐसे विस्फोटक जो जल से खतरनाक रूप में प्रभावित हो सकते हैं, इस बाबत सम्यक सावधानी बरती जाएगी कि वहां कोई जल मौजूद न रहे : परंतु किसी लोहें या इस्पात के खुले होने के विरूद सावधानी से संबंधित इस शर्त का वह भाग ऐसे किसी भवन में बाध्येकर नहीं होगा जिसमें वर्ग 6 (गोला बारूद) के प्रथम के विस्फोटक से भिन्न कोई विस्फोटक रखा गया है ।

The interior of the magazine and the benches, shelves and firtings therein shall be so constructed or so lined or covered as to prevent the exposure of any iron of steef contact with the explosives. Such interior, benches, shelves and fittings shall so far as is reasonably practicable, be kept free from grit and shall otherwise be clean; and in the case of any explosives liable to be dangerously affected by water, due precautions shall be taken to exclude water there from: Provided that so much of this condition as relates to precautions against the exposure of any iron or steel shall not be obligatory in a building in which no

explosive other than explosive of the 1st Division 6th (Autonomition) Class is kept.

प्रार्थित विकार बातक का परीक्षण विस्फोटक नियंत्रक करता है तो अनुवाधिकारी ऐसे परीक्षण के लिए विकित फीस का संदाय करेगा यदि परीक्षण असमाधानकारी साबित होता है तो उतनी ही प्रीस अनुवाधिकारी व्हारा पक्षात्वर्ती प्रत्येक परीक्षण के लिए तब तक कि परीक्षण अधिकारी तिवित वालक को समाधानप्रद घोषित नहीं कर देता

परंतु किसी एक परीक्षण के लिए देय फीस किसी एक दिन के दौरान किसी चालक के किए गए सभी परीक्षणों के लिए प्रभार्य होगा परंतु यह और कि यदि दो या अधिक तडित चानक एक ही मैगजीन से संबद्ध है तो ऐसे सभी चालकों के परीक्षण के लिए कीस ऐसी किसी फीस से अधिक नहीं होगी जो किसी एक तिहेत बालक के मरीक्षण के लिए हर स्थिति में विहित की गई है ।

If the lighting conductor is tested by the Controller of Explosives, the licensee shall pay the fees prescribed for test. In the even of the test proving unsatisfactory, the same fees shall be payable by the licensee for each subsequent test until the lighting conductor is passed by the testing officer as satisfactory

Provided that the fees payable for a single test shall be charged for all tests made on a conductor during any one day

Provided further that where two or more lighting conductors are attached to one and the same magazine, the fee for the testing of all such conductors shall not exceed the fee prescribed in this condition for testing a single lighting conductor.

10. उपयुक्त तथा जेब रहित कार्यकरण दस्तों , उपयुक्त जूनों के प्रयोग व्यास तथा तलाशी लेकर या अन्यथा अधवा ऐसे किन्हीं साधनों व्यास इस कहत सम्यक उपबंध किया जाएगा कि फैनट्री परिसर में अप्नि, दियासलाई अथवा ऐसी कोई वस्तुोए या पदार्थ, जिससे विस्फोट हो सकता है या आग लग सकती हो, किन्तु इस शर्त के कारण ऐसी सरवना, स्थिति या स्वरूप में किसी कविम बती का प्रवेश वर्जित नहीं है जिससे आग लगने या विस्फाट होने का खतरा न हो

परंतु इस शर्त का वह भाग, जो लोहे या इस्पात के अपवर्जन को लागू होता है, ऐसे किसी भवन के संबंध में बाच्य कर नहीं होगा जिससे भिन्न कोई विस्फोटक नहीं रखा गया है । Due provisions shall be made, by the use of suitable working ciothes without pockets, suitable shoes and by searching or otherwise or by such means, for preventing the roundaction into danger arms of the factory premises of fie, Unciter matches or any substance or article likely to cause explosion or fire, but this condition shall not prevent the introduction of an artificial light of such construction, position or character as not to cause any danger of fire or explosion. Provided that so much of this condition as applies to the exclusion of iron or steel, shall not be obligatory in a building in which no explosive other than an

explosive of the 1st Division of the 6th (Ammunition) Class is kept.

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 अनुजाप्तिधारी प्ररूप आर है - अर आर है - व या आर है - 5, जैसी स्थिति हो, में सभी विस्फाटको का आंभतल और लेखा रखेगा और विस्फाटक नियम, 2008 के अधीन प्रविकृत किसी भी अधिकारी के समक्ष उसके व्दारा ऐसा करने की मांग की जाने पर स्टाक पुस्तक और अभितेख प्रस्तुत करेगा । स्टाक पुस्तक विहित प्रोफार्मा में पृष्ठ संख्या केत होती 🔎 The licensee shall keep records and accounts of all explosives in Forms RE-3 and RE-4 or RE-5, as the case may be, and exhibit the stock books and record any of the officers authorised under the Explosives Rules, 2008 whenever such officer may call upon him to do so. The stock books in the prescribed professiva shall be page numbered.
12. परिसरों में कोई परिवर्तन या तबदीली अनुज्ञापन प्राधिकारी के पूर्वानुमोदन बिना नहीं की जाएगी और अनुज्ञप्तिधारी ऐसी किसी शर्त का अनुपालन करेगा जो इस निमित्त अनुज्ञपन

पाषिकारी विनिर्दिष्ट करें।

No changes or alterations shall be carried out to the premises without prior approval of the licensing authority and the licensee shall comply with any condition

that may be specified by the licensing authority in this behalf.

 मैंगजीन सभी समयों पर अच्छी मरम्मत की स्थिति में बनाई रखी जाएगी (या अच्छी हालत में बनाई रखी जाएगी : । यदि किसी कारणवश्च किसी विस्फोटक के भण्डारण के लिए भैगजीन अनुपयुक्त हो जाती है तो अनुज्ञप्तिधारी इस बात की सुचना अनुज्ञापन प्राधिकारी को तुरंत देगा । Magazine shall at all times be kept in state of good repair for maintained in good condition). The licensee shall report to licensing authority formwith, if the

magazine becomes unfit for storage of any explosives for any reason whatsoever.

मैंगजीन का अनुश्राप्तिधारी इन नियमों के नियम 24 के उप-नियम 3 के अनुसार त्रैमासिक विवरणी प्रस्तुत करेगा । The licensee of the magazine shall submit quarterly return as per sub-rules (3) and (4) of rule 24 of these rules

14. यदि सुरक्षा दूरी का कोई अधिक्रमण होता है तो उसकी सूचना अनुञ्जापन प्राधिकारी को आवश्यक सलाह और कार्यवाही के लिए तुरंत दी जाएगी ।

Any encroachment of the safety distance shall be immediately communicated to the licensing authority for necessary advice and action. यदि कोई विस्फोटक दिनष्ट हुआ अथवा अनुपयोगी जाया जाता है तो उसकी सूचना अनुऋपन प्राधिकारी को, सलाह प्राप्त करने के लिए, तुरंत दी जाएगी ।

The licensing authority shall be immediately informed for advice if any explosive is found deteriorated or unserviceable.

16. विस्फोटकों के पैकेटों के चट्टे इस प्रकार लगाएं जाएंगे कि कम से कम एक व्यक्ति भण्डार किए गए सभी पैकजों की हालत की जांच करने और प्रत्येक पैकेज की विनिर्माण विशिष्टियों को पढ़ने के लिए उनके बीच से होकर आ जा सके ।

The explosive packages shall be stocked in such a way so as to allow movement of at least one person to check the condition of all packages stored and to read the manufacture particulars of each package

तडित चालकों की भूमि के लिए प्रतिरोध यथासंभव न्युनतम होगा और किसी भी दशा में 10 ओहा से अधिक नहीं होगा ।

The resistance of the lightning conductor to earth shall be as low as possible and in no case be more than 10 ohms. 17. मैगजीन के चारों और 15 मीटर की दूरी के अंतर्गत कोई खुल्क घास या झांड़ी या ज्वलनशील सामग्री नहीं रहने दी जाएगी ।

A discance of 15 meters surrounding the magazine or store house shall be kept clear of dried grass or bush or flammable materials.

18. विस्फोटकों के प्रत्येक पैकेट की, जब उसे मैगजीन के भीतर लिया जा रहा हो, ठीक दशा जानने के तिए परीक्षा की जाएगी 1 Every package of explosive at the time of bringing inside the magazine shall be examined for its sound condition.

 किसी मैगजीन अंडारगृह में किसी एक समय में चार व्यक्तियों से अधिक की नहीं रहने दिया जाएगा । Not more than 4 persons shall be allowed inside the magazine or store house at any one time.

20. विस्फोटकों के खाली पैकजों को सीचांतसीच वहां से हटा दिया जाएगा और नष्ट कर दिया जाएगा । Empty packages of the explosives shall be removed at the earliest and desitroyed

21. अनुसन्तिधारी और कर्मचारीयों को परिसर के भीतर आपाठकाल के दौरान की जाने वाली प्रक्रियाओं से अवगत होना चाहिए ।

The licensee and the employee shall be conversant with procedure to be taken during the emergency within the premises. 22 निरीक्षण या नमूना अधिकारी को सभी युक्तियुक्त समयों पर अनुज्ञत परिसर में अबाध रूप से पहुंचने दिया जाएगा और यह सुनिश्चित करने के लिए कि अधिनियम और इन नियमों के उपबंधों और सुरक्षा स्थितियों को सम्यकत: अनुपातन किया जा रहा है, अधिकारी को प्रत्येक सुविधा प्रदान की जाएगी ।

Free access to the licensed premises shall be given at all reasonable times to any inspecting or sampling officer and every facility shall be afforded to the officer

for ascertaining that the provisions of the Act and these rules and the safety conditions are duly observed.

23. यदि अनुजापन प्राधिकारी या विस्फोटक नियंत्रक अनुजाप्तिधारक को अनुजात परिसरों या मशीनरी, टूल या उपकरण में ऐसी कोई मरम्मत या परिवर्धन या परिवर्धन करने पा विफारिशों को लागू करने को लिखित रूप में सूचित करता है जो परिसर के अंदर या बाहर या व्यक्तियों की सुरक्षा के लिए आवश्यक है, अनुसाप्तिधारक सिफारिशों को निष्पादित करेगा और विनिर्दिष्ट अवधि के भीतर अनुपालन रिपोर्ट ऐसे प्राधिकारी को देगा ।

If the licensing authority or a Controller of Explosives informs in writing, the holder of the licence to execute any repairs or to make any additions or alterations to the licensed premises or machinery, tools or apparatus or carry out recommendations, which are in the opinion of such authority may pose unacceptable risk and so necessary for the safety of either on-site or off-site of the premises or persons, the holder of the license shall execute the recommendations and report compliance within the period specified by such authority.
24. अनुहाप्तिधारी मैगजीन में रखने और बिक्री के लिए प्राधिकृत विस्फोटक सूची में उल्लिखित अनुसत फैक्टरी या कंपनी से प्राधिकृत विस्फोटक । आंतिशबाजी या सुरक्षा पतीते

The licensee shall purchase authorised explosives/ fireworks or safety fuse as mentioned in the list authorised explosives from a licensed factory or company for 25. निम्न से अधिक ध्वनि स्तर उत्पादित करने वाले आतिशवाजियों पटाखों की बिक्री और रखने के लिए –

(क) जो फटने की जगह से चार मीटर की दूरी पर है, 125 डी.बी.(ए1) या 145 डी.बी.(सी)पी के प्रतिबंधित होंगे.

(ख) शृंखला (जुड़े हुए पटाख) को गठन करने वाले व्यक्तिगत पटाखों के लिए उपर्युक्त उल्लिखित सीमा 5 लॉग 10(एन) डी.बी. (सी) पी.के.प्रतिबंधित होंगे ; The possession and sale of fire-crackers generating noise level exceeding

a) 125 dB(Al) or 145 dS(C)pk at 4 meters distance from the point of bursting shall be prohibited:

b) For individual tire-cracker constituting the series (joined fire-crackers), the above mentioned limit be reduced by 5 log10 (N) dB, where N = number of

26. आग या विस्फोट व्हारा दुर्घटना या नुकसान पटाखों की कभी या बोरी, तुरंत पास के पुलिस थाने और अनुज्ञापन प्राधिकारी और अनुज्ञापन प्राधिकारी के स्थानीय कार्यालय को

Accidents by fire or explosion and losses, shortage or theft of explosives shall be immediately reported to the nearest police station and the licensing authority

'विरिक्त पार्ते | Additional Conditions :

ा. अनुसप्तीधारी विदेखी मूल के आविश्ववाणी को ना प्रदर्शित करेगा. ना रखेगा और ना ड्री उसकी किया I The December shall not exhibit, passess and sell throwarks of foreign wights.

कृते मुख्य विस्फोटक नियंत्रक For Chief Controller of Explosives

: - This is system generated document does not require physical signature. Applicant may take printout for their records.

Form DE-2 (See rule 113 of the Explosives Rules, 2008) (Distance Form to be attached to the licence)

Safety distances required to be kept clear around magazine for high explosives or fire works or factory licence number E/HQ/TN/22/412(E81144) in form LE-3 granted to M/s. Selvam Explosives, No.57/1, Maharajapuram IIIrd Street, Thirugokarnam, Pudukkottai, Tamil Nadu-622003.

	Type of Structure(s) Sa					
	Inside Safety Distances(ISD)	51	174			
1	Room or Workshop used in Connection with the Magazine	44				
3	Any other Explosives Magazine or store House or Factory of the Applicant Magazine Office	100.71				
	Middle Safety Distances(MSD)					
4	Magazine Keeper's or Chowleidar's Dwelling house					
5	Railway including Minerals and Private Railways					
6	Canal (in active use) or other navigable water					
7	Dock or Pier or Jetty					
8	Public Highway or Public Road		194			
9	Private Road which is PRINCIPAL means of access to a Temple, Mosque, Church,					
	Ourugwara or other places of worships, Hospital, College, School or Factory					
0	River Embankment or Sea Embankment or Public Well					
T	Reservoir or Bounded tank/rope way					
2	Windmillor or Solar panel for Power Generation					
	Outside Safety Distances(OSD)					
	Dwelling House					
4	Govt. and Public Building					
5	Temple, Mosque, Church or Gurudwara or other Places of Worships					
0	Shops, Market place, Public recreation and Sports Ground, College, School, Hospital					
	I heater, C mema or other Building where the public are accustomed to assemble					
	Factory					
6	Buildings or Works used for the Storage in Bulk of Petroleum, Sprit, gas, or other					
	inhammable or hazardous substances	2.0	97			
9	Building or Works used for Storage and Manufacture of Explosives or of articles	3	87			
0	which contain Explosives Aerodrome					
	Furnace, Kiln or Chimney					
	Quarry or mine pit head					
3	Power House or Electric Substation					
	Wireless Station		7			
	Warehouse or other Storage Building					
	Any other Protected works					
	Overhead Electric lines	-				
7	Electric Power over head Transmission Lines above 440V	TA CA	4			
8	Electric Power over head Transmission Lines upto 440V		0			
_	Salari May 1101	I.	5			

The Date: 22/07/2014

For Chief Controller of Explosives

Amendments:

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated: 29/08/2018
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated: 10/08/2020

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GOVERNMENT OF INDIA MINISTRY OF COMMERCE & INDUSTRY PETROLEUM AND EXPLOSIVES SAFETY ORGANISATION (PESO)

(Formerly Department of Explanives) 4 & D. Wing, Block 1-8, Had Floor, Shazir: Bhavan 26 Hoddow Road, Nangambakkam Chemai 600006 Tele: 28281923 Fax. 28284848 Email: jiccochennai@explosives.gov.in

No. E.SC/TN/25/215/F2869W

School Landonian

President Commencium, 1911, Makarajapurum Int Street Physiologicum, Patrickian PSV 423607

Town Milege - Publicania

Des TRUENIKAPRALIZA Same Tamil Node, President STORY

Subject Read Von the currings of Explosive: Registration No TN-52/Z-6849 Licence Na.ESC/TN/25/815/E88699) granted in Form LE-7 of al Explosives Raise 2004 - Reserval regarding

Satis

Reference to your fourt No.: #4001 detail: 23-0012023, the subject because duty conventions 31/02023 and sound in Form 1 F-7 of Explosives Nation, 2006 is Consumed because

For factor constant of factors, please satisfied the following decaposes so as so reach this office on as before \$1/5/2023

Application in Form RE of stuly filled to and stance.

Lieuters from many other for ourse to five prime to be automated only of ferragin to payment faculty available or order application partial makes the Explain or Partial, 2005.
 Original income with approved plan.

In this correction, please also order to Rule 112 of Explosives Rules, 2008.

Pictae follow fullewing interactions ratioly:

- If The records of explanates is impound by the become Routine shall be maintained in the proforms RE-1 make than the Park 5 of schedule V of Englances States 2008.

 Please cashes that records which as investigating the face hard parks or shall not be for a substantial process of explanation of the states of t 2. Please upday that remain whose a
- If Please the mindred design appropriate of explosives the Readless shall always as attended to by two sensed guards. If the consequence of explosives in their to pass through sensetive areas worked by Minstery of House, Arthurs, a classical by account of the account of guard provided by Domes Police Administration as required to their ACT year Explosives Roles 2000.

Encloseres :

Times Sald-Sald-

Sect (Magaza)

ARIN NANDO Dy. Controller of Explosives For home Chest Committee of Exposures Straff Chelly Channel

Costs Flattenhold to:

1. District Magnerate, T1912 CMIRAPPALAL (Tamil Nada) for Information.

For him Chief Chemistry of Eigher South Circle, Change

the service care representation and the professional profession for the professional professiona

Note: This is system generated document does not require physical signature. Applicant may take printout for their records.

R Amm of any 249

अनुत्रप्ति प्ररूप एलई - 7 | LICENCE FORM LE-7 (विस्फोटक नियम 2008 की अनुसूची 4 के भाग । का अनुकोद ? देखें। (See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सडक वैन मैं विस्कोटकों के परिवहन के लिए Licence to : transport explosives in a road van'

अनुसारित संख्या / Licence No. : E/SC/TN/25/815(Edita99) वार्षिक फीत रूपए / Anemal For Rs 2500 -



अनुज्ञप्ति पतदद्वारा जारी की जाती है

Livence is hereby granted to :

Selvam Explosives (Occupier : S.Marianathan,)

Prop.S. Marianathan, 57/1, Maharajapuram 3rd Street, Thirukokarnam, Pudukottai PIN 622002,

District-TIRUCHIRAPPALLI, State-Tamil Nadu, Pincode-622002

2. अनुराजिधारी की प्रास्थिति / Status of licensee : Proprietorship Firm

3. संडक वेन की विशिष्टियाँ / Particulars of the road van.

पंजीकरण संख्या Registration No.

यान का मेक एवं मॉडल 'Make and model of vehicle

लदान रहित वजन Unladen weight

लदान सहित अधिकतम वजन / Maximum laden weight

परिकान के लिए अनुबेध विस्फोटकों की अधिकतम माना Maximum quantity of explosives permitted for transport

इंजिन संख्या / Engine No.

चैंसिस संख्या / Chassis No.

अन्य फिटिंग्स का विवस्मा / Desription of Other Fittings

वाहन के लिए अनुमत्य विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry

TN-52/Z-6049

MAHINDRA AND MAHINDRA LTD/MAX PICKUP BSH

1400 Kg(x)

2300 Kg(s)

900 Kats)

GASIL27617

MAIRZ2GAA81L56224

As per approved drawings

4. अनुहारत परिसर निम्नतिखित आरेखण । आरेखणों) के अनुरूप होना चाहिए / The licensed premises shall conform to the following drawing(s): आरिक्षण संस्ता / Drawing No.: E/SC/TN/25/815/E868991 दिनांगा / dated : 25/04/2014

 समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निमृतिखित अनुलग्रकों के अधीन अनुश्रादि प्रदान की जाती है।

The ligence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures...

- (क) उपर्यक्त कम संख्या 4 में पाधकपित सड़क वेन का ओरेखण / (a) Drawings of the road van as stated in serial no. 4 above.
- (ख) अनुशापन प्राधिकारी द्वारा हस्ताकरित गति (b) Conditions signed by the licensing authority.
- 6 यह अनुवादि तारीख 31 मार्च 2019 तक विधिमान्य रहेगी. This licence shall remain valid till 31st day of March 2019

यह अनुक्राप्ति, अधिनियम या उसके अधीन विश्वित नियमों या इस अनुक्षप्ति की शतों के उल्लंधन, अनुसूची 5 के भाग 4 में सन्दर्भित, जहाँ भी लागू हो. या यदि अनुक्रप्त परिसर आरेखण या उससे संतप्न उपाबद्धों में दर्शाए गए विवरण के अनुरूप नहीं पाए जाने पर निर्ताम्बित या प्रतिसंहत की जा सकती है ।

This ficence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under Conditions, wherever applicable, referred to in Part 4 of Schadule V or if the licensed premises are not found conforming to the description shown in the plans and annexture attached hereto.

दिनाक Dute 25/04/2014

संप्रश्त मुख्य विस्फोटक निपंत्रक ; Jaint Chief Castroller of Explusives वृद्धिणायतः थेत्रे | South Circle, Chennai

अनुवानि के नवीनीकरण हेतु पृष्ठांकन / Kadonsement for renewal of licence

वैधवा सम्बन्धि की तिथि अनुसारन पाविकारी के हस्साधर යුරුවනයකු මේ දින්ම Signature of liceroing authority Date of Renowal Date of Espiry Jr. Chief Convoller of Explosions, South Circle, Change. \$6/03/2023

वैधानिक वेतावनी विस्कोटकों का लापरवाही से प्रयोग या दुरूपयोग विधि के अधीन गर्मीर दाण्डिक अपराध होगा । Standary Warning: Minimaling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

Rodmin

pholy signed by Arth NASCO agon Licence No. ESC/TN 25:81 Location Charma (ESCERT)

(ACCunditions | Cunditions)

संडक वेन में विस्कोटकों के परिवहन के लिए प्ररूप एल.ई.-7 में विस्कोटटक नियंत्रक खारा प्रदान किए जानेवाले अनुकृत्वि संख्या E/SC/TN/25/815(E80899) की शर्ते निम्नतिखित हैं।

The following are the conditions of licence number E/SC/TN/25/815(E80899) to transport explosives in a road van in Form LE-7 granted by Controller of Explosives.

वह अनुवासि किसी क्रम्य सहक वैन को अंतरखीय नहीं है।

This license is not transferable to any other explosives wan

2 पान, उसको बाँडी और अन्य किटिम्स में कोई भी परिवर्तन, अनुजापन प्राधिकारी के अनुमोदन के बिना नहीं किया जान वाहिए। No alterations should be made as the selecte, in body and other fittings without approval tions the beauting authority

). यह अञ्जानि या उत्तको क्षिप्रमाणित प्रति सदैव तैन में रखी जाएशी एवं निरीक्षण अधिकारी के यांगे वाले पर उसे प्रसृत किया जाएशा। This licence or its authenticated copy shall at all times be lept in the ven and produced on demand by an suspecting officer.

- 4. सहक यान का. विस्कोदकों के प्रस्वितन के किए तब तक प्रयोग नहीं किया जाएगा जब कर कि वह ठीक हातत में नहीं है और विस्कारक नियम 2006 का अनुमालन पहीं करते है। The count van shall not be most for
- The road van shall not be used for insequent of explosives unless is as a fit condition and complies with the Explosives Rules. 2008 5. सहक पान का ज्योग. इस अनुकारित दारा प्राधिकृत समग्री से पित्र किसी सामग्री के लिए तक तब नहीं किया जाएगा जब तक कि अनुसारन प्राधिकारी द्वारा इसकी लिखिल अनुमति न दे दी हो। The road van shall not be used for managent of any managed other than that authorized by this because unless permitted by because authorized by the because of authority at writing.

6. सड़क पान में पुस्त्रान नहीं किया कारणा न उसमें अपि या कृतिम प्रकाश या कोई ऐसे वस्तु श्रिससे आग तम सकती हो, की अनुमति ही जाएगी। No senseing and no fire or senticial light or any selectic capable of causing fire shall be allowed in the explanates van.

7. यात का प्रयोग यात्रियों के बहुत के लिए नहीं किया जाएगा। The vehicle shall mit be used for carrying passenger

- 8. जिस समय सङ्क यान पर विस्फोटकों को तदाई वा परिवहन किया जा रहा हो, तस समय सङ्क यान ऐसे किसी सक्षम क्यून्ति के प्रभार में होगी जिसे निस्फोटकों की घरा-उठाई करने का अनुभत है और उनसे पूर्णतः परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या यान अनुभति परिचित है। व्या परिचल के साथ हो जान अनुभति परिचल के साथ हो जान के नता के तिए प्राय कुल किया गया हो, तैन के साथ हो जाना जाएना और किसी निर्मेक्षण अधिकारी द्वारा मांग की जाने पर तसे पेश किया जाएना।
 - Rused van, white explosives are being leasted or unloaded or transported shall always be under the charge of competent person who shall be experienced in leastling of explosives and fairly conversant there under, where the vehicle is not shaven by the forence helder, a document signed by the forence national persons amborised to drive and accompany the vehicle shall be carried as the var and produced no demand to an imprecing efficient.

9, सड़क यान में किसी भी विस्तारिक का परिवर्त तब तक नहीं किया बाएगा जब तक कि वे विस्कारिक नियारों के अनुसार या मुख्य विरक्षितक नियंत्र होता से पैक न कर दिए गए हों। No employiest unless they are packed to accordance with the Employies Roles or in a munior specified by the Chief Committee shall be transported in the explanates van.

 किन्ती अन्य विकारितकों के साथ विटानेटर्स का परिवहन नहीं किया जाएगा। Desendany shall not be consported with any sales explosives.

11 पदि सड़क पान में कोई टूट कुट हो जाती है मा उसमें आग तम जाती है या विस्कोट हो खाता है अथवा सड़क पान इनमें किसी में अंतर्पस हो खाती है तो ऐसी टूट फुट, दुर्घटना, अपि था विस्कोट की पूरी रिपोर्ट के साथ हुए एवं की जानकारी अनुवासन पाणिकानी को तुनना हो जाएगी। यदि ऐसी दुर्घटना, अपि या विस्कोट में किसी व्यक्ति को मृत्यु हो जाती है का किसी वर्धकर या समर्गत को सम्बोर क्षिर पहुँचती है तो उसकी रिपोर्ट निकटतम प्रतिक देशन को युस्त हो आएगी।

Any healtdown, occisions, the or explosion occurring in or involving the road van, shall be immediately reported to the literating unitarity together with a full report of such breakdown, accident, the or explosion. If such accident, fire or explosion is attended with lost of human life or excitor injury to purson at property, a report shall also be made introducted up the neutral Police Station.

विस्कोटकों को यान में प्रशेषक के अनुहात परिसर में ही तादा जाएगा और परिवर्त के अनुहाल परिसर पर में पान से उतारा सावगा।

The emphasives shall be leasted into the time only at the licensed premises of consignor and automated from the van at the becaused premises of the consignor.

अनुकरियार्थ करवाइन क्रिए जाने कारे विसम्रोटकों का तेखालोका प्ररूप आरई-६ में रखेगा और निरीक्षण अधिकारी द्वारा पांचे जाने पर प्रस्तुत करेगा।
 The Sections shall measure are out of explosives transported in Form RE-6 and present the same on domaind by an impercise officer

अनुकारियारी और करीवारी परिस्प के भीतर आपात के दौरान की बाने वाली प्रक्रिया से अवगत होंगे।

The however and the amployee shall be conversant with procedure to be rates during the surregency within the primities.

15. किसी निर्मित करने या नम्मा तोने बाते ऑधकारी को जम्मे मुक्तियुका समय पर अनुस्य गरेसर में अबाध महुँच प्रयान की जाएगी और यह अभिनिश्चित करने के दिए कि अधिनियम और इन नियमों के उपबन्धी तथा बुरक्क सम्बन्धी करों का सम्पन्न रूप में शांतन किया बाता है. यस अधिकारी को प्रतीक सुधिया उपलब्ध कराई जाएगी।

Free secess shall be given at all reasonable times to any inspecting or sampling officer and every facility shall be afforded to the officer for ascertaining that the provisions of the Act or these released than conditions are duly observed.

16. जर्द अनुसान ब्राविकारों या जनजोटल नियंत्रक, लिखित में अनुस्रातिधानक को ऐसी संस्थानियों को विस्तानिया करने के किए, जो ऐसे प्राप्तिकारी जी साथ में आग्रम ब्रिटिय उत्पन्न कर सकता है और रुपत पर व्य स्थल से ब्राह्मियों को निष्पादित करेगा और ऐसे प्राप्तिकारी हारा विनिर्देष्ट अवधि के भीतर अनुमत्तन की रिपोर्ट देगा।

If the licensing authority or a Controller of Explosives informs in writing , the holder of the license to carry out recommendations, which are in the opinion of such authority may pose unacceptable risk and so necessary for the safety of either so-size or off-size persons, the holder of the license shall execute the recommendations and report compliance within the person specified by such authority.

अधि या निसमोदक के कारण होने वाली दुर्गाटना और विसमोदकों की हानि, कभी या चोरी के बारे में निकटतम पुलिस स्टेजन और अनुआपम प्राधिकारी तथा अनुकापन प्राधिकारी के स्थानीय कार्यालय को तुरन्त रिपोर्ट की काएंगी।

Accidents by fire or explosion and lowes, shortage or theft of explosives shall be immediately reported to the meanest police station and the licensing authority and local effice of the meaning

कृते संयुक्त मुख्य विस्फोटक नियंत्रक For Joint Chief Controller of Explosives दक्षिणांचल, चेत्रे | South Circle, Chennai

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

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ANNEXURE - 7Land Documents

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வல்கள் 27-02-2023 அன்று 09:23:18 AM நேர்ந்தில் அச்சடிக்கப்பட்டது

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