

DRAFT EIA & EMP FOR PROPOSED ROUGH STONE AND GRAVEL QUARRY CATEGORY – B1 (CLUSTER)

(Public Hearing Upgraded after Terms of Reference (ToR) as per the provisions of
EIA Notification 2006 & amendments thereof)

TOR IDENTIFICATION NO. T025B0108TN5967367N DATED: 13/05/2025

PROPOSED QUARRY LEASE DETAILS	
SURVEY NO	39/4
VILLAGE	KAGANAM
TALUK	VENBAKKAM
DISTRICT	THIRUVANNAMALAI
EXTENT	2.06.5 Ha
CLUSTER EXTENT	15.52.0 Ha
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	2,71,250 m ³ of ROUGH STONE, 31,476m ³ of GRAVEL & PEAK PRODUCTION OF ROUGH STONE -54,550 m ³
LAND	PATTA LAND

(Sector No. 1(a) Sector No.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 15.52.0 Ha
Baseline Monitoring Period – Dec 2024 to Feb 2025

APPLICANT

TVL.SSS MINES
PARTNER THIRU.M.SIVA,
S.F.NO.39/4, 40/2A2 & 129/4B1B, KAGANAM VILLAGE,
VENBAKKAM TALUK, TIRUVANNAMALAI DISTRICT.

ENVIRONMENTAL CONSULTANT	LABORATORY
M/s. GLOBAL MINING SOLUTIONS <i>(NABET Accredited & ISO 9001 Certified Consultant)</i> Plot No. 6, S.F.No. 13/2, A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamil Nadu – 636 455. NABET Accreditation No: NABET/EIA/23-26/SA 0241 Valid up to: 04.01.2026 Contact: 97502 23535 & 94446 54520 Email: infoglobalmining@gmail.com , globalminingsolutionssalem@gmail.com	M/s. SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED <i>(NABL Accredited Testing Laboratory)</i> Valid up to: 29.09.2025 #416/15, Dhargas Road, Perungalathur, West Tambaram, Chennai, Tamil Nadu, India.

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, Tvl.SSS Mines, Partner Thiru.M.Siva for the confidence and trust placed on the organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone and Gravel quarry over a lease extent of 2.06.5 Ha in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State 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 Draft EIA/EMP report. Our sincere thanks to the local people of Kaganam 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. Prabu)

Managing Director

UNDERTAKING

In line with MoEF 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 lease extent of 2.06.5 Ha & Cluster extent of 15.52.0 Ha located at Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

For: M/s. Global Mining Solutions



Name: M.Manikandan

EIA Coordinator – Mining

UNDERTAKING

In Line with 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 ToR Lr.No.SEIAA- TOR IDENTIFICATION NO. TO25B0108TN5967367N DATED: 13/05/2025, have been incorporated in the draft EIA/EMP report of the proposed Rough Stone and Gravel Quarry over a lease extent of 2.06.5 Ha, & Cluster extent of 15.52.0 Ha, located at Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State for the production of 2,71,250 m³ of Rough Stone and 31,476m³ of gravel m³ from the proposed lease area and the details has been complied in the Draft 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/23-26/SA 0241, valid till 04.01.2026.

For: M/s. Global Mining Solutions


Name: M.Manikandan
EIA Coordinator – Mining



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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-A** under the **QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors-**

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		NABET	MoEFCC	
1	Mining of minerals including opencast/ underground mining	1	1 (a) (i)	A
3	Thermal power plants	4	1 (d)	B
5	Metallurgical industries (ferrous)	8	3 (a)	A
6	Cement Plants	9	3 (b)	A
26	Building and construction projects	38	8 (a)	B
27	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated May 20, 2025, posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/25/3638 dated May 30, 2025. The accreditation needs to be renewed before the expiry date Eco Chem Sales and Services, Surat following due process of assessment.

Valid up to
January 4, 2026

Issue Date
May 30, 2025



Certificate No.
NABET/EIA/23-26/SA 0241

Varinder Kanwar
Prof (Dr) Varinder S Kanwar
CEO - NABET

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

DECLARATION BY EXPERT

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over a lease extent of 2.06.5 Ha. & Cluster extent of 15.52.0 Ha, located at Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

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

EIA Coordinator Name: M. Manikandan



Signature & Date

Period of involvement: Dec 2024 to Feb 2025.

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

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

S. No.	Functional areas	Name of the expert/s	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 measures for air pollution. <u>Period: Dec 2024 to Feb 2025.</u>	R. Dhanal
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. <u>Period: Dec 2024 to Feb 2025</u>	K. Abirami
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: Dec 2024 to Feb 2025</u>	C. Ramadoss
4	SE	Sarasvathy K	Baseline SE studies. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. <u>Period: Dec 2024 to Feb 2025</u>	K. Sarasvathy
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: Dec 2024 to Feb 2025</u>	S. Saravanan
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. <u>Period: Dec 2024 to Feb 2025</u>	N. Ravinthiran
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. <u>Period: Dec 2024 to Feb 2025</u>	T. Srilatha

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

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. <u>Period: Dec 2024 to Feb 2025</u>	R. Dhanu
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. <u>Period: Dec 2024 to Feb 2025</u>	T. Srilatha
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. <u>Period: Dec 2024 to Feb 2025</u>	S. Prashant
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. <u>Period: Dec 2024 to Feb 2025</u>	Shisupal Sing
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. <u>Period: Dec 2024 to Feb 2025</u>	V. Meyyappan

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COMPLIANCE TO **TERMS OF REFERENCE**

S.No	ToR Points	Reply	Pg. No
SEIAA SPECIFIC CONDITIONS			
1.1	The The authority noted that the subject was placed in the 542nd SEAC-I meeting held on. After detailed discussions, the Authority accepts the recommendation of SEAC-I and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 2,71,250 m3 of Rough stone & 31,476m3 of Gravel up to the depth of 37m as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-I & normal conditions & the conditions mentioned below.	Complied in this report.	
SEAC CONDITIONS- SITE SPECIFIC			
1.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: a. Copy of the agreement forming CMC. b. The Organisation chart of the Committee with defining the role of the members c. The 'Standard Operating Procedures' (SoP) executing the planned activities.	There are five quarries within a 500-metre radius. The proponent will take the initiative to form a cluster management committee once environmental clearance is obtained for this quarry as well as the other proposed quarry. Environment policy details given chapter- 10. Noted.	195

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

2.	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Agreed.	
3.	Since water bodies are situated nearby, the PP shall carry out the hydrological study including the details of water flow pattern to determine the impacts of the mining operation in the water bodies.	The hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated into Chapter 3.	-
4.	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	Complied. The Details are given in chapter-3	94
5.	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	Complied. The Details are given in chapter-3	94
6.	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Fencing and plantations are under process. Greenbelt / Plantation, fencing & garland drainage works are under progress. Photo evidences will be submitted during final appraisal. In the post mining stage, an area of 1.58.0 Ha will be under greenbelt and plantation.	146
7.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	Complied. The details are given in Chapter 3.	94
8.	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	Noted.	

9.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. Is done in chapter-7.	178
10.	The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	Noted and it will be incorporated at final EIA report submission stage.	
11.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.	Noted.	

3.1 SEAC STANDARD CONDITIONS

1.	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Not applicable. This is a fresh quarry.	

2.	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site	Complied.	
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.	Enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m given chapter-3.	94
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 study is under progress. It will be incorporated in the final EIA & EMP.	
5.	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Complied. The biodiversity report of the study area to be incorporated at the time of final EIA submission.	
6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site	-	
7.	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining Fuel Research / Dhanbad, NIRM/Bangalore, Division of	-	

	Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.		
8.	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	It will be complied at the timing of EC appraisal.	154
9.	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent	Proponent undertaking agreement enclosed	
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	Agreed. Will be complied.	
11.	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences	The details to be incorporated at the time of final EIA Submission.	
12.	If the proponent has already carried out the mining activity in the proposed mining lease area ADAfter 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Not applicable. This is a fresh quarry project.	-

13.	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Not applicable. This is a fresh quarry project.	-
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.	Not applicable. This is a fresh quarry project.	-
15.	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Project coordinates superimposed in satellite imagery and given as Figure No – 2.1 in Chapter – 2. The geology and geomorphology map are provided in Figure No.3.23, 3.24 Chapter 3. The Soil map is provided under Figure No. 3.25, Chapter-3. The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 & Figure 3.2 in Chapter – 3.	50 & 119
16.	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	This is a new quarry project. Drone survey cluster, greenbelt, fencing details provided at the time of final EIA Submission.	-
17.	The proponent shall furnish photographs of adequate fencing, greenbelt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan	There are no trees within ML area. Fencing and plantations are under process. Greenbelt / Plantation will be carried out in the safety zone to enhance the vegetative growth and aesthetic in the safety zone area. In the post mining stage,	-

		an area of 0.46.5Ha will be under greenbelt and plantation.	
18.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, and proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding, environment and the remedial measures for the same.	The geological reserves are estimated to be rough stone 7,21,000 m ³ and Gravel 41,200 m ³ . The mineable reserves of 2,71,250 m ³ of Rough Stone, 31,476 m ³ of gravel formation	202
19.	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR" 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Complied. Please refer Fig. 10.1	136
20.	The Project Proponent shall conduct the Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD/TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitoring data, it may clearly be shown whether working all intersect ground water. Necessary data and documentation in this regard may be provided.	The hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated into Chapter 3.	136
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	The baseline data for all environments is collected for the season (Dec-24 to Feb-25).	78

	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.	Detailed cumulative impact study has been carried and the same is incorporated in the Chapter 4. Accordingly, a detailed Environment Management Plan is prepared considering air, water, noise and soil environment and the details are given in Chapter 7.	
23.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted	Rain water harvesting Plan is given in chapter 4.	
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	Satellite imagery has been used to study the lease area and the details of land use is given in Chapter 3.	99
25.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable. There is no generation of the OB & waste.	
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	No proximity to Critically polluted areas.	

	and Mining should be secured and furnished to the effect that the proposed mining activities could be considered		
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The impact of the mining operations due to this quarry on water environment is studied and mitigation measures are proposed. Rain water harvesting plan is given Chapter 4.	152
28.	Impact on local transport infrastructure due to the Project should be indicated.	Since the production is very less, only few trucks of 5/10T will be used for transport. The effect of transport on local transport will be negligible.	
29.	A detailed study shall be carried out in order to ascertain the status of existing trees (Nos. name of species, age, diameter, etc) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Not applicable. There are no trees within 300m buffer zone of the project area.	-
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific, along with the exclusive photographs/images/plans showing the proposed closure activities conceptually.	Detailed mine closure plan is given in Chapter 7.	190
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	Accepted. It will be done.	
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	Green belt is proposed in an area of 0.46.5 ha. Green belt development plan provided.	

	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 eco-friendly bags should be planted as per the advice of local forest authorities/botanist/horticulturist with regard to site-specific choices. The proponent shall earmark the green belt area with GPS coordinates all along the boundary of the project site with at least 3 m wide and in between blocks in an organized manner	Accepted. The work is under progress. The photographs showing green belt will be provided once it is completed.	-
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A disaster management plan is prepared and the details are given in Chapter 7.	166
35	A risk assessment and Management plan shall be prepared and included in the EIA/EMP report for the complete life of the proposed quarry or till the end of the lease period	Risk assessment and its management is given in Chapter 7.	177
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.	
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No major impact on public health will be there since the villages are located more than 1km from the lease area. Details of CER and CSR are discussed under Chapter No. 8	
38	The Socio-economic studies should be carried out within a 5km buffer zone from the mining activity. Measures of socio-economic significance and influence to the	Socio economic study is conducted both by visits and secondary data collection. Details are given in Chapter 3	210

	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	No litigation is pending	
40.	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Benefits of the project is given in Chapter 8	191
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.	Not applicable. This is a fresh quarry project.	
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. Complied in this report	-	
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the condition mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986	Agreed	-

SEIAA STANDARD CONDITIONS:

Cluster Management Committee

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

1	Cluster management committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry	There are five quarries within a 500-metre radius. The proponent will take the initiative to form a cluster management committee once environmental clearance is obtained for this quarry as well as the other proposed quarry.	-
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Agreed. Will be complied.	-
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed. The list of members of the committee formed will be submitted to AD/mines after obtaining Environmental Clearance.	-
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.	Agreed. Details of the Operation plan for cluster mining operations will be submitted once we get environmental clearance for all quarries proposed in the cluster area.	-
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Risk management plan for the individual quarry is given in this report. As far as cluster working condition is concerned, once the committee is formed, risk management as a cluster including inundation of clusters and the evacuation plan will be elaborated and the same will be submitted to the EIA.	-
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Environmental policy for the cluster will be framed by the cluster management committee and the policy will be in accordance with EPA Act, 1986 and its amendments, guidelines by MoEF&CC/SEIAA and other regulatory bodies. This policy will be displayed in the quarry.	-

7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Agreed. It will be complied as mentioned in the Point No.4	-
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity	Agreed. It will be complied as mentioned in the Point No.4.	-
Forests			
15	The project proponent shall detailed study on impact of mining on Reserve Forests free ranging wildlife.	The fauna commonly found in the core and buffer zone is given in Chapter 3.	
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Complied. The details are given in Chapter 3.	
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Not Applicable. This is a dry barren land.	
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There is no protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	Complied. The details are described in Chapter 4.	
Climate Change			
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	Complied. The details are described in Chapter 4.	

30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Complied. The details are described in Chapter 4.	
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.		
Mine Closure Plan			
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Complied. Mine Closure Plan has been incorporated in the approved Mining Plan and the same is incorporated in the Chapter 7.	
EMP			
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 10.	
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	Complied. The details are described in Chapter 10.	
Risk Assessment			
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Complied. The details are described in Chapter 7.	177
Disaster Management Plan			
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period	Complied. The details are described in Chapter 7.	190

	as per precise area communication order issued.		
Others			
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	-	-
38	As per the MoEF& CC office memorandum F.NO.22-65/2017-1A.11I dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted. It will be complied in the Final EIA/EMP report.	-
39	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Nil	-
A.STANDARD TERMS OF REFERENCE			
1.1	Year-wise production details since 1994 should be given, clearly stating that 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.	Noted	-
1.2	A copy of the document in support of the fact that the Proponent is the rightful lease of the mine should be given.	Precise Area Communication letter received from the Assistant Director, Tiruvannamalai. (Annexure-2)	-

1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	Complied. All the documents in the name of the lessee.	-
1.4	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).	Complied. Project coordinates superimposed in satellite imagery and given as Figure in Chapter 2. The geology and geomorphology map is provided as Figure in Chapter-3. The Soil map are provided as Figure in Chapter-3. The 10km Radius Index plan showing buffer zone is given as in Chapter-3.	50 & 117,118
1.5	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.	Complied. The details are given in Chapter 2.	139
1.6	Details about the land proposed for mining activities should be given with formation as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	Not Applicable. The proposed land is Patta land	-
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of	The proposed quarry is small scale magnitude operation and controlled by lessee individually by engaging optimum statutory personals. Based on magnitude of the operation the PP has framed Environmental Policy and the	194

	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 stockholders at large, may also be detailed in the EIA Report.	same is incorporated in Chapter 10.	
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study, etc should be detailed. The proposed safeguard measures in each case should also provide.	Risks are identified and the management is given in Chapter 7.	177
1.9	The study area will comprise of 10km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/lease period.	The study area of 10km comprising core zone and buffer zone is used for the study. All details given in Chapter – 7.	180
1.10	Land use of the study area delineating forest area, agricultural land, grazing land. Wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Satellite imagery has been used to study land use and the details of land use in the core and buffer zone is given in Chapter 3.	123
1.11	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.	The entire material quarried out will be sold. No waste generation from this quarrying operation.	-

1.12	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 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 Committee.	Not Applicable. There is no forest land in the lease area.	-
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. There is no forest land in the lease area.	-
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. There is no forest land in the lease area.	-
1.15	The vegetation in the RF/PF areas in the study area, with necessary details, should be given.	There is no forest land in the lease area. However, study area's forest details are given in Chapter – 3.	94
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigate measures required, should be worked out with cost implications and submitted.	No wildlife sanctuary or national parks or any areas of ecological importance is found in the 10km area.	-

1.17	Location of National Parks, Sanctuaries, Biosphere Reserve, Wildlife Corridors, Ramsar Site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden, Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	Not Applicable. Nil within 10 km radius.	-
1.18	A detailed biological study of the study area (core zone and buffer zone (10km 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.	Flora and fauna composition in the core and buffer zone of the project has been studied through primary field surveys. The details are furnished in Chapter 3.	121
1.19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range' (attracting court restrictions for mining operations) should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPECB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable	-

1.20	Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ coastal features such as mangroves, if any, should be furnished. (Note: The mining projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable	-
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectorial programme of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shilling of village(s) including their R&R and socio- economic aspects should be discussed in the Report.	Not applicable. No habitation within 300 meter of the radius.	-
1.22	One season (non-monsoon) (i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season) primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site- specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study	Baseline data for meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during (DEC-24 TO FEB-25) and detailed in Chapter-3.	94

	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.		
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Modelling is done using AERMOD and the projected values are found to be within the norms. Hence, there is no major impact due to this mining project. Cumulative impact of mining is also studied and the same is found to be within norms. The detail are given in Chapter 3.	131
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The entire water requirement for the project is 4.5 KLD which will be sourced from nearby vendors (for drinking) & water tanker supply. Negligible sewage of 0.2 KLD will be generated, for which a septic tank with soak pit will be set up. The water balance diagram is shown in Chapter 2	150
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable. The required water will be out sourced from nearby vendors (for drinking) & water tanker supply.	-
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Details of water conservation plan is given chapter 10.	150

1.27	Impact of the Project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	The surface water condition and ground water condition in the study area is given in Chapter 3.	94
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall Include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Ground water table of the project surrounding area is reported as 68m and proposed ultimate pit level is 37m Above ground level. So, the proposed mine working will not intersect the ground water table.	143
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Not applicable. There is no stream, seasonal or otherwise, passing through the lease area.	-
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Details of site elevation and depth are given in Chapter 2.	72
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase -wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for	In the lease area, safety barrier 10m left as safety zone. Greenbelt/Plantation will be carried out in and around the lease area to enhance the vegetative growth and aesthetic in the area.	-

	green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.		
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	This is a small quarry and the production is very less. three Nos. of 5T/10T tippers will be used for transport. The trips will be minimum. Hence no major impact on transport is expected.	-
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Onsite shelter and facilities will be provided to mine workers	-
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	The post mining land use/conceptual land use of the study area is given in Chapter 4.	74
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed	Occupational health and safety study is given in Chapter-3.	168
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should	No major impact on public health will be there since the villages are located more than 1km from the lease area.	-

	be detailed along with budgetary allocations		
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	This project provides employment to 27 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR Rs 5,00,000 is allocated. Based on the demand of the people during public hearing, further funds will be allocated, if necessary.	-
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Environmental Management plan details are given in Chapter 10.	194
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	During public hearing process, the opinions and demands of the people will be noted. The replies and commitment made by the proponent along with time bound action plan wherever applicable will be provided in Final EIA/EMP report.	-
1.40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	There is no litigation pending against the project.	-
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	The cost details including break-up of various costs are given in Chapter 10.	200
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	The disaster and its management plan is given in Chapter-7.	190
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental,	This project will contribute financially through payment of taxes like royalty, GST, etc. The project will also contribute via CSR. The demands of	-

	social, economic, employment potential, etc.	people during public hearing will also be considered by the project proponent. This project provides employment to 21 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR Rs 5,00,000 has been allocated.	
1.44	Besides the above, the below mentioned general points are also to be followed.	-	
	a) Executive Summary of the EIA/EMP Report	Yes, Complied.	-
	b) All documents to be properly referenced with index and continuous page numbering.	Yes, Complied.	-
	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.	Yes, Complied.	-
	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.	Yes, Complied.	-
	e) Where the documents provided are in a language other than English, an English translation should be provided.	Yes, Complied.	-

	f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, Complied.	-
	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 4 th August 2009 which are available on the website of this Ministry, should be followed.	Yes, Complied.	-
	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.	Yes, Complied.	-
	i) As per the circular no.J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environmental Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of	Yes, Complied.	-

	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.	Yes, Complied.	-
A.STANDARD TERMS OF REFERENCE			
1	Year-wise production details since 1994 should be given, clearly stating that 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.	Noted	-
2	A copy of the document in support of the fact that the Proponent is the rightful lease of the mine should be given.	Precise Area Communication letter received from the Assistant Director, Tiruvannamalai. (Annexure-2)	-
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.	Complied. All the documents 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, 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	Complied. Project coordinates superimposed in satellite imagery and given as Figure in Chapter 2. The geology and geomorphology map is	50 & 139,119

	other ecological features of the study area (core and buffer zone).	provided as Figure in Chapter-3. The Soil map are provided as Figure in Chapter-3. The 10km Radius Index plan showing buffer zone is given as in Chapter-3.	
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.	Complied. The details are given in Chapter 2.	75
6	Details about the land proposed for mining activities should be given with formation as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	Not Applicable. The proposed land is Patta land	-
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 stockholders at large, may also be detailed in the EIA Report.	The proposed quarry is small scale magnitude operation and controlled by lessee individually by engaging optimum statutory personals. Based on magnitude of the operation the PP has framed Environmental Policy and the same is incorporated in Chapter 10.	194

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 provide.	Risks are identified and the management is given in Chapter 7.	177
9	The study area will comprise of 10km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/lease period.	The study area of 10km comprising core zone and buffer zone is used for the study. All details given in Chapter – 7.	179
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.	Satellite imagery has been used to study land use and the details of land use in the core and buffer zone is given in Chapter 3.	123
11	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.	The entire material quarried out will be sold. No waste generation from this quarrying operation.	-
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 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	Not Applicable. There is no forest land in the lease area.	-

	representative of the State Forest Department to assist the Expert Appraisal Committee.		
13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. There is no forest land in the lease area.	-
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. There is no forest land in the lease area.	-
15	The vegetation in the RF/PF areas in the study area, with necessary details, should be given.	There is no forest land in the lease area. However, study area's forest details are given in Chapter – 3.	94
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 mitigate measures required, should be worked out with cost implications and submitted.	No wildlife sanctuary or national parks or any areas of ecological importance is found in the 10km area.	-
17	Location of National Parks, Sanctuaries, Biosphere Reserve, Wildlife Corridors, Ramsar Site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden, Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	Not Applicable. Nil within 10 km radius.	-

18	A detailed biological study of the study area (core zone and buffer zone (10km 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.	Flora and fauna composition in the core and buffer zone of the project has been studied through primary field surveys. The details are furnished in Chapter 3.	121
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 SPECB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable	-
20	Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ coastal features such as mangroves, if any, should be furnished. (Note: The mining projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable	-
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 &	Not applicable. No habitation within 300 meter of the radius.	-

	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 sectorial programme of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shilling of village(s) including their R&R and socio- economic aspects should be discussed in the Report.		
22	One season (non-monsoon) (i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season) primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site- specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	Baseline data for meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during season (dec 2024 to feb 2025) and detailed in Chapter-3.	94
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	Modelling is done using AERMOD and the projected values are found to be within the norms. Hence, there is no major impact due to this mining project. Cumulative	108

	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.	impact of mining is also studied and the same is found to be within norms. The detail are given in Chapter 3.	
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The entire water requirement for the project is 4.5 KLD which will be sourced from nearby vendors (for drinking) & water tanker supply. Negligible sewage of 0.2 KLD will be generated, for which a septic tank with soak pit will be set up. The water balance diagram is shown in Chapter 2	150
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable. The required water will be out sourced from nearby vendors (for drinking) & water tanker supply.	-
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Details of water conservation plan is given chapter 10.	194
27	Impact of the Project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	The surface water condition and ground water condition in the study area is given in Chapter 3.	89
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.	Ground water table of the project surrounding area is reported as 68m and proposed ultimate pit level is 37m Above ground level. So, the proposed mine working will not intersect the ground water table.	143

	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.	Not applicable. There is no stream, seasonal or otherwise, passing through the lease area.	-
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Details of site elevation and depth are given in Chapter 2.	59
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.	In the lease area, safety barrier 7.5m left as safety zone. Greenbelt/Plantation will be carried out in and around the lease area to enhance the vegetative growth and aesthetic in the area.	-
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	This is a small quarry and the production is very less. three Nos. of 5T/10T tippers will be used for transport. The trips will be minimum. Hence no major impact on transport is expected.	-

	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.	Onsite shelter and facilities will be provided to mine workers	-
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.	The post mining land use/conceptual land use of the study area is given in Chapter 4.	123
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed	Occupational health and safety study is given in Chapter-3.	168
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations	No major impact on public health will be there since the villages are located more than 1km from the lease area.	-
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 27 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR Rs 5,00,000 is allocated. Based on the demand of the people during public hearing, further funds will be allocated, if necessary.	-
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,	Environmental Management plan details are given in Chapter 10.	194

	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.	During public hearing process, the opinions and demands of the people will be noted. The replies and commitment made by the proponent along with time bound action plan wherever applicable will be provided in Final EIA/EMP report.	-
40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	There is no litigation pending against the project.	-
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	The cost details including break-up of various costs are given in Chapter 10.	200
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	The disaster and its management plan is given in Chapter-7.	190
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.	This project will contribute financially through payment of taxes like royalty, GST, etc. The project will also contribute via CSR. The demands of people during public hearing will also be considered by the project proponent. This project provides employment to 21 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR Rs 5,00,000 has been allocated.	-
44	Besides the above, the below mentioned general points are also to be followed.	-	

a) Executive Summary of the EIA/EMP Report	Yes, Complied.	-
b) All documents to be properly referenced with index and continuous page numbering.	Yes, Complied.	-
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.	Yes, Complied.	-
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.	Yes, Complied.	-
e) Where the documents provided are in a language other than English, an English translation should be provided.	Yes, Complied.	-
f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, Complied.	-
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 4 th August 2009 which are available on the website of this Ministry, should be followed.	Yes, Complied.	-

	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.	Yes, Complied.	-
	i) As per the circular no.J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environmental 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.	Yes, Complied.	-
	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.	Yes, Complied.	-

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))	Agreed	-
2	Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.	Agreed	-
3	Measures for mitigating the impact on the environment and mode of discharge or disposal.	Agreed	-
4	Capital cost of the project, estimated time of completion.	Agreed	-
5	The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.	Agreed	-
6	A detailed study of the lithology of the mining lease area shall be furnished.	Agreed	-
7	Details of village map, "A" register and FMB sketch shall be furnished.	Agreed	-
8	Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.	Agreed	-
9	Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.	Agreed	-
10	EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.	Agreed	-
11	Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.	Agreed	-

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

12	The EIA study report shall include the surrounding mining activity, if any.	Agreed	-
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.	Agreed	-
14	A study on the geological resources available shall be carried out and reported.	Agreed	-
15	A specific study on agriculture & livelihood shall be carried out and reported	Agreed	-
16	Impact of soil erosion, soil physical chemical and biological property changes may be assumed.	Agreed	-
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	Agreed	-
18	Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population	Agreed	-
19	Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.	Agreed	-
20	Likely impact of the project on air, water, land, flora-fauna and nearby population	Agreed	-
21	Emergency preparedness plan in case of natural or in plant emergencies	Agreed	-
22	Issues raised during public hearing (if applicable) and response given	Agreed	-
23	CER plan with proposed expenditure.	Agreed	-
24	Occupational Health Measures	Agreed	-

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

25	Post project monitoring plan	Agreed	-
26	The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.	Agreed	-
27	. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.	Agreed	-
28	The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.	Agreed	-
29	A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.	Agreed	-
30	Reserve funds should be earmarked for proper closure plan.	Agreed	-
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.	Agreed	-
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.	Agreed	-
b.	All documents may be properly referenced with index, page numbers and continuous page numbering.	Agreed	-
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.	Agreed	-

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

d.	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.	Agreed	-
e.	The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J - 11013/77/2004- IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.	Agreed	-
	After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.	Agreed	-
	The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance	Agreed	-
	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.	Agreed	-

CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THE REPORT

Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

Tvl. SSS Mines, Partner Thiru.M.Siva has obtained Precise Area communication letter from the Assistant Director, Geology and Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 08.01.2025 to quarry out of 2,71,250m³ of Rough Stone and 31,476m³ of gravel formation for the period of five years over an extent of 2.06.5 hectares of Patta land in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State. Hence, this proposed quarry falls under the cluster situation due to the following proposed and abandoned quarries located within 500m radius. The details are given below.

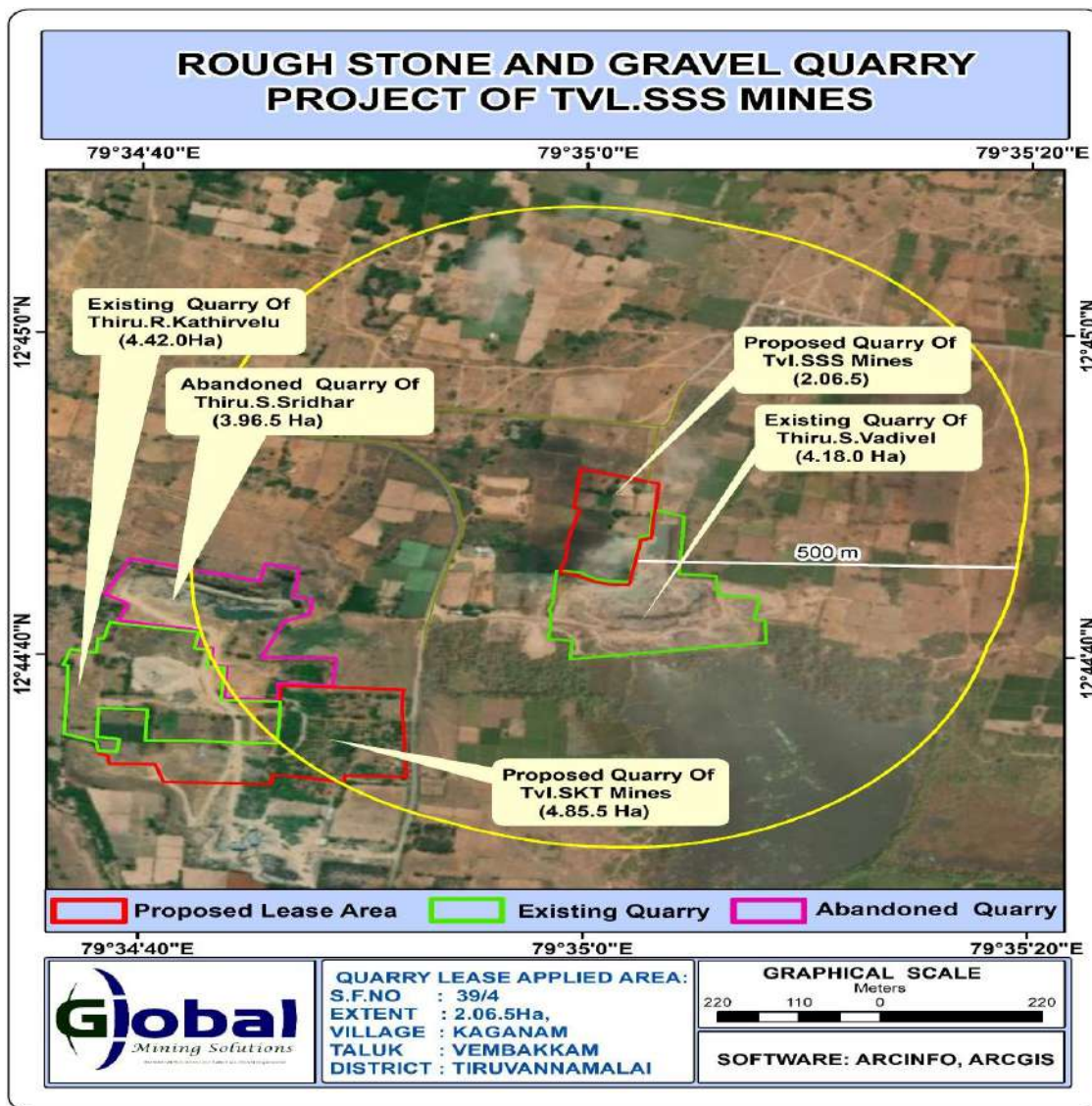
Table 1.1 Cluster Mines Details				
Sl.No	Name of the Lessee	Village & S. F. No.	Extent (Ha)	Lease Status
a. Abandoned Quarries				
1	Thiru.S.Sridhar, S/o. T.Sivaprakasam, Managing Director, SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram 635 501	44/11,58/7,5A.60/2,5 8/58,59/1A,1B,2B,60/3,5, 6 & 7 Kaganam Village	3.96.5	(17-09-2018 to 16-09-2023)
b. Existing Quarries				

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

1	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram	58/1A,1B,2A, 2B, 3,6 , 7 , 8A. , 8B, 59/2A, 61/1B, 2A, 2B, 3, 4A, 5A & 6 Kaganam Village	4.42.0	(10-06-2024 to 09-06-2029)
2	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	S. 38/1, 2, 39/5, 6, 7, 48/17,18, 19, 20, 426/2 & 426/3 Kaganam Village	4.18.0	(20-09-2021 to 19-09-2031)
a. Proposed Quarries				
1	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.	S.F.Nos.39/4 Kaganam Village	2.06.5	Proposed for five years from the execution of the lease deed
2	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	S.F.Nos.44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/481, 61/482, 61/58, 61/7, 62, 63/1 & 63/2 Kaganam Village	4.85.5	-

As per EIA notification, 2006 and its subsequent amendments Tvl. SSS Mines proposed Rough Stone and gravel Quarry, cluster is falls under Schedule 1(a) Mining of Minerals. It is further classified under Category B1 due to the overall extent of cluster area is 15.52.0 Ha which is >5 Ha. Satellite image of Quarries in Cluster is shown in Fig 1.1.

Figure.1.1 Satellite Image showing cluster quarries



The ToR for preparation of EIA/EMP was approved vide ToR Identification No: T025B0108TN5967367N, Dated: 16.05.2025. This report has been prepared in line with the approved TOR for production of maximum excavation of 2,71,250m³ of Rough Stone and 31,476m³ of gravel formation for a period of five years.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

The proposed project is for mining of Rough Stone and gravel(under cluster) quarry from the S.F.No.39/4 over an extent of .06.5 Ha in Kaganam Village, Vembakkam

Taluk, Tiruvannamalai District, Tamil Nadu State. As per EIA notification, 2006 and its subsequent amendments the project comes under Schedule 1 (a) under Category B1 (Lease area >5 to 250 Ha). The proposed project details are given below.

(a) Proposed project details

Sl. No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone and Gravel
4.	Type of Lease	Fresh quarry
5.	Extent of the lease	2.06.5 Ha
6.	Proposed depth of mining	37m below ground level
7.	Method of mining	Opencast Semi-Mechanized method of Mining.
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	2,71,250m ³ of Rough Stone and 31,476m ³ of gravel

(b) Profile of the project proponent

The proposed lessee Thiru.M.Siva (Partner) of Tvl.SSS Mines is an individual with sound experience in the identification of quarry, operation and marketing in the field of Rough Stone quarry. The proposed land is patta land in the name of Tvl.SSS Mines, vide patta no. 1358.

(c) Project proponent details

Name of the proponent : Tvl.SSS Mines
Status of the Proponent : partnership

Address
Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam
Village,Vembakkam Taluk,
Tiruvannamalai District. Pincode- 606 601

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION:

The proposed quarrying operation Opencast Mechanized method with 5m bench height, 5m bench width and overall bench slope is less than 60°. The quarry operation involves shallow jackhammer drilling, slurry blasting, excavation, loading and transportation.

1.3.1 SIZE AND LOCATION OF THE PROJECT

(a) Size of the project

Table 1.2 Proposed project details		
Sl. No.	Feature	Description
1	Type of land	Patta land
2	Extent of lease area	2.06.5 Ha
3	Type of lease	New Project
4	Geological Resource	7,21,000m ³ of Rough stone, 41,200m ³ of gravel formation
5	Mineable Resource	2,71,250m ³ of Rough Stone, 31,476m ³ of gravel formation
6	Proposed production quantity for five years	2,71,250m ³ of Rough Stone, 31,476m ³ of gravel formation
7	Proposed depth of mining	37m Below ground level

Location of the project

The proposed project site is located in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State and its Latitude : 12°44'44.41"N to 12°44'51.65"N & Longitude : 79°34'59.03"E to 79°35'03.47"E with Survey of India Topo Sheet No. 57- P/10.

1.3.2 IMPORTANCE OF THE PROJECT TO THE COUNTRY AND REGION

There is an increasing demand for rough stone and Gravel in India and other countries. Since the construction industry is rapidly growing now, there is an increasing demand for rough stone. Thus, this project will contribute not only to the demand of Rough Stone, but also provide employment opportunities to the nearby villages.

1.4 SCOPE OF THE STUDY -DETAILS OF REGULATORY SCOPING CARRIED OUT (AS PER TERMS OF REFERENCE):

Any mining project may cause environmental impacts near the project site during its operation. The type and intensity of impacts on various components of the environment may vary depending on the nature of the project, as well as its geographical location. The net impacts of the project can be quantified through Environment Impact Assessment (EIA) studies on Physical, Biological and Socio-economic environment. The EIA studies give a basis for preparing an Environmental Management Plan (EMP) to conserve the environment of the area.

For the purpose of preparing EIA/EMP the SEIAA, Tamil Nadu has issued a Terms of Reference ToR Identification No: T025B0108TN5967367N, Dated: 13.05.2025 in accordance with the provisions of EIA Notification 2006 and its subsequent amendments. This EIA study includes both Core and Buffer zone i.e., the lease area and 10km radius of the project area respectively. This EIA report prepared based on the data generated (Dec 2024 to Feb 2024) and all individual components of environment are described in detail. An in-depth analysis of available information has been made for working out an effective Environmental Management Plan.

1.4.1 PRESENT STUDY

The Project Proponent has assigned M/s. Global Mining Solutions, Salem for conducting Environment Impact Assessment / Environmental Management Plan (EIA/EMP) for this project. The Environmental Impact Assessment and Environmental Management Plan of this cluster quarry addressing all the environmental related impacts and mitigation measures. The EMP report is based on the data generated

from Dec 2024 to Feb 2025 by M/s. Shrient Analytical & Research Labs Private Limited, Chennai and the data generated by the FAE of the M/s. Global Mining Solutions, Salem. The study evaluates the prevailing baseline environmental conditions. The objectives of the present study are given below.

- ✚ To prepare the present baseline scenario through primary field monitoring and secondary data for different environmental descriptors such as air, water, noise, traffic, biodiversity, socio-economic etc.
- ✚ To identify the activities of mining that have bearing on the environment
- ✚ To Assess the impact of proposed project activity
- ✚ To suggest preventive mitigation measures
- ✚ To prepare an Environmental Management Plan (EMP) including environmental monitoring.
- ✚ To Prepare Disaster Management Plan.

1.4.2 STATUS OF LITIGATIONS

This is a fresh Rough Stone and Gravel Quarry project. There is no litigation/court case pending against this project.

a. Precise Area Communication:

The Project Proponent has obtained Precise Area Communication from the Assistant Director, Department of Geology and Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 08.01.2025. The letter copy enclosed as **Annexure – 2.**

b. Mining Plan Approval Letter:

The project proponent has prepared mining plan under rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Assistant Director, Department of Geology and Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 24.01.2025. The approval letter along with approved plan is enclosed as **Annexure – 3.**

c. 500m radius quarry features:

The project proponent has obtained an official letter from Assistant Director, Department of Geology and Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 24.01.2025. The letter copy enclosed as **Annexure – 4.**

d. Project Proponent undertaking affidavit:

The project proponent has issued an affidavit under in matter of Common Cause vs Union of India & Ors. The Affidavit copy is enclosed as **Annexure – 12.**

e. Land document of the proposed lease area:

It is a patta land in the name of Tvl.SSS Mines, vide patta no. 1358., the copy of Adangal and A-Register are enclosed as Annexure-6.

CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT

The type of the project is Opencast Semi-Mechanized Mining Method to excavate Rough Stone within the proposed Mine Lease area with drilling, blasting, loading and transportation. This project is located at S.F.No.39/4 over an extent of 2.06.5 Ha in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State. As per EIA notification, 2006 and its subsequent amendments the project comes under Schedule 1 (a) under Category B1 (Lease area >5 to 250 Ha), considering cluster situation and the total cluster area is 15.52.0 Ha. The details of mines located in the cluster area is certified by Assistant, Department of Geology & Mining, Tiruvannamalai vide Rc.No. 263/Kanimam/2024, dated 24.01.2025.

Table 2.1 Cluster Mines Details				
Sl.No	Name of the Lessee	Village & S. F. No.	Extent (Ha)	Lease Status
c. Abandoned Quarries				
1	Thiru.S.Sridhar, S/o. T.Sivaprakasam, Managing Director, SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram 635 501	44/11,58/7,5A.60/2,5 8/58,59/1A,1B,2B,60/3,5, 6 & 7 Kaganam Village	3.96.5	(17-09-2018 to 16-09-2023)
d. Existing Quarries				
1	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram	58/1A,1B,2A, 2B, 3,6 , 7 , 8A. , 8B, 59/2A, 61/1B, 2A, 2B, 3, 4A, 5A & 6 Kaganam Village	4.42.0	(10-06-2024 to 09-06-2029)
2	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	T. 38/1, 2, 39/5, 6, 7, 48/17,18, 19, 20, 426/2 & 426/3 Kaganam Village	4.18.0	(20-09-2021 to 19-09-2031)
b. Proposed Quarries				

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

1	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.	S.F.Nos.39/4 Kaganam Village	2.06.5	Proposed for five years from the execution of the lease deed
2	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	S.F.Nos.44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/481, 61/482, 61/58, 61/7, 62, 63/1 & 63/2 Kaganam Village	4.85.5	-

The proposed production is 2,71,250m³ of Rough Stone and 31,476m³ of gravel formation by open cast semi-mechanized mining method.

2.2 NEED FOR THE PROJECT

The need of the proposed Rough Stone and Gravel quarry of Tvl.SSS Mines.

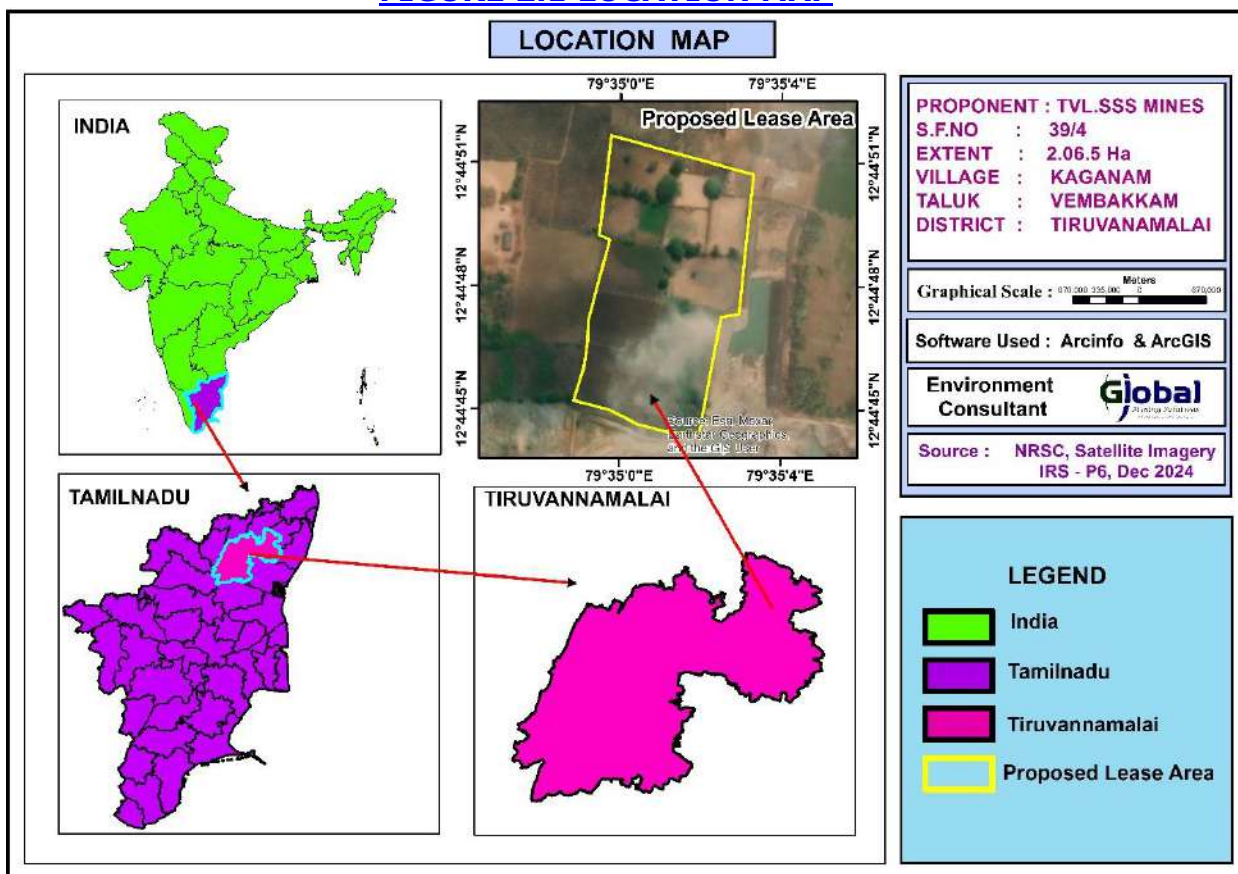
Table 2.1a Salient features of the project		
S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Fresh quarry
3	Category	B1
4	Nature of mineral	Rough Stone and Gravel
5	Life of the mine	5 years
6	Production Quantity for five years	2,71,250m ³ of Rough Stone 31,476m ³ of gravel formation
7	Waste generation and management	Nil
8	Bench height and width	Proposed bench height & width is 5.0m respectively and number of proposed benches is 7 Nos.
9	Ultimate pit depth	37m Below ground level

10	End use	The excavated Rough Stone is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

2.3 LOCATION (MAPS SHOWING GENERAL LOCATION, SPECIFIC LOCATION, PROJECT BOUNDARY & PROJECT SITE LAYOUT):

This project site is located in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District. There is an existing road from the area leads to Sumangali- Kilnelli road on north side of the area. The Nearest Railway line Kanchipuram – Chengalpattu line which is about 17.2Km on the northeast side of the area. The National Highway (NH-4) Chennai– Krishnagiri is about 14.5Km on North side of the area. The State Highway (SH-5) Arcot– Vandavasi is about 7.2Km on Southwest side of the area. The general location is given in Figure 2.1. The specific location is given in Figure 2.2.

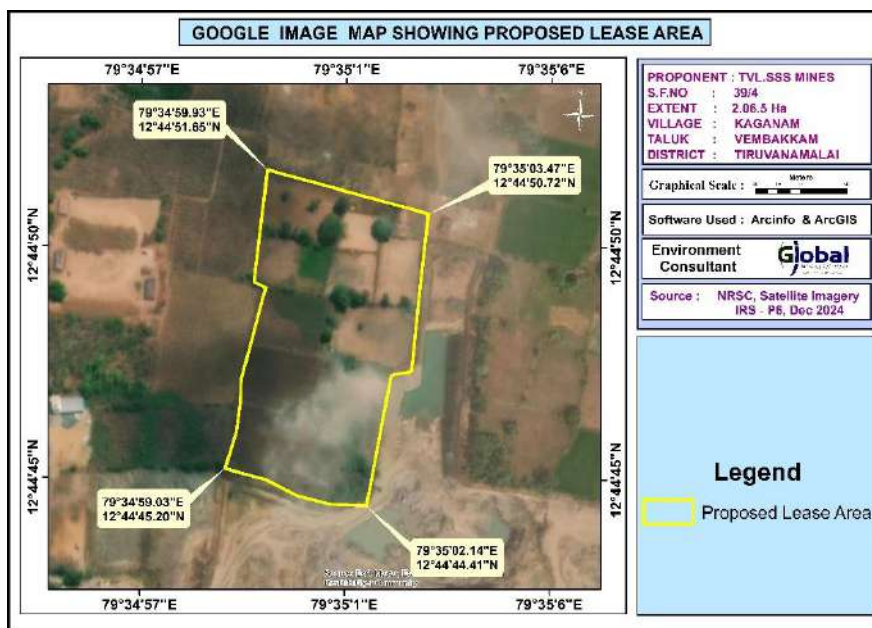
FIGURE 2.1 LOCATION MAP



DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

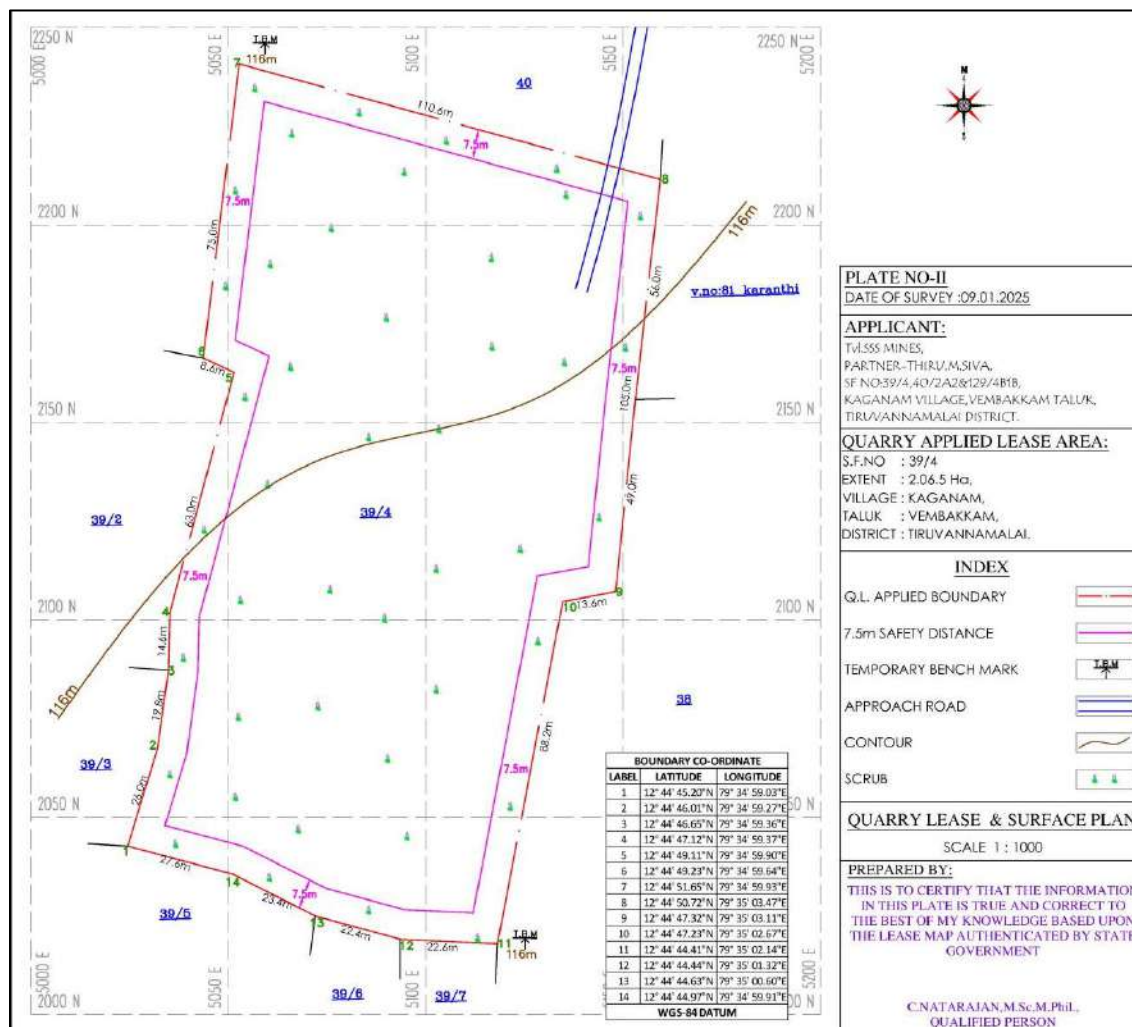
Table 2.2 Co-Ordinates of the Project Site			
Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	12° 44' 45.20"N	79° 34' 59.03"E	1-2 = 26.0m
2	12° 44' 46.01"N	79° 34' 59.27"E	2-3 = 19.8m
3	12° 44' 46.65"N	79° 34' 59.36"E	3-4 = 14.6m
4	12° 44' 47.12"N	79° 34' 59.37"E	4-5 = 63.0m
5	12° 44' 49.11"N	79° 34' 59.90"E	5-6 = 8.6m
6	12° 44' 49.23"N	79° 34' 59.64"E	6-7 = 75.0m
7	12° 44' 51.65"N	79° 34' 59.93"E	7-8 = 110.6m
8	12° 44' 50.72"N	79° 35' 03.47"E	8-9 = 105.0m
9	12° 44' 47.32"N	79° 35' 03.11"E	9-10 = 13.6m
10	12° 44' 47.23"N	79° 35' 02.67"E	10-11 = 88.2m
11	12° 44' 44.41"N	79° 35' 02.14"E	11-12 = 22.6m
12	12° 44' 44.44"N	79° 35' 01.32"E	12-13 = 22.4m
13	12° 44' 44.63"N	79° 35' 00.60"E	13-14 = 23.4m
14	12° 44' 44.97"N	79° 34' 59.91"E	14-1 = 27.6m

FIGURE 2.2 GOOGLE IMAGE SHOWING PROJECT SITE



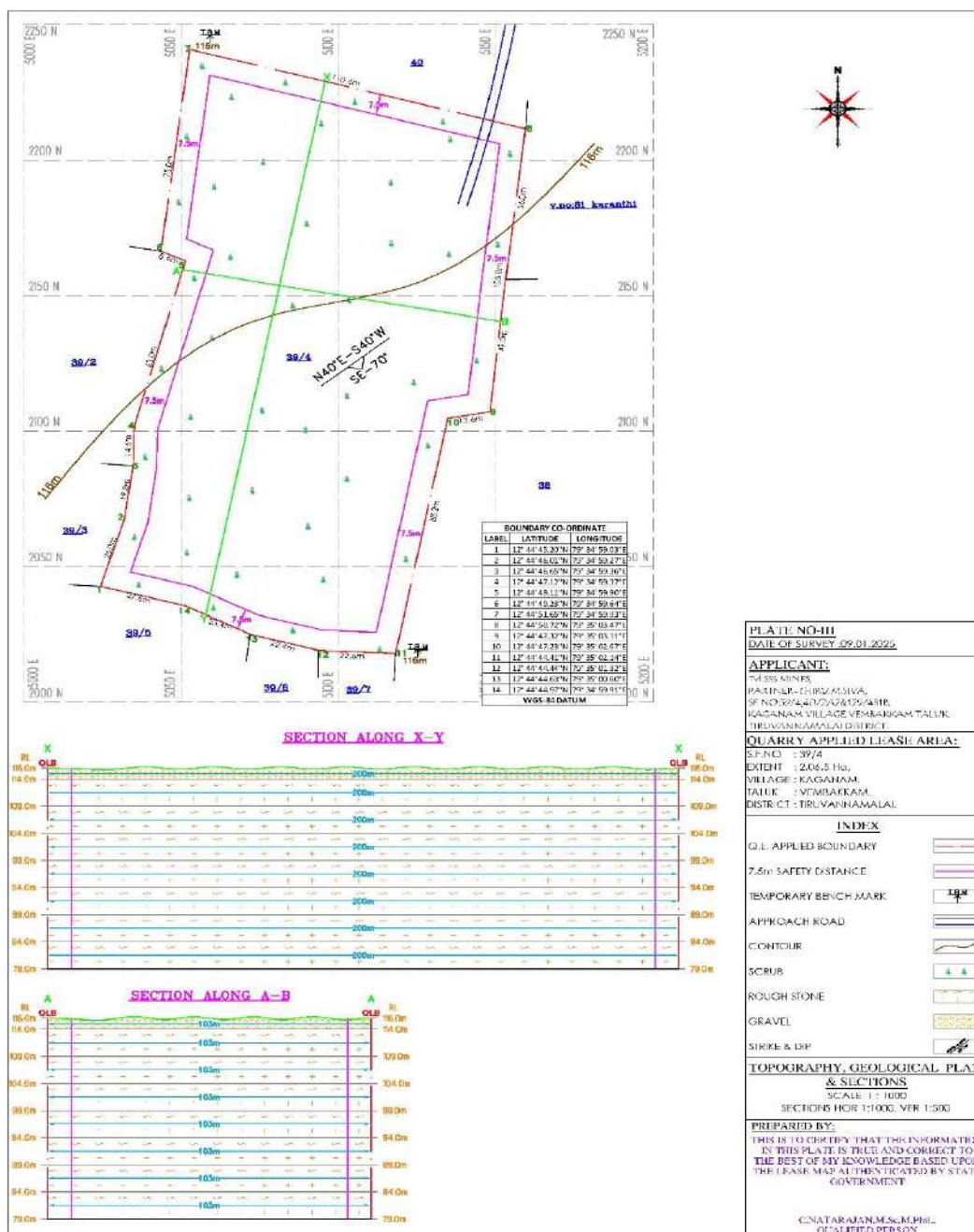
DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

FIGURE 2.3 SURFACE PLAN OF THE PROJECT AREA



DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

FIGURE - 2.4 GEOLOGY MAP OF PROJECT AREA



2.3.1 LAND USE OF THE PROJECT AREA

The proposed Mine Lease area is Patta land and the Land use pattern of the project site is given below Table 2.3.

Table 2.3 Current Land Use Pattern			
S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1	Quarrying Pit	Nil	1.58.0
2	Infrastructure	Nil	0.01.0
3	Roads	Nil	0.01.0
4	Green Belt	Nil	0.46.5
5	Unutilized	2.06.5	Nil
	Total	2.06.5	2.06.5

2.3.2 LAND USE AT MINE CLOSURE STAGE

Table 2.4 Land Use at Mine Closure Stage		
S. No.	Land Use	Area in use during the quarrying period (Hect)
1	Area left for water body	1.58.0
2	Green Belt	0.46.5
3	Remaining area	0.02.0
	Total	2.06.5

2.3.3 SALIENT FEATURES OF THE LEASE AREA

Sr.No	Salient Features	Description
1	Nearest Roadway	- There is an existing road from the area leads to Sumangali- Kilnelli road on north side of the area. - The National Highway (NH-4) Chennai- Krishnagiri is about 14.5Km on North side of the area. - The State Highway (SH-5) Arcot- Vandavasi is about 7.2Km on Southwest side of the area
2	Nearest Village	Karandai Village – 800 m – NE
3	Nearest Railway station	Kanchipuram – 17.2 km, NE

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

4	Nearest Airport	Chennai International Airport-66.2 Km, NE

Figure 2.5 Topo Map showing proposed site features

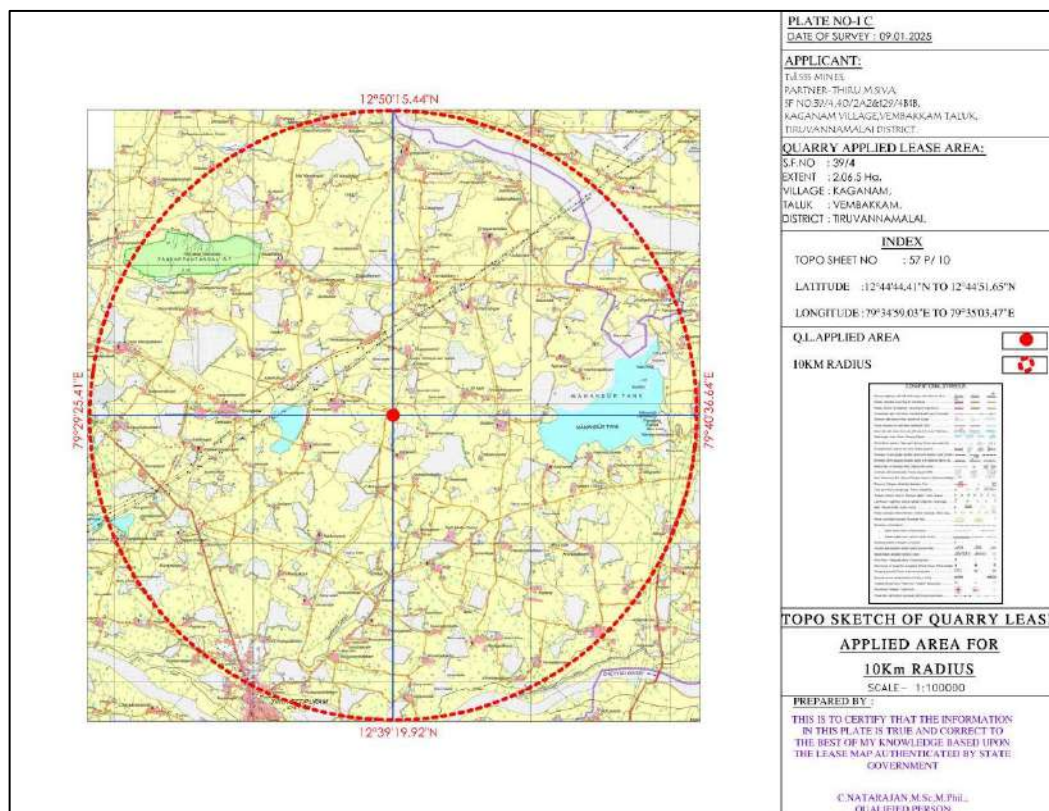


FIGURE 2.6 PROJECT SITE PHOTOGRAPHS



2.4 SIZE OR MAGNITUDE OF OPERATION(INCL.ASSOCIATED ACTIVITIES REQUIRED BY OR FOR THE PROJECT):

The proposed production of 2,71,250 m³ of Rough Stone and 31,476m³ of gravel by Opencast Semi-Mechanized mining method. Available Geological Resources of 7,21,000m³ of Rough stone and 41,200m³ of gravel imposed in the precise area communication letter. Cost of the project is Rs.249.30 Lakhs including land cost. EMP cost.

2.4.1 STATUS OF STATUTORY CLEARANCES, PERMISSIONS, NO OBJECTION CERTIFICATES, CONSENTS:

The mining project will be implemented after getting all the Statutory Clearances, Permissions, No Objection Certificates, and consents etc. which are required/necessary for this project under various Acts, Rules and Regulations is as given in table below:

Table - 2.5 Status of Statutory Clearances, Permissions, NOC, Consents

S.No	Particular	Status
1	Mining Plan Approval Status	The project proponent has prepared mining plan under rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Assistant Director, Department of Geology & Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 24.01.2025..
2	Environment Clearance Status	ToR Identification No: T025B0108TN5967367N, Dated: 16.05.2025
3	Grant of Consent to Establish (CTE)	After 30 days from grant of EC (Duration as per TNPCB)
4	Grant of Consent to Operate (CTO)	After 30 days from grant of EC (Duration as per TNPCB)

2.5 PROPOSED SCHEDULE FOR APPROVAL & IMPLEMENTATION

Proposed schedule for approval of the proposed mining project is given as under:

Table - 2.6 Proposed Schedule for Approval

S.N	Activity Description	AUG 2025	SEP 2025	OCT 2025	NOV 2025
1	Submission of Final EIA/EMP Report to SEIAA-TN				
2	Consideration for EC by SEAC				
3	Recommendation of SEAC to SEIAA				
4	Grant of EC by SEIAA				

Proposed schedule has been prepared as per EIA Notification, 2006

Note: Application was submitted to Parivesh Portal on 20.04.2022 (Online Proposal No. SIA/TN/MIN/69514/2021), ToR was granted on 23.05.2022. Baseline data Collection during Summer Season (March to May 2024). After obtaining EC from SEIAA-TN, CTE and CTO under section 21 of the Air (Prevention and Control Act) 1981 and section 25/26 Water (Prevention and Control of Pollution Act) 1974 will be obtained from Tamil Nadu State Pollution Control Board (TNPCB).

2.5.1 IMPLEMENTATION

Implementation of the proposed mining project will be done in accordance with the existing Acts and Rules applicable on mining operations as well as in accordance with any Act/Rule/Guidelines issued by Central or State Government from time to time and as per Mining Plan and Progressive Mine Closure Plan approved by Assistant Director, Department of Geology & Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024, dated 24.01.2025.

2.6 TECHNOLOGY & PROCESS DESCRIPTION

2.6.1 BASIC REQUIREMENTS FOR THE PROJECT

The project requirements such as water, power, man-power, fuel, machinery with source of supply is described in the sections below.

2.6.2 WATER REQUIREMENTS

In the proposed mines water will be mainly used for domestic purpose, dust suppression & plantation. Total water requirement for the project is 4.5 KLD which will be sourced from outside agencies. Negligible sewage of 0.2 KLD will be generated, for which a septic tank with soak pit will be set up. The water balance diagram is given below.

FIG 2.7 WATER BALANCE DIAGRAM

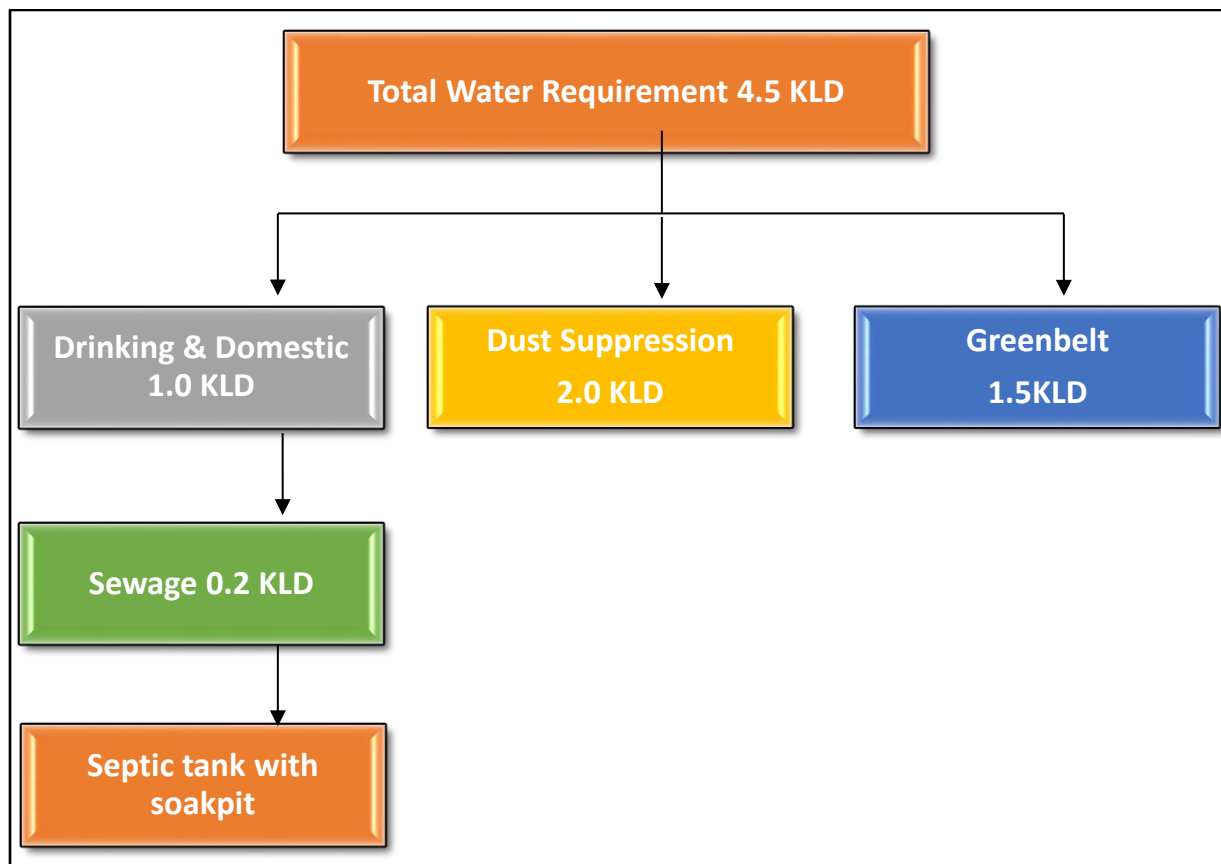


Table - 2.7 Water Requirement

S. No	Particular	Water Requirement (KLD)
1	Dust suppression	2.0
2	Drinking/Domestic	1.0
3	Greenbelt/Plantation	1.5
Total		4.5

2.6.3 POWER REQUIREMENT

Total fuel requirement is 2,22,246 litres for entire life of the project. Power will be used only in the office building.

2.6.4 MAN POWER REQUIREMENT

Total Manpower requirement will be 27 persons which out of which 15 persons (Mines manager, Foreman, Mining Mate, etc.,) and other are drivers and workman's categories. Beside this, 12 workmen will be drivers and workmen. Preference will be given to the locals as per their eligibility.

S.No	Description	Employment potential
1	Mines Manager/ Foreman / Mate	3 Nos.
2	Operator	8 Nos.
3	Mechanic	1 No.
4	Driver	3 Nos.
5	Labours	12 Nos
Total		27 Nos

2.6.5 EXTENT OF MECHANIZATION

Table 2.8 Machineries involved in the project				
S.No.	Particulars	capacity	Motive Power	Nos
1.	Jack hammer	32mm dia	Compressed air	3
2.	Compressor	1 psi	Diesel drive	1
3.	Excavator with Bucket and Rock Breaker	0.90 m ³	Diesel drive	1
4.	Tippers	5/10 Ts	Diesel drive	3

Source: Approved Mining Plan

Note: The mining equipment's of the above capacities are adequate for total material handling requirements for the proposed production of Rough stone in the ML area.

2.6.6 GEOLOGY AND TOPOGRAPHY

Topography

The mine lease area of 2.06.5 Ha is covered in the Survey of India Toposheet 57 P/10 and is bounded by Latitude: 12°44'44.41"N to 12°44'51.65"N, Longitude : 79°34'59.03"E to 79°35'03.47"E. No major river is found nearby the lease applied area. Water table is found at a depth of 68m. Temperature of the area is reported to be 180C to a maximum of 420C during summer.

Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons. The topo map showing the lease area of the proposed quarry is given in Figure 2.1 and Satellite map showing proposed lease area is given in Figure 2.2.

The elevation of the proposed quarry is 116 m (maximum) from MSL. There is no forest land in the mine lease area. The project site is dry land which is not fit for any cropping.

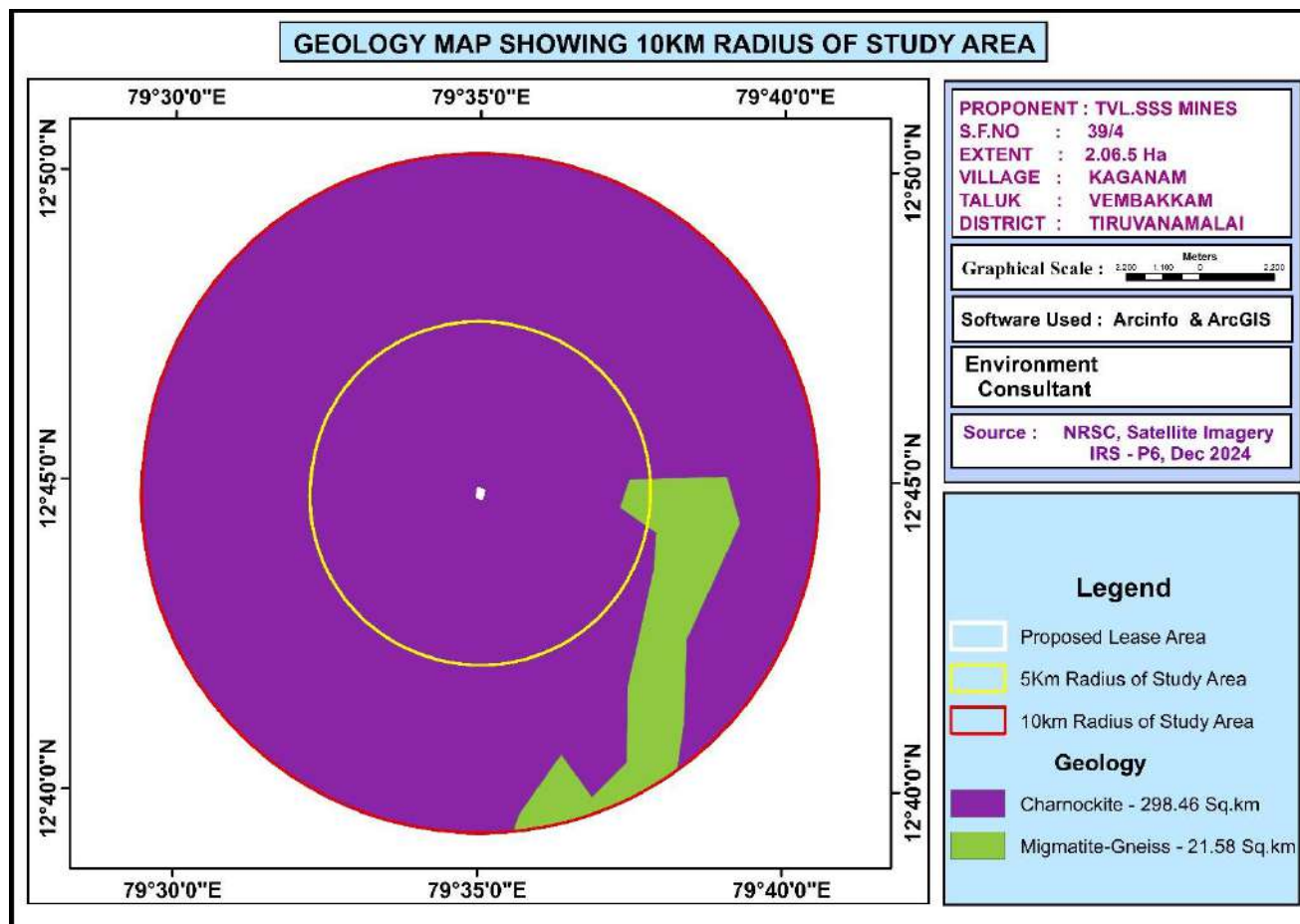
2.6.7 Regional Geology

Geologically Tiruvannamalai District is mostly underlain by the Archaean crystalline and metamorphic complex. The geology of the district is complicated due to recurring tectonic and magmatic activities occurred during Pre-Cambrian period. Hornblende Biotite Gneisses are the oldest rocks of the district. It is very fissile and present widely in plains. The gneisses are highly weathered upto 30 m at some places.

The Charnockites are coarse grained, massive and foliated at places and their colour is bluish dark to grey. They are the second largest rock type present in the district. They are massive and less weathered than the gneisses. They exhibit 2 to 3 distinct set of joints and most of them are vertical with steep dips. Iron ore deposits associated with quartz feldspathic gneiss and garnetiferous quartz gneisses are present in some areas. These rocks are highly folded and jointed and less weathered. Quartzite and crystalline lime stones are exposed in patches in north and central parts of the district. The thickness of these bands varies from a few meters to ten

meters and the length extends to few kilometers. Numerous lenses of dunite with magnesite veins of various dimension are exposed within gneiss .There are number of basic dykes present in the study area. Granites are found in some parts of the district. They are massive and jointed poorly. Several faults and shears are occurring mostly with north east-southwest trend. They are expected to influence the course of groundwater movement, its storage and developmental potentials in the district. Regional Geology map for the 10 Km radius from the proposed project site is given as Figure 2.4.

FIGURE 2.8 REGIONAL GEOLOGY MAP-10 Km RADIUS FROM PROJECT AREA



2.6.8 Local Geology: Geological Resources

The area is underlain by the wide range of charnorokite group, Migmatite complex, Alkali complex, upper Gondwana and Quaternary alluvium. Charnokite group of rocks

occupy major part of the area and comprise charnokites, metaphyropxenites, pyroxene granulites and magnetite quartzite. The migmatic rocks derived from granulites comprise variants of gneisses viz. garnet gneiss, biotite gneiss, hornblende biotite gneiss and pink migmatites.

Granite and granulite are also seen in large areas around west cheyyar. Edidote hornblende gneiss forming part of alkali complex is seen NW of cheyyar bordering Tiruvannamali District. 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	-	Reddish soil
	Unconformity		
	Archaean		Dolerite dyke
		-	Charnockite
			Peninsular Gneissic complex and Calc Gneiss

2.7 PROJECT DESCRIPTION INCLUDING DRAWING SHOWING PROJECT LAY OUT COMPONENTS OF PROJECT ETC., SCHEMATIC REPRESENTATION OF THE FEASIBILITY DRAWING WHICH GIVE INFORMATION IMPORTANT For EIA PURPOSE.

2.7.1 PROCESS DESCRIPTION

PROPOSED METHOD OF MINING

Opencast mechanized method with 5.0 m height 5.0m width and overall, 60° slope of the bench. It is proposed to excavate 2,71,250m³ of Rough Stone and 31,476m³ of gravel formation. No wastage is envisaged as the entire material available is Rough Stone only.

TIMING

Mining will be done on single shift basis. Timing will be 8 hours from 8 AM to 1 Noon and 2 PM to 5 PM. Lunch time will be provided between 1 Noon and 2 PM. Timing

may be variable from season to season depending upon the sunrise and sunset. Weekly one day will be declared as holiday.

BENCH GEOMETRY

Height (max) and Width (max) of the benches will be maintained as 5m each and overall slope angle will be at around 60° with the horizontal.

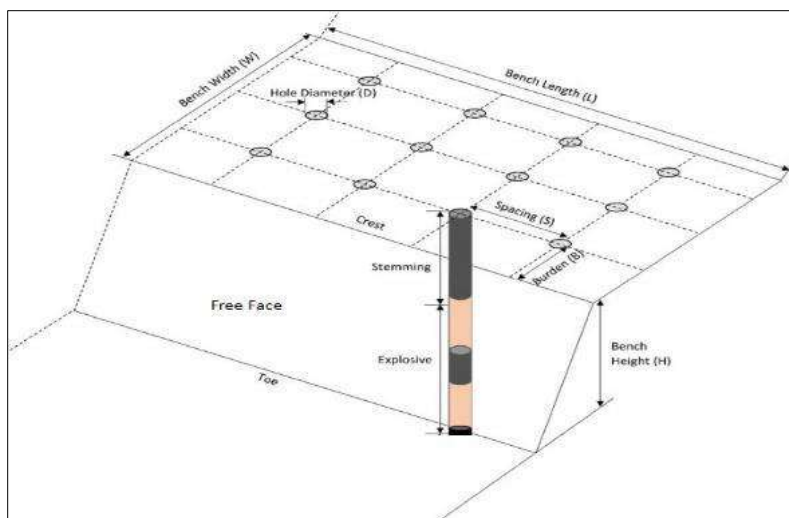
DEVELOPMENT OF MINING FACES

The proposed mining method is Opencast Mechanized mining. Site preparation as such bush cleaning, approach road, office and sanitary facilities will be done after obtaining all the statutory clearances as such Environmental Clearance, Consent to Operate, Lease Deed, etc., Once site is ready will start the quarrying operation and it is anticipated in the end of 2025.

DRILLING & BLASTING

Drilling will be done up to maximum depth of 37m above ground level. Jackhammer will be used for drilling with water spray. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per Kg of explosives. Small dia 25mm slurry explosive is proposed to be used for shattering and heaving effect for removal of Rough Stone. The proposed blasting pattern is given as Figure 2.9.

FIGURE 2.9 BLASTING PATTERN



LOADING& TRANSPORTATION OF ROUGH STONE

Hydraulic excavator will be used for lifting and loading of the rough stone. This excavator in combination with Tippers (5/10TTs) capacity of 3 nos will be used.

FIGURE 2.10 FLOW CHART OF THE QUARRY OPERATION

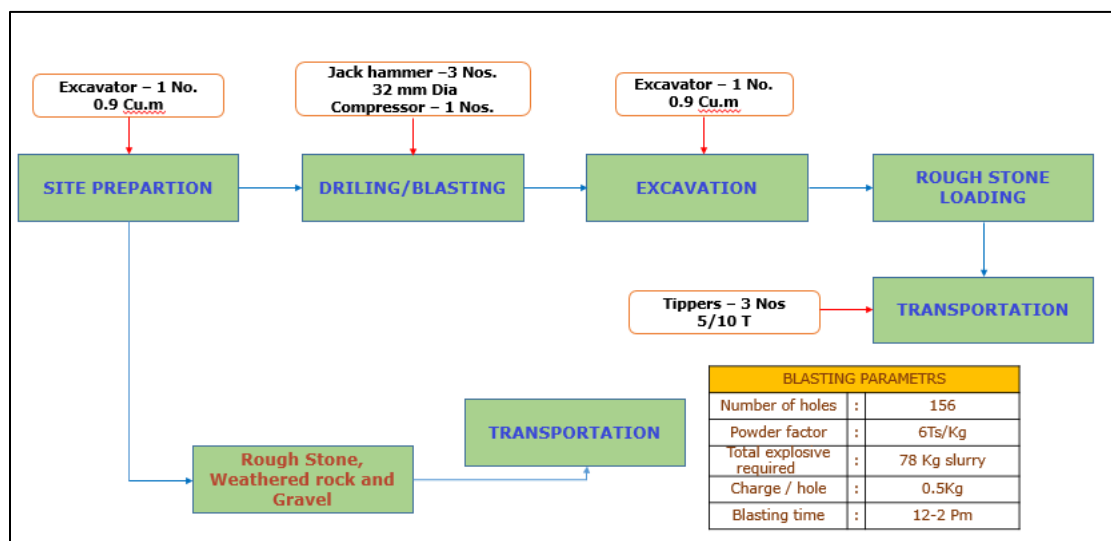


TABLE - 2.9 MINING DETAILS

S.No	Description	Details	Remarks
1.	Method of Mining	Opencast method of mechanized mining with 5.0 m height 5.0 m width and overall 60° slope of the bench. Hydraulic excavator will be used for the excavation and 5/10T tippers will be used for the Hauling.	Excavator – 1 No Tippers -3 Nos.
2.	Mineral Use	The excavated Rough Stone, will be used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district	-
3.	Proposed Depth	37m above ground level	-
4.	Proposed Production	of 2,71,250m ³ of Rough Stone and 31,476m ³ of gravel formation	Five years

	quantity		
5.	Safety Zone	0.46.5 Ha will be maintained as safety zone during mining operation as well as at the conceptual stage of the project.	Around 465 nos. of saplings will be planted in this safety.
6.	Water requirement	4.5 KLD	Procured from the outside water vendors
7.	Energy requirement	222246 litres of HSD (Entire Project Life)	All the equipment will be diesel operated. No electricity is needed for mining operation
8.	Manpower	27 Nos	
9.	Shift	General Shift	8.00 AM – 5.00 PM
10.	Project Cost	249.30 Lakhs	(Including Fixed Asset + Operational & EMP cost)
11.	EMP Cost	187.33 Lakhs	-
12.	CER Cost	5 Lakhs.	The amount will be utilized for the development of nearby Government Schools.

2.7.2 YEAR WISE PRODUCTION & EXCAVATION DETAILS

Year wise Production of Rough stone from the area will be upto maximum capacity. The recovery factor is up to 100% hence no waste expected to be generated. All excavated quantity is saleable. The summary of proposed development and production during the mine plan period is given in Table 2.10.

Table 2.10 Summary of production for 5 Years

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	138	86	2	23736	23736	
		II	135	80	5	54000		54000
Total							23736	54000
II	XY-AB	I	45	86	2	7740	7740	
		II	42	80	5	16800		16800
		III	107	70	5	37450		37450
Total							7740	54250
III	XY-AB	III	60	70	5	21000		21000
		IV	111	60	5	33300		33300
Total								54300
IV	XY-AB	IV	46	60	5	13800		13800
		V	147	50	5	36750		36750
		VI	20	40	5	4000		4000
Total								54550
V	XY-AB	VI	117	40	5	23400		23400
		VII	127	30	5	19050		19050
		VIII	117	20	5	11700		11700
Total								54150
Grand Total							31476	271250

2.7.3 CONCEPTUAL PERIOD

During conceptual stage the mined-out area will be converted into water reservoir and safety zone as well as upper benches will be used for plantation at the conceptual period. It will also serve the purpose as socio economic and corporate social responsibility of the lessee by way of supplying water for irrigation purpose or at will of the local people. This will help in ground water recharging as well. The conceptual plan and section of mine lease area is given in Figure 2.11. Ultimate extent and size of the quarry at the conceptual stage is given below as Table 2.9 and Land Use pattern is given as Table 2.10 The conceptual plan is given as Figure 2.11.

TABLE 2.11 Ultimate Pit Dimension

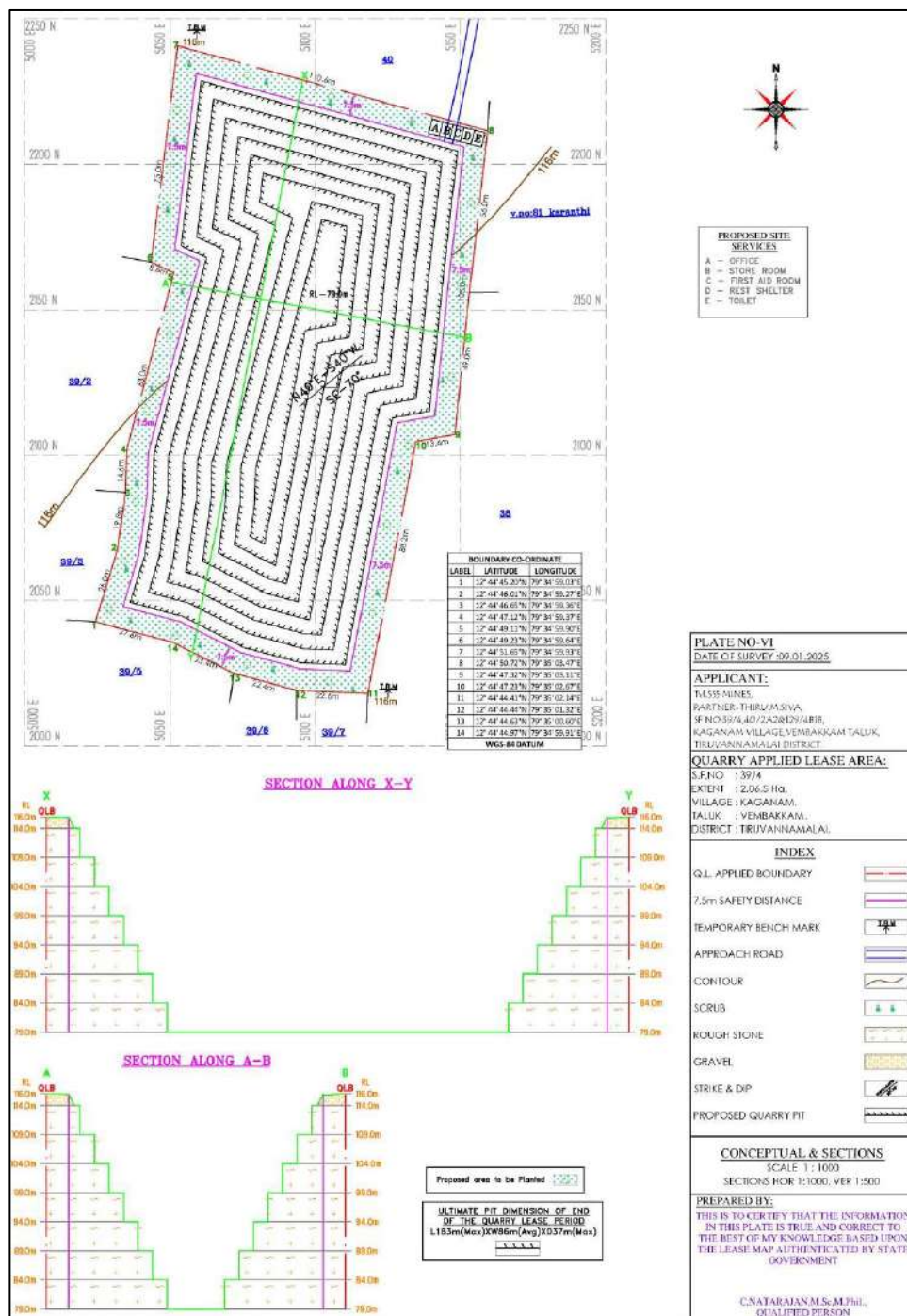
Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)
Ultimate Pit dimension at the end of Mining Plan Period as per approved Mining Plan			
I	183	86	37 (BGL)

TABLE 2.12 Land Use at Mine Closure Stage

S. No.	Land Use	Area in use during the quarrying period (Ha)
1	Area left for water body	1.58.0
2	Green Belt	0.46.5
3	Remaining area	0.02.0
Total		2.06.5

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

FIGURE 2.11 CONCEPTUAL PLAN



2.8 DESCRIPTION OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT TO MEET ENVIRONMENTAL STANDARDS ENVIRONMENTAL OPERATING CONDITIONS, OR OTHER EIA REQUIREMENTS (AS REQUIRED BY THE SCOPE)

The mitigation measures given in this section are for management of the emissions (particulate or gaseous), Noise pollution, wastewater & surface run-off generated from the mining operations to meet the environmental standards and environmental operating conditions are as follows:

2.8.1 AIR QUALITY MANAGEMENT

Drilling

Drilling machines are proposed to be equipped with wet drilling arrangements and cyclone dust collectors.

Blasting

- Controlled blasting is proposed to be adopted and optimum use of explosive energy will help in reducing the air pollution.
- Secondary blasting will be avoided.
- Rock breakers are proposed to be used for breaking over sized boulders in order to reduce the dust generation.
- Use of good quality of explosives having proper oxygen balance with regular monitoring.
- Ensuring proper stemming after charging of explosives. Proper stemming material will help in minimizing dust throw thereby lowering the spread of dust particles in ambient air pollution.
- Water spray on blasted muck pile before dozing/loading to control dust generation.

Loading & Transportation

- Water spray on haulage roads, access roads, operating benches and proper maintenance of haul roads.

- Development of green belt/plantation around mine boundary, roads and other places will be carried out to control the air pollution.
- Proper maintenance of the HEMMs & transportation vehicles will be done.
- Vehicular emissions will be kept under norms.
- Personal Protective Equipment like dust masks will be provided to all employees.
- Regular air quality monitoring will be carried out.
- Compliance of conditions laid by MoEF&CC and TNPCB to minimize environmental impacts

2.8.2 NOISE MANAGEMENT

Drilling

- Drilling with sharp drill bits to achieve optimum drilling performance and to reduce noise generation at source will be adopted.
- Personal protective equipments i.e. earplug in drilling & in high noise area shall be used.

Blasting

- As blasting will be done in accordance with standards prescribed by DGMS for controlled blasting; therefore, ground vibrations will not affect the structures in the vicinity of mine area.
- Explosives charge per hole and per delay will be maintained as per DGMS guidelines.
- Blasting will be carried out by use of non-electric detonators (NONEL) system and the impacts of noise generated due to blasting are momentary.
- Vibrations and noise generated by blasting will be monitored regularly

Transportation

- Adequate silencers in HEMMs will be provided to reduce generation of noise.

- Proper and regular maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- All HEMMs will be equipped with acoustic a/c closed cabins for operators.
- The workers employed at HEMMs will be provided with protective equipment, earmuffs and earplugs as protective measures from the high noise level generated at the mine site and wherever required.
- Development of green belt & plantation around the mining activity and other areas, will be carried out.
- Regular monitoring of noise will be carried out.

2.8.3 WATER MANAGEMENT

Waste Water

Septic Tanks and soak pits will be provided for the disposal of effluent generated from mine office.

Surface Run-off

- Garland drains are proposed to be constructed around the temporary overburden soil dump to channelize the runoff water from dumps and also around the active pit to restrict rainy water from entering in to the working pit.
- Rain water falling directly into the mine pits will be stored and used for plantation & dust suppression.
- Regular monitoring of water quality will be carried out

GREENBELT/ PLANTATION

The mine lease area is devoid of major plantation. Shrubs and bushes are majorly found within the lease area. The proponent has planned to develop green belt in an area of 0.46.5 Ha. Trees like Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc., will be planted around the mine lease area. 465 trees are planned to be planted. Spacing will be 3m x 3m.

2.9 ASSESSMENT OF NEW & TESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE:

From the nature and extent of the deposit, the reserves and the quality have been proved with adequate degree of reliability. Considering the type of mineralization, opencast mechanized method is the most feasible method for mining in the proposed mine lease. It is also a matter of fact that the mining machineries are upgrading with time and therefore the project proponent would act fast to adopt more advanced equipment and automation for safe and environment friendly mining technology in the years to come.

CHAPTER 3

DESCRIPTION OF THE ENVIRONMENT

3.1. STUDY AREA, PERIOD COMPONENTS AND METHODOLOGY

The project area is located in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State over an extent of 2.06.5 Ha., The project area is considered as Core zone and the area in the surrounding 10km radius is considered as Buffer Zone. The baseline environmental monitoring was conducted by Shrient Analytical & Research Labs Private Limited, Chennai it is an NABL and MOEF recognized laboratory for various components of environment, viz. Air, Noise, Water, Land was carried out during Summer Season i.e. DEC 2024 to FEB 2025 in the study area covering 10 km radial distance from the rough stone mine. Other environmental data on flora and fauna, land-use pattern, forest etc. were also generated through field surveys and secondary information collected from different State Govt. departments. Sampling methods and analysis. Socio-economic survey was conducted, through interaction with the people, sarpanch and medical officers by floating questionnaires and collection of information are supported by census data for demographic structures, amenities, and infrastructure availability within the study area. Baseline values for various environmental components are discussed in this Chapter.

ENVIRONMENTAL SETTING OF THE STUDY AREA

Table 3.1 Description of the lease area		
S.No.	Areas	Distance from project site
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius
2	Areas which are important or sensitive for ecological reasons	

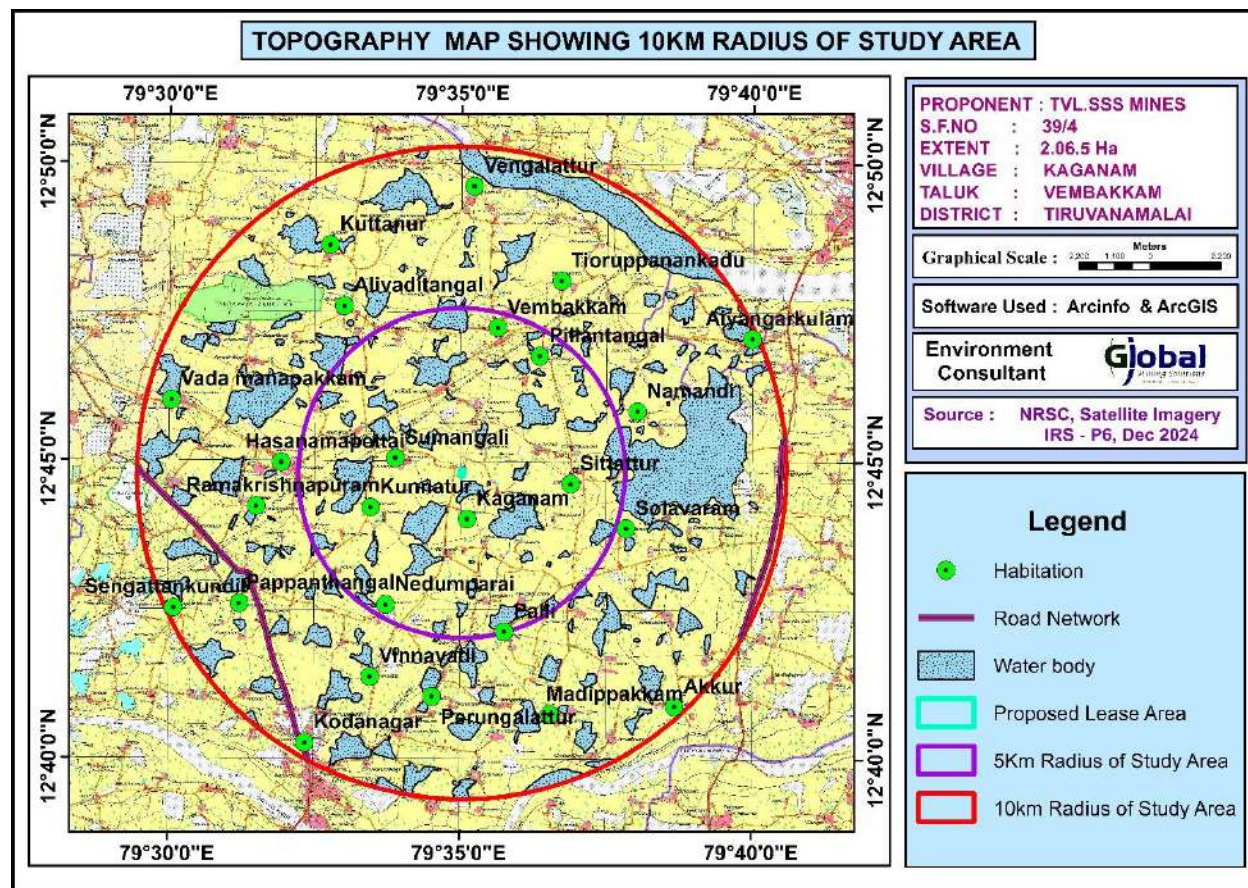
DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

A	Wetlands, water courses or other water bodies,	Water bodies	Distance	Direction
		Tank	180m	SE
		Tank	1.1km	NE
		Tank	2.5km	NE
		Tank	2.7km	W
		Mamandur Tank	4.9km	E
		Permanthangal Tank	6.1km	NW
		Palar River	8.9km	NE
B	Coastal zone, biospheres,	Nil within 10km radius		
C	Mountains, forests	Tandappantangal R.F. - 6.6 km (NW) Pullavakkam Block R.F. - 9.7 km (W)		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius		
4	Inland, coastal, marine or underground waters	Nil within 15km radius		
5	State, National boundaries	Nil within 15km radius		
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius		
7	Defense installations	Nil within 15km radius		
8	Densely populated or built-up area	Kanchipuram – 16.57 Km - SW		
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Kanchipuram – 16.57 Km - SW		
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry,	Nil		

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

	agriculture, fisheries, tourism, minerals)	
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

FIG 3.1 ENVIRONMENTAL SETTING OF THE STUDY AREA



STUDY PERIOD

The relevant information and data (both primary and secondary) were collected in core as well as buffer zone (10 km distance from the mine boundary) during Season (DEC.,2024 to FEB., 2025) in accordance with the guidelines for preparation of EIA studies in order to assess the impact of the mine site within the 10 Km study area on existing physical, biological and social environment.

3.2 ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS:

Information on the following components/parameters were collected to understand the existing scenario of the core and buffer area:

- ✚ Meteorological environment
- ✚ Air environment
- ✚ Water environment
- ✚ Noise environment
- ✚ Soil environment
- ✚ Biological environment
- ✚ Land use & Land cover
- ✚ Socio economic environment
- ✚ Hydrogeology

BASELINE DATA COLLECTION

Baseline environment data on various components of the environment in the study area were collected during Season (DEC-24., to FEB-25) to assess the present scenario of the area. Details are given in the table given below.

Baseline data collection During (DEC-24 to FEB-25)

Sr.No	Environmental Component	Primary data		
		Parameters	Frequency	Monitoring/Sampling locations
1	Land	Agriculture, Habitation, Industry, Stony waste/ Quarries, Forest area, Plantation/ Vegetation, Open scrub, Water bodies etc.	Once in a Season	10 km radius study area
2	Meteorology	Temperature, Relative Humidity, Wind Speed, Wind Direction.	Hourly	1

3	Air	PM10, PM2.5, SO ₂ , NO ₂ , CO & PAH	twice a week (24 hourly)	7
4	Noise	Equivalent noise levels in Leq in dB (A)	Once in a season (day & night time)	7
5	Water	Parameters as per IS 10500 – 2012	Once in a season	
A	Surface Water	Parameters as per IS 10500 – 2012	Once in a season	3
B	Ground Water	Parameters As per IS 2720/USDA	Once in a season	7
6	Soil	Parameters As per IS 2720/USDA	Once in a season	7
7	Biological Environment	Flora and Fauna	Once in a season	Study Area
8	Socio- Economic Environment	Socio-Economic Environment	Once in a season	Study Area

INSTRUMENTS USED FOR ENVIRONMENTAL BASELINE DATA COLLECTION

The following instruments were used at the site for environmental baseline data collection work.

- Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460.
- Fine Particulate Matter (FPS) Sampler APM 550
- Sound Level Meter Model Envirotech SLM - 100
- Digital D.O. Meter Model - 831 E (CPCB Kit)
- Weather Monitoring Station Model Enviro WM 271
- Water Level Indicator and
- Global Positioning System (GPS) Apart from collecting samples of air, water, noise and soil from representative sampling points given in proceeding sections, the data on land use, vegetation and agricultural crops were also collected by the field team through interaction with a large number of local inhabitants of the study area and different Government departments/agencies. This provided an excellent opportunity to the members of the field team for obtaining clear scenario of the existing environment of the study area.

3.3. BASE MAP OF ALL ENVIRONMENTAL COMPONENTS

(ENUMERATION OF THE STRUCTURES LOCATED WITHIN 500M RADIUS FROM THE PROPOSED QUARRY SITE)

A site survey has been conducted to identify and list structures located within a 500 m radius from the proposed Quarry and are detailed below. There are permanent structures within a 500 m radius from the project site. The PP has obtained a letter from Village Administrative Office (VAO), Kaganam Village stating that there are no structures situated within 300 m radius.

FIG 3.2 GOOGLE MAP SHOWING ENVIRONMENTAL FEATURES LOCATED WITHIN 500 M RADIUS FROM THE PROPOSED QUARRY SITE

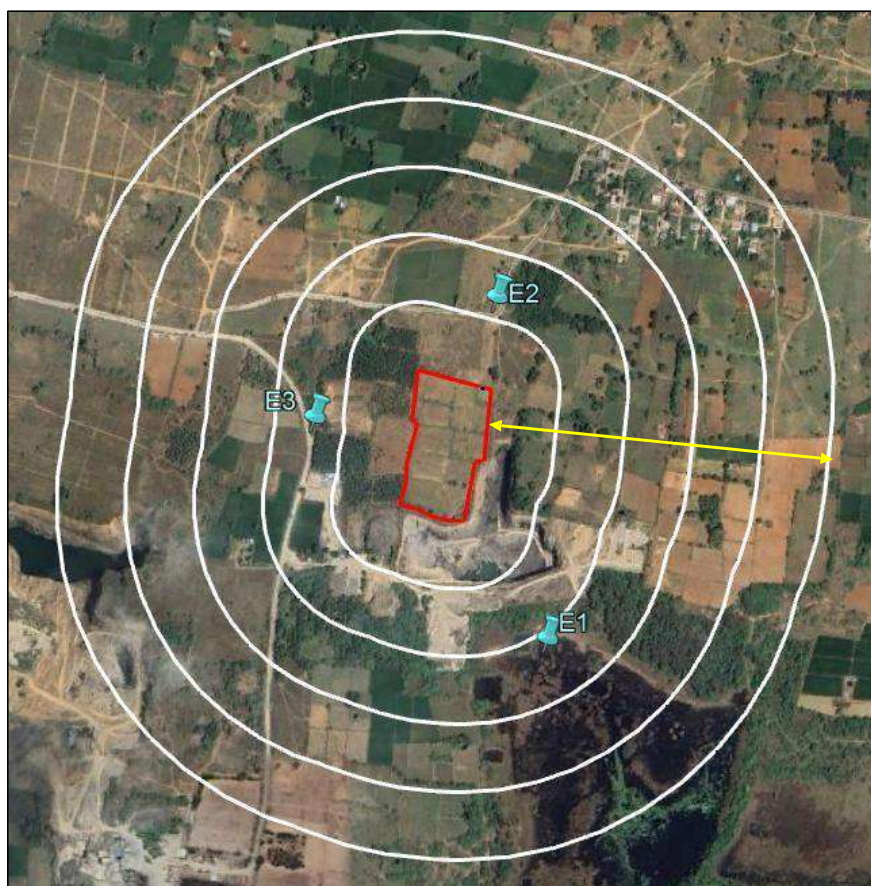


Table 3.2 Structures located within 500m		
S.No	Name of the feature	Distance and direction
E1	Tank	180m(SE)
E2	Karandai-Sumangali Village Road	88m(N)
E3	Sumangali Village Road	150m(W)

FIG 3.4 PHOTOS OF STRUCTURES LOCATED WITHIN 500 M RADIUS FROM THE PROPOSED QUARRY SITE



E1- Tank- 180m (SE)



E2- Karandai- Sumangali Village Road- 88m (N)



E3- Sumangali Village Road- 150m (W)

Fig 3.5 GOOGLE MAP SHOWING STRUCTURES LOCATED WITHIN 500 M RADIUS FROM THE PROPOSED QUARRY SITE

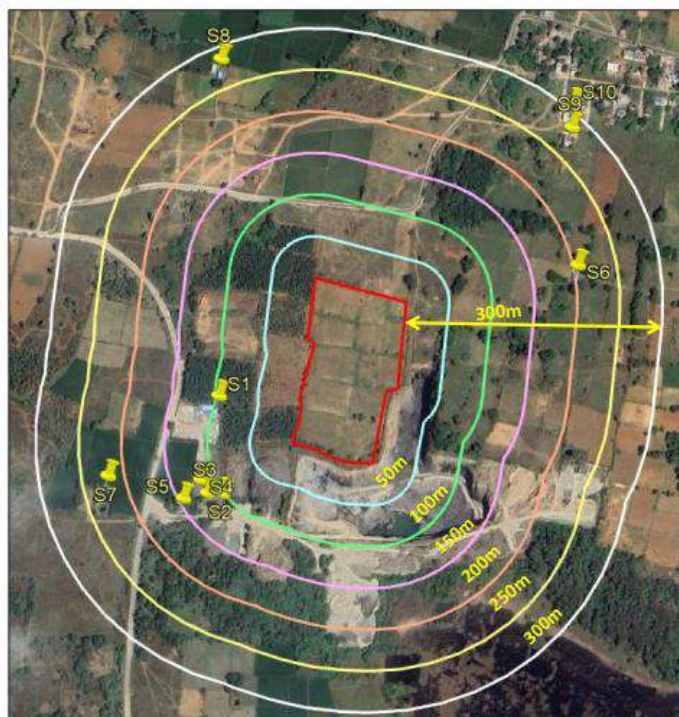


Table 3.3 Structures located within 300m

S. No	Name of the Structure	Distance and Direction	Ownership	Occupant	Type	Age
S1	Building Materials Shed	96m (W)	Does not belong to the PP	Nil	Masonry and G.I. Sheet	> 8 years
S2	Storage Shed	109m (SW)		Nil	G.I. Sheet	> 8 years
S3	Labourer's Shed	125m (SW)		2	Masonry	> 5 years
S4	Labourer's Shed	127m (SW)		2	G.I. Sheet	> 8 years
S5	Storage Room	153m (SW)		Nil	Masonry	> 8 years
S6	Storage Shed	196m (NE)		Nil	G.I. Sheet	> 8 years
S7	Motor Room	221m (SW)		Nil	Masonry	> 8 years
S8	Motor Room	263m (NW)		2	Masonry	> 5 years
S9	House	264m (NE)		Nil	Masonry	> 8 years
S10	House	284m (NE)		2	Masonry	> 8 years

FIG 3.6 PHOTOS OF STRUCTURES LOCATED WITHIN 500 M RADIUS FROM THE PROPOSED QUARRY SITE



S1- Building Materials Shed- 96m (W)



S2-Storage Shed- 109m (SW)



S3- Labourer's House - 125m (SW)



S4- Labourer's Shed- 127m (SW)



S5- Storeroom- 153m (SW)



S6- Storage Shed- 196m (NE)



S7- Motor Room- 221m (SW)



S8- Motor Room- 263m (NW)



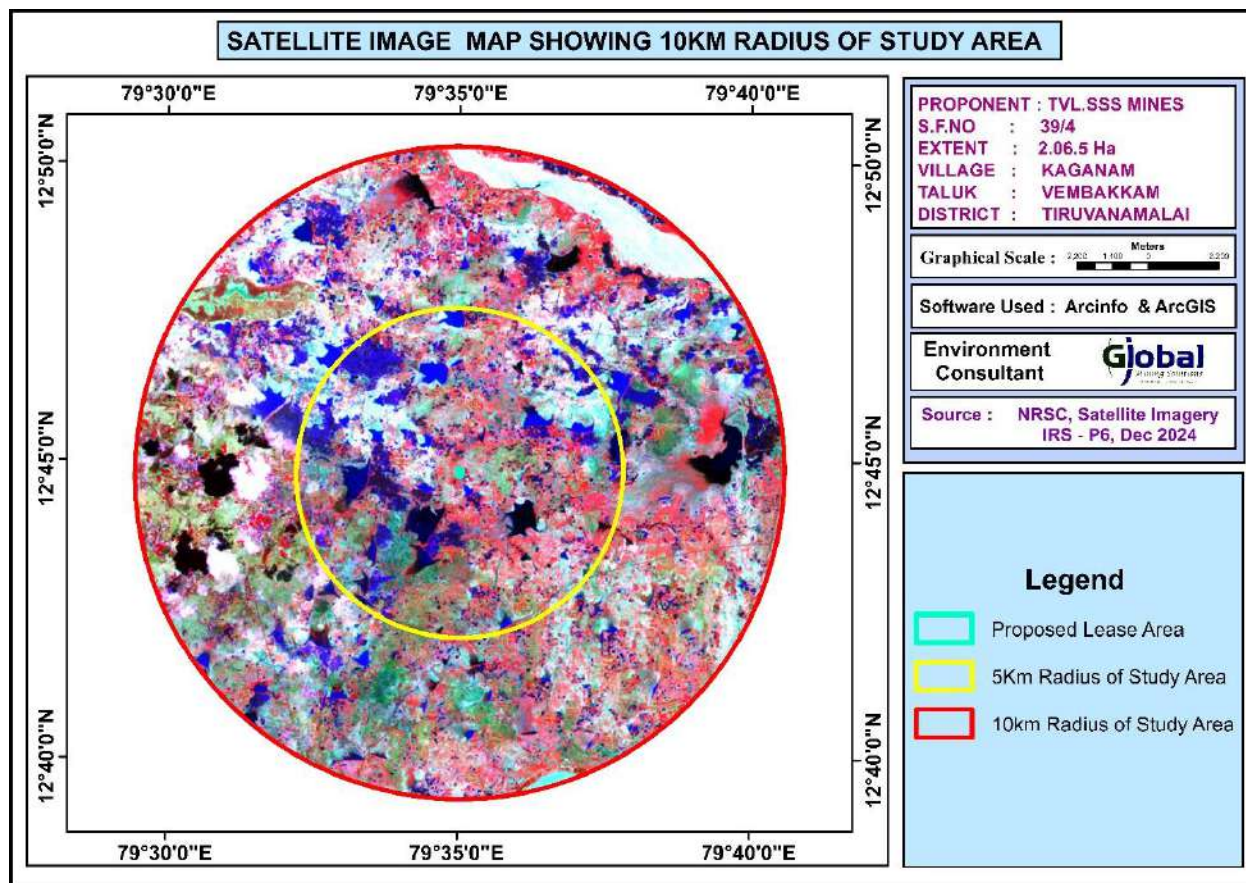
S9- House- 264m (NE)



S10- House- 284m (NE)

As per the field study, within a 300m radius, there are 10 structures, including 2 Nos of Houses, 2 Nos Storage Sheds, 2 Nos Motor Rooms, 1 No Building Materials Shed, 1 No Storeroom and 2 Nos Labourer's Shed

FIGURE - 3.2a SATELLITE MAP OF THE PROJECT AREA (10 KM RADIUS)



3.3.1 METEOROLOGICAL ENVIRONMENT

Meteorological conditions prevailing in the buffer zone is given below

Climate

From the middle of February, temperature increases steadily. In May which is usually the hottest month in the interior, the mean daily maximum temperature rises to 38° to 42° degree Celsius and during winter period it drops to 28° to 33° Celsius. The weather is quite hot in May and June and the maximum temperature sometimes reaches 42°Celsius. With the onset of the southwest monsoon by beginning of June, there is some drop in temperature.

Rainfall

Tiruvannamalai district generally experiences hot and humid climate conditions. The district receives rain under the influence of both southwest and northeast monsoons. Most of the precipitation occurs in the form of cyclonic storm caused due to depressions in Bay of Bengal chiefly during NE monsoon period. The SW monsoon is highly erratic and summer rains are negligible. The average rain fall in the in the region of the project area is 800-900mm per annum during Southwest and Northeast Monsoons.

Rainfall received from 2017 to 2021 is given below.

Table 3.2 Rainfall data					
Actual Rainfall in mm					Normal rainfall in mm
2017	2018	2019	2020	2021	
1201	792	1002	1035	1512	985

Relative Humidity

The relative humidity in general during the year is between 55 and 65 percent in the region of the project area, except during the northeast monsoon season, when it is over 65 per cent. However, the coastal areas will be comparatively more humid.

Seismic information

The study area falls in Zone II, which comes under the least active zone. The seismic map of India is given as Fig 3.3.

FIG 3.3 SEISMIC MAP OF INDIA

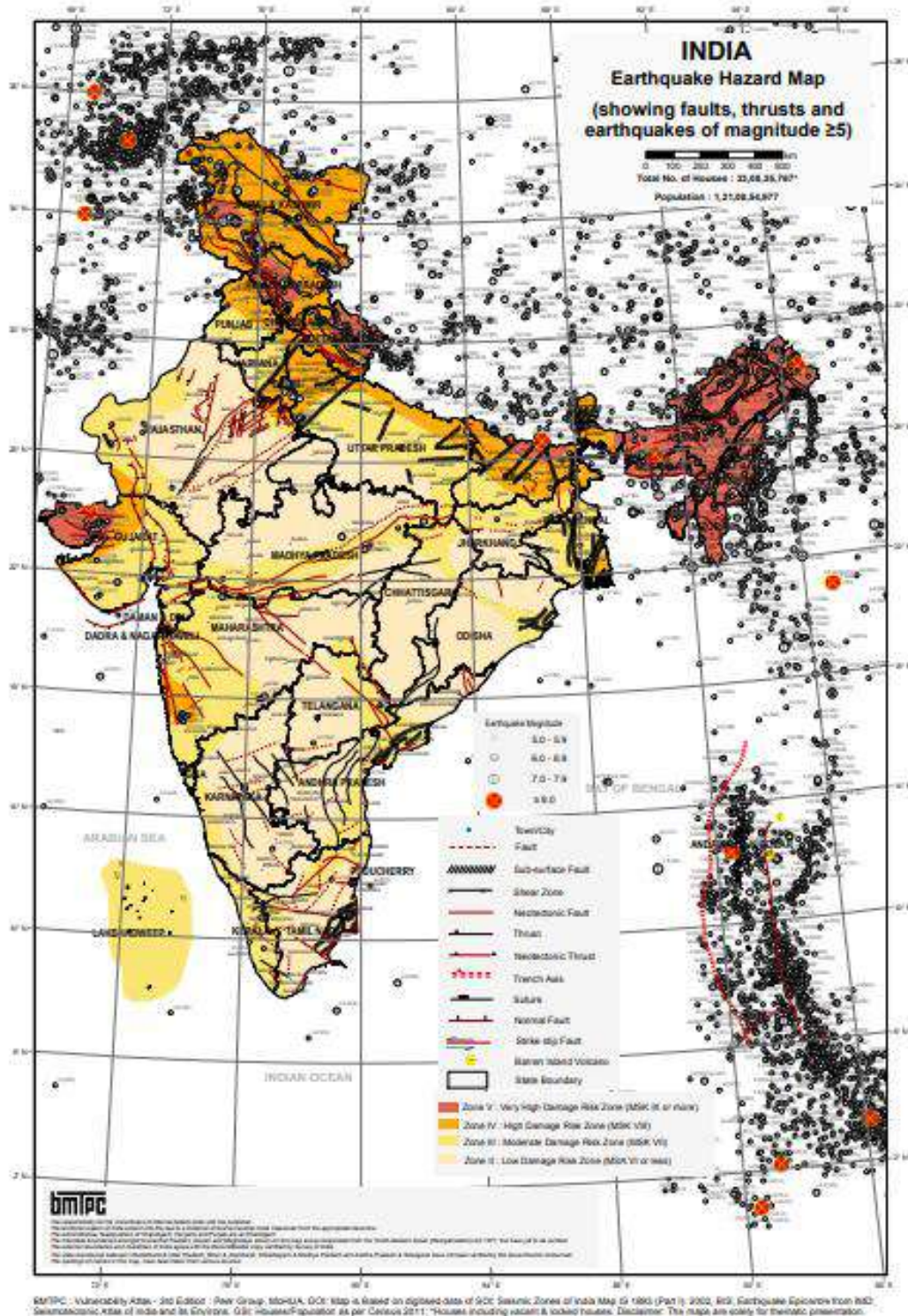
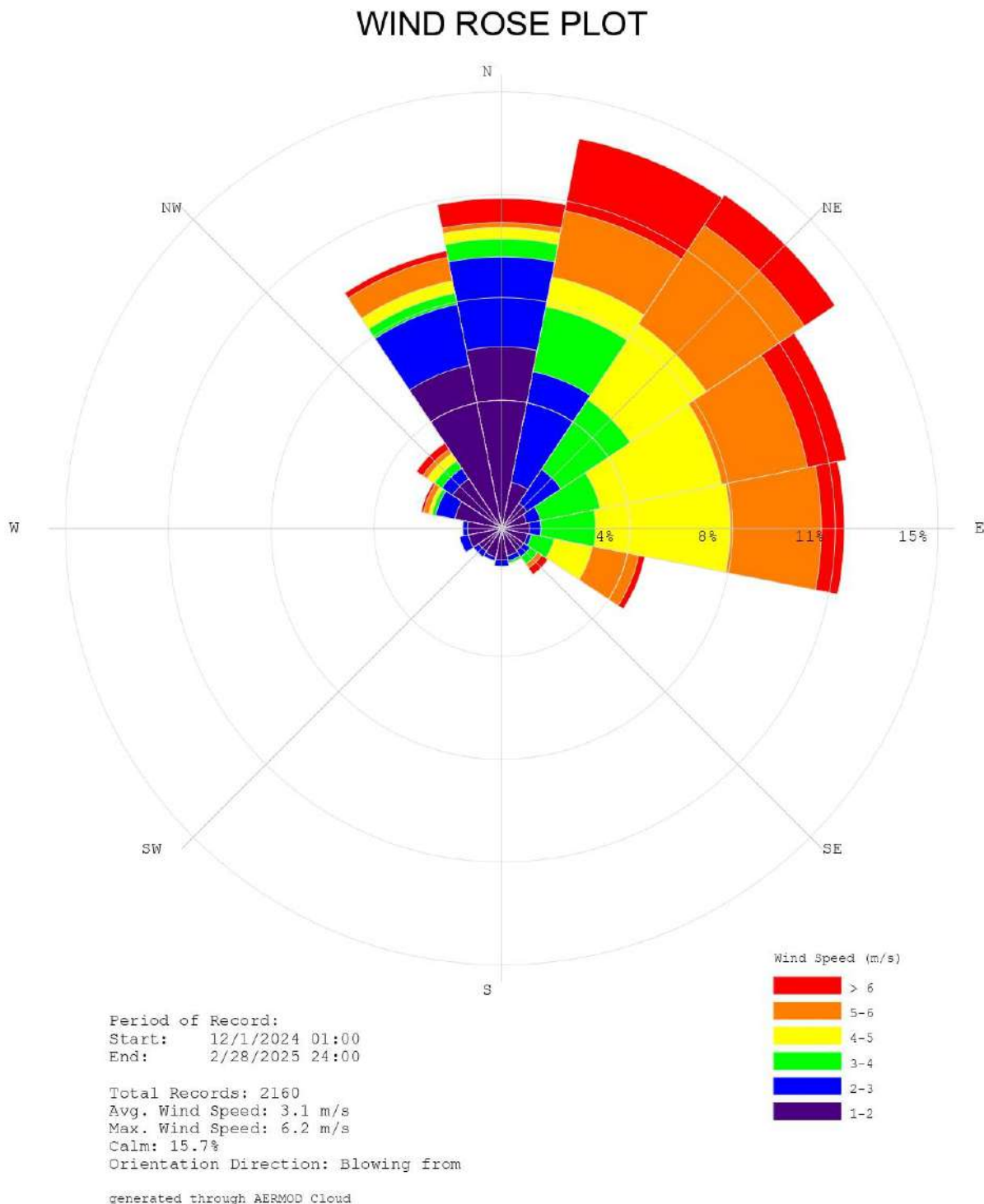


FIG 3.4 WIND ROSE PLOT DURING DEC 2024 TO FEB 2025



Meteorological data of the project area

The meteorological data collected in the study area from Dec 2024 to Feb 2025 which includes Temperature, Wind speed, Wind direction and Relative humidity. The predominant wind blows from West. The temperature of the area is reported to be 24°C and 42°C during summer.

3.3.2 AMBIENT AIR MONITORING DATA

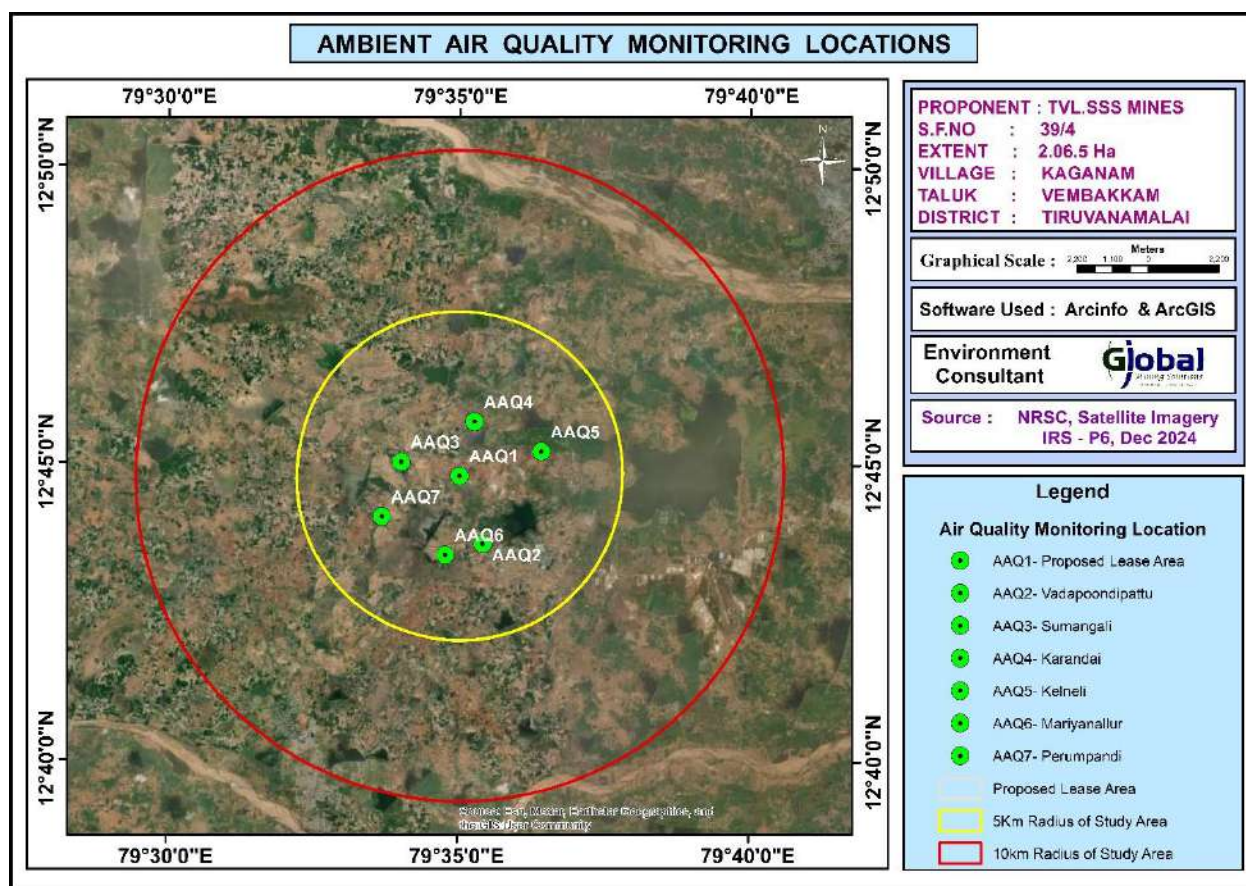
Ambient air quality monitoring has been carried out in 7 locations. One in the core zone and remaining four locations in the buffer zone areas. Monitoring locations have been chosen such that the measurement represents the overall air condition prevailing in the area. The study area represents mostly rural environment with stone mining quarries & crushers.

The regional climatologically data, was used as a guideline to know the predominant wind direction during study period. The locations were identified keeping in view predominant wind directions prevailing during study period, sensitive receptors, human settlements, and mining activities around.

The levels of Respirable Particulate Matter (PM₁₀), Fine Particulates (PM_{2.5}), Sulphur Dioxide (SO₂) and Oxides of Nitrogen (NO_x) were monitored for establishing the baseline status. PM₁₀ were sampled with the help of Respirable Dust Samplers on filter papers and SO₂ & NO_x were absorbed in the respective absorption media in the impingers attached to RD samplers and analyzed Spectro-photometrically. PM_{2.5} was monitored with the help of Fine Particulate Samplers. The monitoring locations for ambient air study are given in Table – 3.3 and Figure 3.5 below.

Table 3.3: Details Of Ambient Air Quality Monitoring Locations					
S. No.	Station Code	Locations	Distance & Direction	Coordinates	
				Latitude	Longitude
1	AAQ 1	Within mine lease area	Core Zone	12°44'44.41"N	79°35'03.47"E
2	AAQ 2	Vadapoondipattu	2.34 km	12°43'31.85"N	79°35'26.22"E
3	AAQ 3	Sumangali	1.95 km	12°45'6.57"N	79°33'56.45"E
4	AAQ 4	Karandai	1.64 km	12°45'43.44"N	79°35'14.11"E
5	AAQ 5	Kelneli	2.55 km	12°45'13.45"N	79°36'22.38"E
6	AAQ6	Mariyanallur	2.47 km	12°43'24.72"N	79°34'46.57"E
7	AAQ7	Perumpandi	2.78km	12°44'0.36"N	79°33'39.97"E

FIG 3.5 BASE MAP OF AMBIENT AIR MONITORING LOCATIONS



The concentrations of various air pollutants at the 7 locations are given below. For all the components in the table, the unit are in $\mu\text{g}/\text{m}^3$.

Table.3.4 Results of Air sampling Analysis in 6 locations

Station ID	Min	Max	Avg.
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	51.5	63.6	58.84
AAQ-2	44.9	55.1	49.0629
625AAQ-3	40.1	51.4	45.19
AAQ-4	43.5	58.1	50.15
AAQ-5	44.1	58.2	48.9083
AAQ-6	43.3	54.5	49.67
AAQ-7	44.9	55.1	49.06
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Particulate matter PM_{2.5} (µg/m³)			
AAQ-1	23.6	30	26.89
AAQ-2	20.4	26.6	23.55
AAQ-3	18.2	27.6	23.23
AAQ-4	20.6	29.2	24.125
AAQ-5	20.3	26.6	22.525
AAQ-6	19.7	24.3	22.31
AAQ-7	20.4	26.6	23.55
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	4.4	6.7	5.23
AAQ-2	4.4	7.1	5.30
AAQ-3	4.3	6.7	5.14
AAQ-4	4.5	9.1	6.44
AAQ-5	4.7	8.1	5.89
AAQ-6	4.4	6.8	5.02
AAQ-7	4.5	9.1	6.45
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	9.3	11.8	10.22
AAQ-2	7.9	9.7	8.75
AAQ-3	6.8	9.1	7.99
AAQ-4	8.8	13.1	8.35
AAQ-5	8.3	10.8	9.49
AAQ-6	7	10.1	7.88
AAQ-7	8.8	13.1	10.5125
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

The results are summarized in graph and given as below Fig. 3.6

FIG 3.6 AMBIENT AIR QUALITY DATA PM 2.5

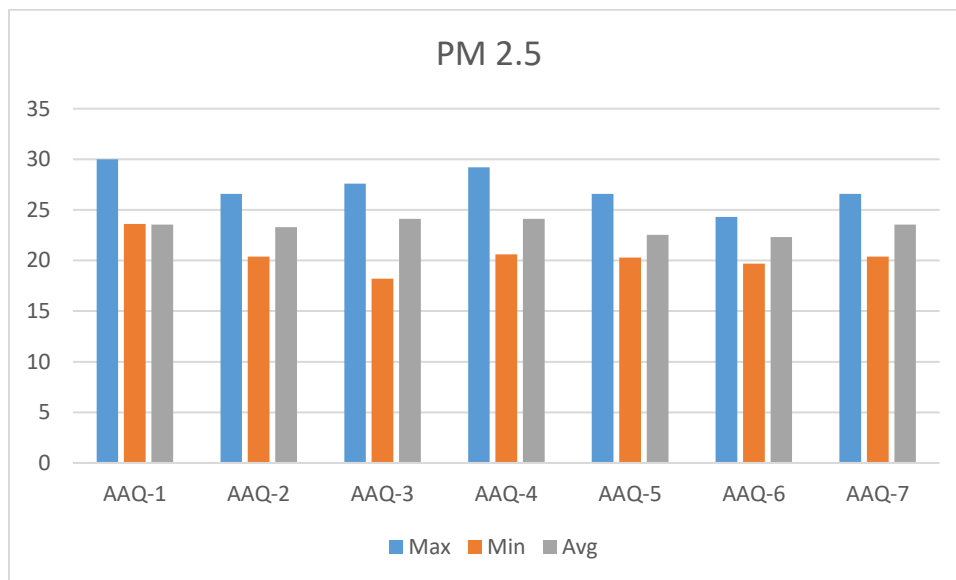


FIG 3.7 AMBIENT AIR QUALITY DATA PM 10

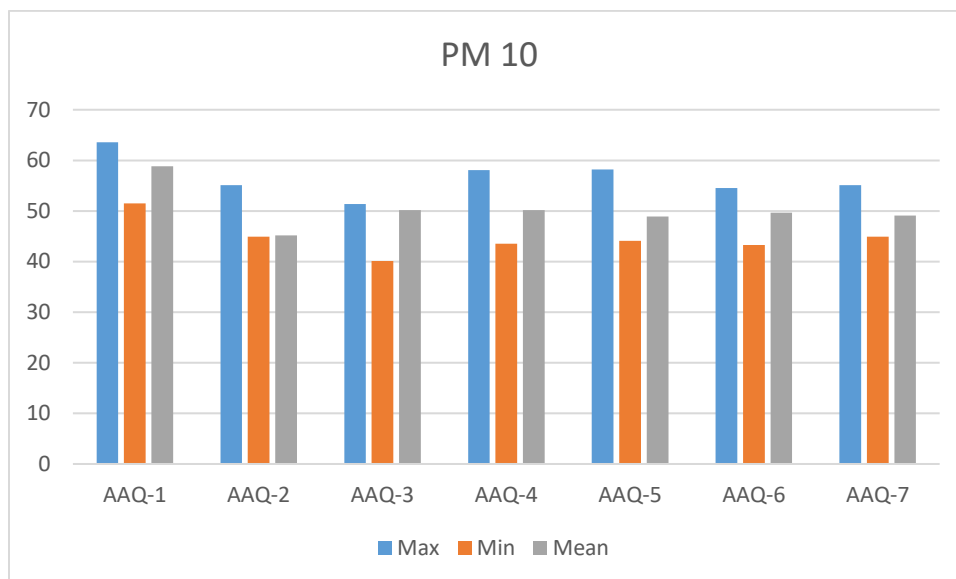


FIG 3.8 AMBIENT AIR QUALITY DATA SO₂

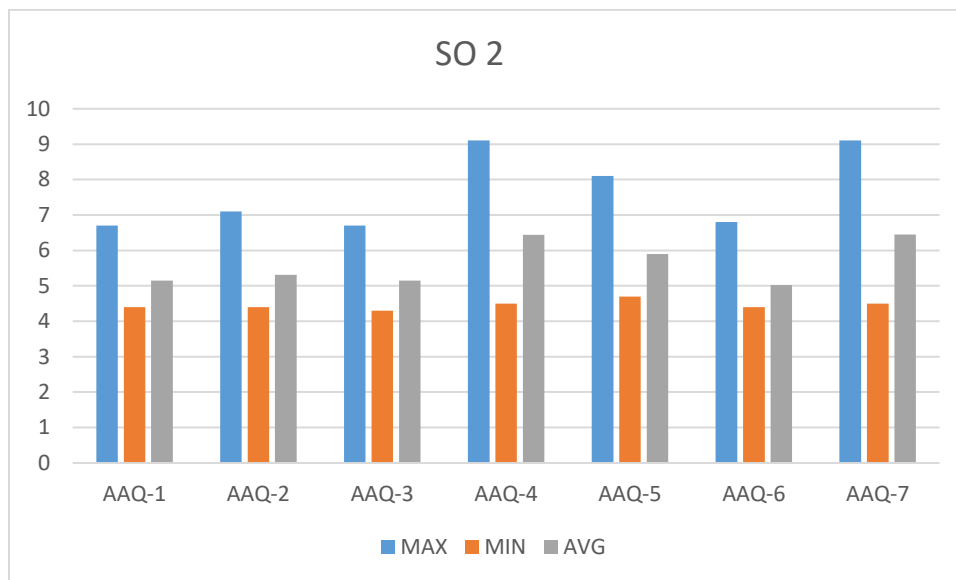
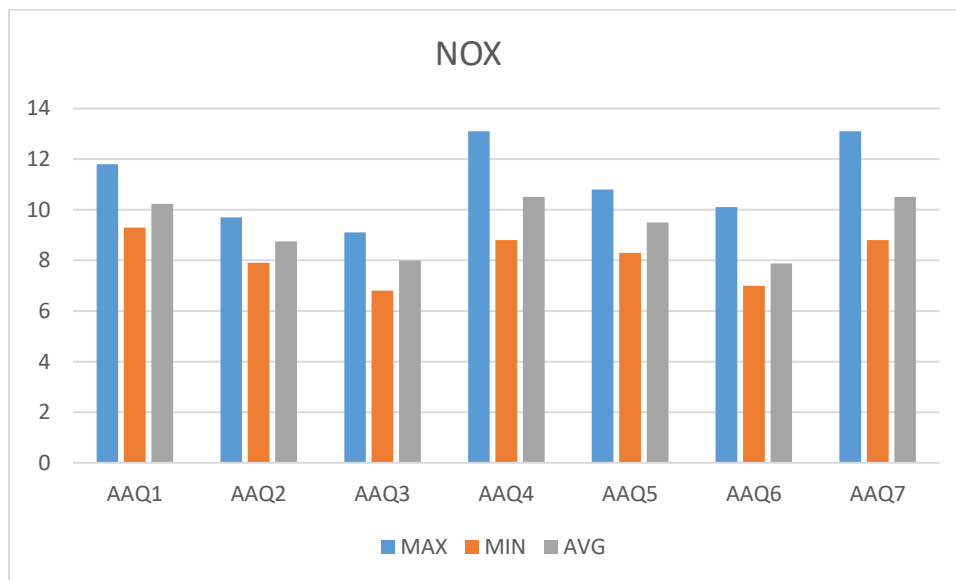


FIG 3.9 AAQ DATA -NOX



From the above results, it is observed that the ambient air quality with respect to PM₁₀, PM_{2.5}, SO₂, and NO₂ at all the monitoring locations was within the permissible limits specified by CPCB.

3.3.3 WATER ENVIRONMENT

Assessment of baseline data on water environment includes:

- Identification of water resources
- Collection of water samples
- Analyzing water samples collected for physico-chemical parameters as per standards.

Surface Water

There is Palar River is located at a distance of 8.9 km (NE) direction of lease area, Thirupannur Tank at a distance of 6.1km (NW) and Mamandur Tank at 4.9km (E). 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. The prevailing status of surface water quality has been assessed during the study period. Surface water quality locations and results are provided in Table 3.14 and Figure 3.11.

Ground Water

The rainfall is the main source for the availability of water both in surface and sub-surface. The quantum of rainfall varies every year depending upon the monsoon. However, the extraction of surface and sub-surface water is increasing year by year. It leads to environmental impact on the water sources like depletion of water level, deterioration of water quality. It makes the demand for the quantification of available water and also its quality for various purposes like agriculture, industries, drinking and domestic purposes. Total seven (07) ground water monitoring locations were identified for assessment in different villages around the project site based on the usage of sub surface water by the settlements/ villages in the study area. The groundwater results are compared with the acceptable and permissible water quality standards as per IS: 10500 (2012) for drinking water. Groundwater quality monitoring locations and results are given in Table 3.5 and Figure 3.11.

Sampling Locations

Seven (07) 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 water bodies. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.5 and shown as Figure 3.12.

The monitoring locations were selected based on:

- Location of the major water bodies
- Location of project site,
- Likely areas that can represent baseline conditions

Water bodies nearby

Table 3.5 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Distance	Latitude	longitude
Surface water					
1	SW1	PALAR RIVER	8.9km	12°48'46.86"N	79°37'56.85"E
2	SW2	THIRUPANNUR	3.15km	12°46'22.08"N	79°34'43.28"
3	SW3	MAMANDUR	4.9km	12°44'41.00"N	79°37'44.99"E
Ground water					
1	GW1	Within mine lease area	Core Zone	12°44'44.41"N	79°35'03.47"E
2	GW2	Vadapoondipattu	2.34 km	12°43'31.85"N	79°35'26.22"E
3	GW3	Sumangali	1.95 km	12°45'6.57"N	79°33'56.45"E
4	GW4	Karandai	1.64 km	12°45'43.44"N	79°35'14.11"E
5	GW5	Kelneli	2.55 km	12°45'13.45"N	79°36'22.38"E
6	GW6	Mariyanallur	2.47 km	12°43'24.72"N	79°34'46.57"E
7	GW7	Perumpandi	2.78km	12°44'0.36"N	79°33'39.97"E

FIG 3.11 BASE MAP OF SURFACE WATER SAMPLING LOCATIONS

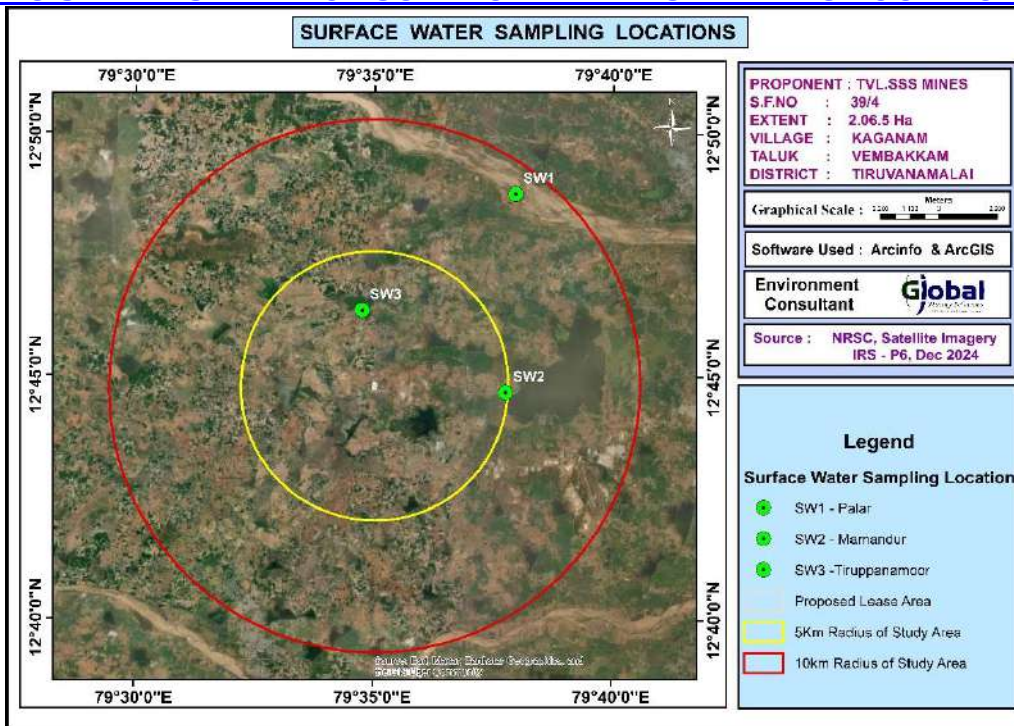


FIG 3.12 BASE MAP OF GROUND WATER SAMPLING LOCATIONS

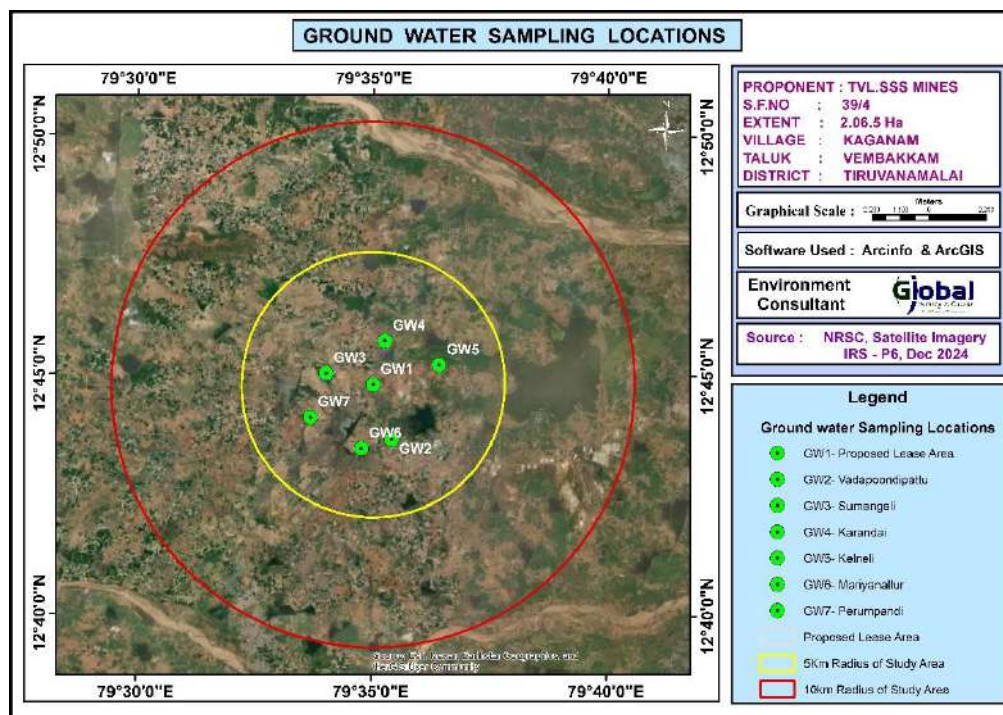


Table 3.6 Surface Water Analysis Results

Sr.No	Parameter	Unit	SW1	SW2	SW3	Surface water standards (IS 2296 Class-A)
1	pH	-	7.68	8.12	8.05	6.5-8.5
2	EC	µs/cm	821.5	223.3	725.2	
3	Turbidity	NTU	110	110	<1.0	1
4	Temperature		28.6	28	29	
5	Odour	mg/l	AGREEABLE	AGREEABLE	AGREEABLE	
6	T.hardness	mg/l	410	58.0	211	
7	C.hardness	mg/l	187	42.0	80.0	
8	M.hardness	mg/l	223	16.0	131	
9	Calcium	mg/l	74.8	16.8	32.0	300
10	Magnesium	mg/l	53.5	3.84	31.4	
11	T.alkalinity	mg/l	230	67.0	166	
12	Chloride	mg/l	51.2	51.2	192	
13	Sulphate	mg/l	156	11.6	49.0	400
14	Manganese	mg/l	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	0.5
15	Iron	mg/l	0.14	0.02	0.12	1.0
16	Nitrate	mg/l	5.89	2.12	3.79	20
17	Fluoride	mg/l	0.62	0.42	0.54	1.5
18	TDS	mg/l	492	136	436	500
19	FRC	mg/l	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	250
20	TSS	mg/l	31.5	BDL(DL-2.0)	25.2	
21	COD	mg/l	105	BDL(DL-4.0)	84.0	
22	BOD	mg/l	BDL(DL-2.0)	BDL(DL-2.0)	BDL(DL-2.0)	
23	DO		5.80	6.30	6.20	

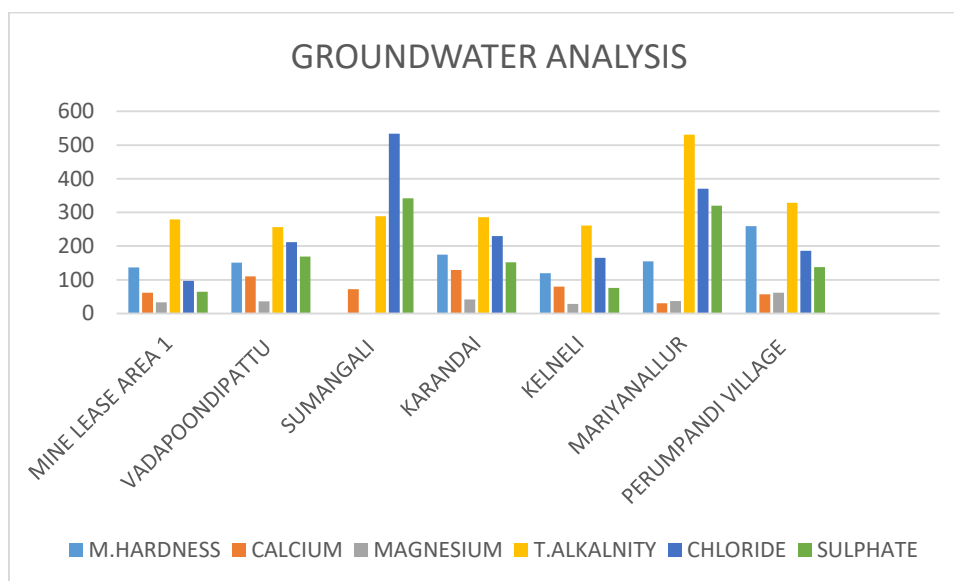
The samples were analyzed by Shrient Analytical & Research Labs Private Limited; Chennai and the results are summarized below.

The samples were analyzed by Shrient Analytical & Research Labs Private Limited; Chennai and the results are summarized below.

Table 3.7 Results of Ground Water sampling Analysis in 6 locations							
	W1	W2	W3	W4	W5	W6	W7
PHF17C6B9:GB9:I22	7.59	7.32	7.42	7.22	7.66	7.54	7.27
EC	783.2	1208	2106	1248	922.6	2006	1123
TURBIDITY	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ODOUR	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
T.HARDNESS	293	426	315	498	319	231	402
C.HARDNESS	155	275	180	323	199	76.0	143
M.HARDNESS	137	151	135	175	120	155	259
CALCIUM	62.0	110	72.0	129	79.6	30.4	57.2
MAGNESIUM	32.9	36.2	32.4	42.0	28.8	37.2	62.2
T.ALKALNITY	279	256	289	286	261	531	329
CHLORIDE	96.9	212	534	230	165	370	186
SULPHATE	64.5	169	342	152	76.5	320	138
MANGENESE	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)
IRON	0.05	0.07	0.06	0.06	0.02	0.07	0.03
NITRATE	2.75	3.11	3.45	2.78	2.47	5.90	5.64
FLUORIDE	0.35	0.58	0.42	0.49	0.49	0.64	0.55
TDS	470	726	1265	750	555	1210	676
FRC	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)

Some of the common parameters including EC, TDS, Total Hardness, Total Alkalinity, Chlorides and Sulphates in the 7 Locations were plotted and the graph is provided below.

FIG 3.13 VALUES OF FEW COMMON PARAMETERS IN WATER ANALYSIS



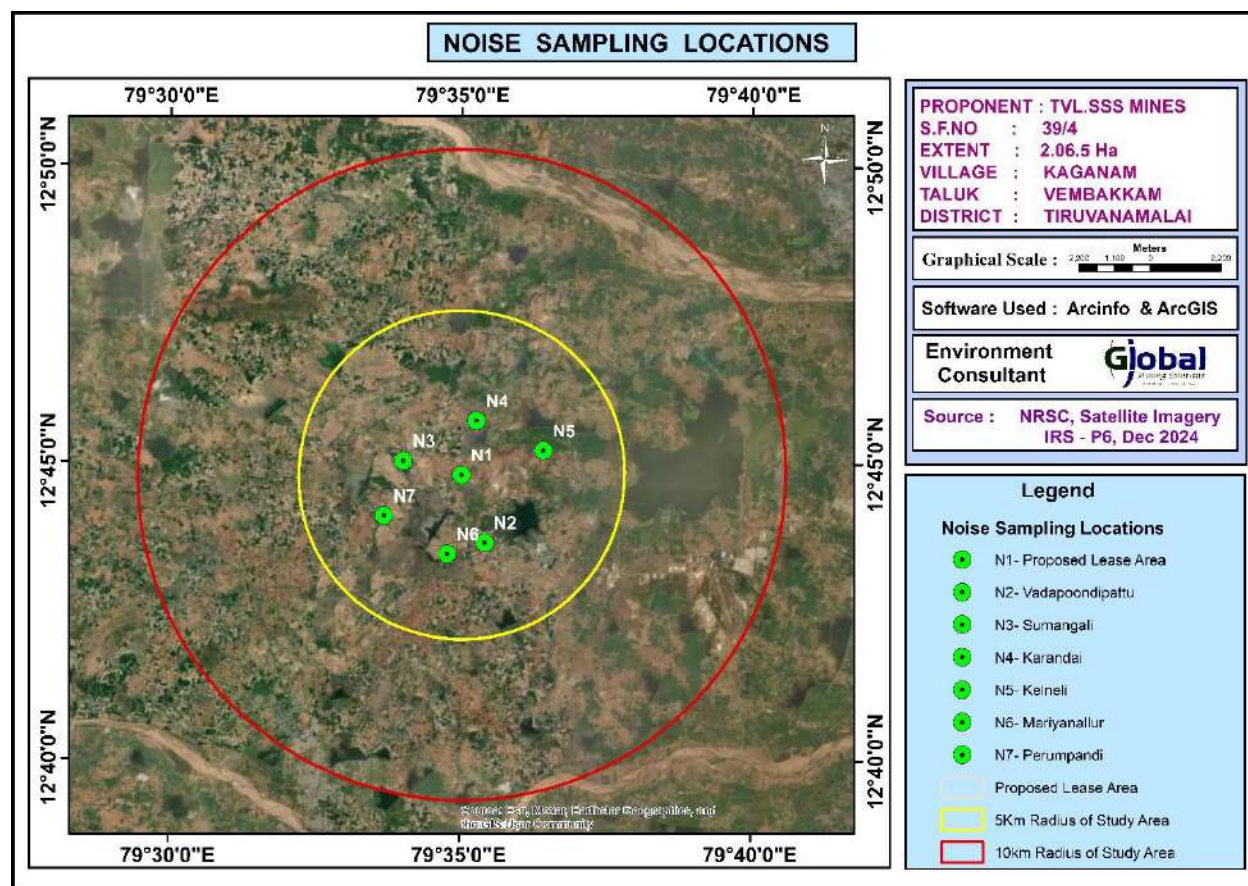
All the values were found to be within the permissible limits.

3.3.4 NOISE MONITORING

Noise level monitoring was calculated using a noise level meter by NABL Accredited lab and the results are summarized below.

The noise monitoring locations are given in Fig 3.14

FIG 3.14 BASE MAP OF NOISE MONITORING LOCATIONS

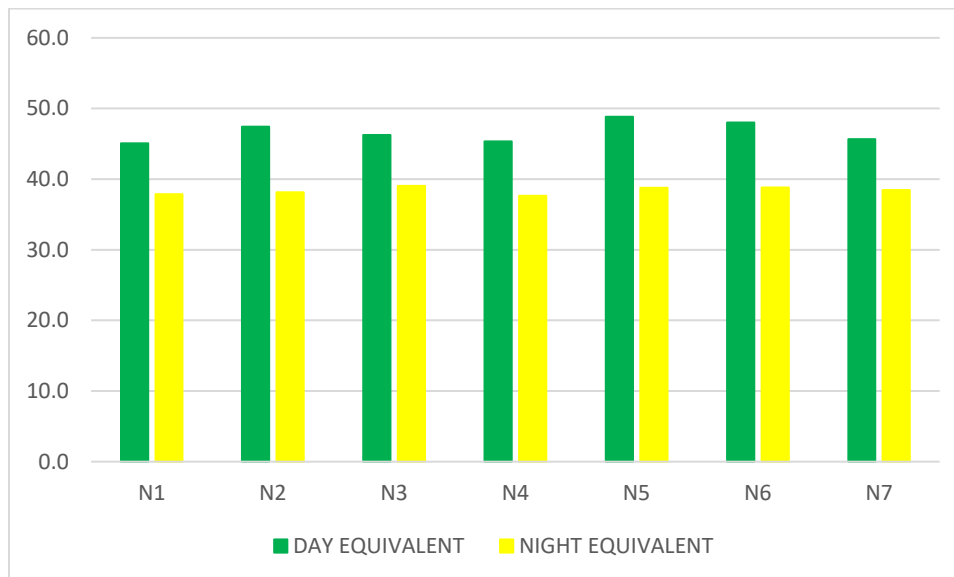


The results are given in Table below.

Table 3.8 Noise monitoring results					
S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
N1	WITHIN MINE LEASE AREA	45.1	37.8	75	70
N2	VADAPOONDIPATTU VILLAGE	47.4	38.2		
N3	SUMANGALI VILLAGE	39.1	46.3		
N4	KARANDAI VILLAGE	37.6	45.3		
N5	KELNELI VILLAGE	38.8	48.8		
N6	MARIYANALLUR VILLAGE	38.8	48		
N7	PERUMPANDI VILLAGE	38.5	45.7		

The results are plotted as below.

FIG 3.15 DAY AND NIGHT EQUIVALENT VALUES IN 7 LOCATIONS

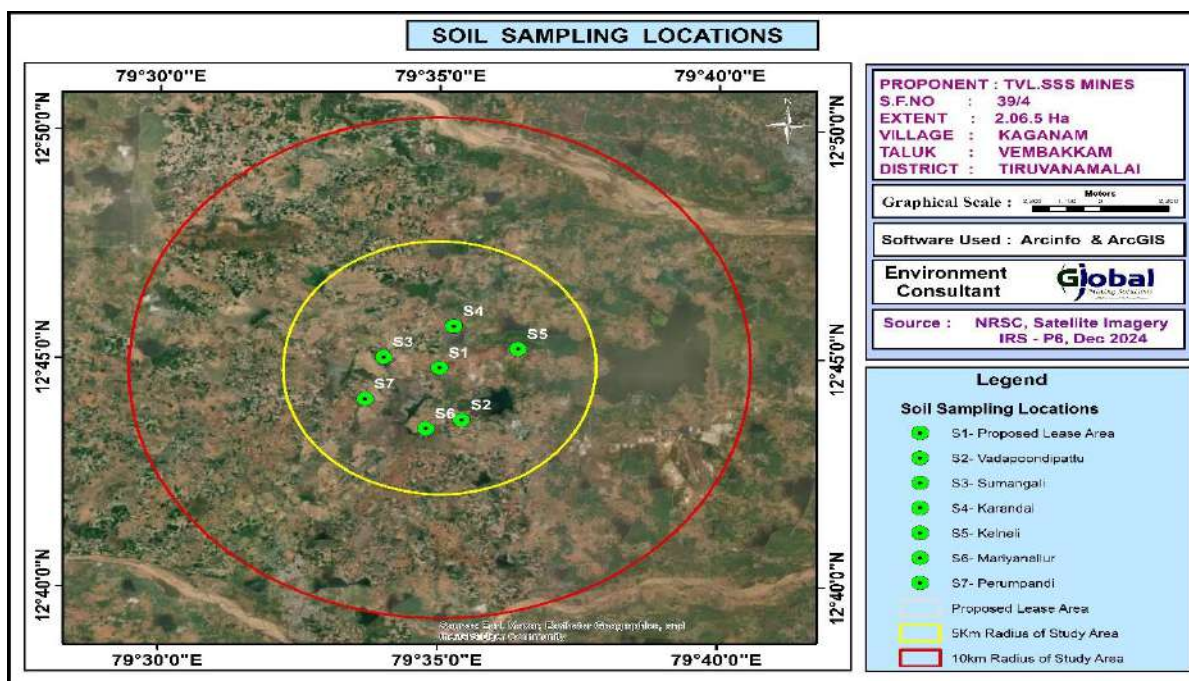


All the values are found to be within CPCB norms.

3.3.5 SOIL SAMPLING ANALYSIS

Soil samples have been collected from the mine lease area and 6 other locations from Somaspadi, Karampoondi, Iyangunnam, Kazhikulam and Namiyandal So Villages. The locations are shown in figure below.

FIG 3.16 BASE MAP OF SOIL SAMPLING LOCATIONS



The results are summarized in the table below.

Table 3.9 Results of Soil Sample Analysis								
S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	6.78	6.66	7.26	7.05	7.56	6.96
2	Electrical Conductivity	µmhos/cm	70.24	158.80	104.30	110.60	174.10	95.64
3	Dry matter content	%	95.68	94.67	96.14	97.84	90.70	97.78
4	Water Content	%	4.32	5.33	3.86	2.16	9.30	2.22
5	Organic Matter	%	1.25	1.95	2.09	1.68	2.09	1.65
6	Soil texture	-	sandy clay	clay	silt loam	loam	SILTY CLAY	SILTY CLAY
7	Grain Size Distribution	%	61.00	37.76	17.89	36.47	5.86	6.48
	i. Sand							
	ii. Silt							
9	iii. Clay	%	53.74	41.20	16.41	19.93	54.59	46.84
10	Phosphorous as P	mg/kg	0.69	0.78	1.32	0.96	1.75	1.11
11	Sodium as Na	mg/kg	745	998	1020	812	656	1042
12	Potassium as K	mg/kg	366	1056	976	765	794	896
13	Nitrogen and Nitrogenous Compounds	mg/kg	232	364	297	255	366	455
14	Total Soluble Sulphate	%	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)
15	Porosity	%	20.7	24.4	23.1	21.6	20.5	22.3
16	Water Holding Capacity	Inches/foot	38	36	40	42	40	36

3.3.6 BIOLOGICAL ENVIRONMENT

The biological study of the area has been conducted in order to understand the ecological status of the existing flora and fauna to generate baseline information and evaluate the probable impacts on the biological environment. The details are given below.

Flora in the study area

Field survey is done. For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Also, data from the State Forest department is used.

Core Zone

During the field visit, it is observed that there are no national parks / Sanctuaries / forests in the 10km buffer area. The study area is devoid of any major plantations.

Table 3.10 Flora in Core Zone			
S.No.	Scientific name	Vernacular/English name	Type of flora
1	Calotropis gigantea	Erukku	Shrubs
2	Cassia auriculata	Aavarai	
3	Achyranthes aspera	Nayuruvi	

Buffer zone

Only common trees, shrubs, bushes, etc. are found. The list is given below.

Table 3.11 Flora in Buffer zone			
S.No.	Scientific name	Vernacular/English name	Type of flora
1	Azadirachta indica	Neem	Trees
2	Carica papaya	Papaya	
3	Mangifera indica	Mango	
4	Acacia leucophloea	Velamaram	
5	Acacia nilotica	Karu- velamaram	
6	Moringa oleifera	Murungai	
7	Tamarindus indica	Puli	
8	Tectona grandis	Theku	
9	Manilkara zapota	Sappota	
10	Musa paradisiaca	Valzhilai	
11	Borassus flabelliformis	Panna-maram	
12	Ficus benghalensis	Alamaram	
13	Ficus religiosa	Arasamaram	
14	Phyllanthus emblica	Nelli	
15	Calotropis gigantea	Yerukku	Shrubs
16	Cassia auriculata	Aavarai	

17	Ricinus communis	Aamanakku	
18	Tecoma stans	Arali	
19	Aloe vera	Kathalai	
20	Catharanthus roseus	Nithyakalyani	Herbs
21	Acalypha indica	Kuppaimeni	
22	Coccinia grandis	Kovai	Climbers
23	Cissus quadrangularis	Pirandai	
24	Jasminum angustifolium	malli	
25	Ziziphus oenopia	Ilandai	Grasses
26	Cymbopogon	Kanam	
27	Cyperus rotundus	Kora grass	
28	Cynodon dactylon	Arugu	

Fauna in the study area

There is no specific Fauna found within ML area. The buffer zone Fauna in the area is studied by direct observation method. Secondary data collected from Forest department and the same is used in this report. People in the nearby locality were also consulted. The commonly found fauna in the area are given below.

Table 3.12 Fauna in buffer zone				
S.No.	Scientific name	Common name	Type of fauna	Schedule to which the species belong
1	Canis familiaris	Common dog	Mammals	IV
2	Felis catus domesticus	Domestic cat		IV
3	Golunda ellioti	Indian bush rat		IV
4	Funambus palmarum	Squirrel		IV
5	Lepus nigricollis	Indian hare		IV
6	Bos indicus	Domestic cow		IV
7	Common Crow	Corvus splendens	Birds	V
8	House Sparrow	Passer domesticus		IV
9	Common Myna	Acridotheres tristis		IV
10	Streptopelia chinensis	Pigeon		IV
11	Calotes versicolor	Lizard	Amphibia	IV
12	Ptyas mucosa	Snake		IV
13	Rana hexadactyla	Frog		IV

3.3.7 LAND USE

Remote Sensing Satellite Data Used for the Study

For Land-use and land cover study, sensing satellite data of Geo EYE has been used as per Figure No. 1. A land use map showing 10 Km radial distance. The geographical coordinates of the project are **Latitude:** 12°44'44.41"N to 12°44'51.65"N, **Longitude :** 79°34'59.03"E to 79°35'03.47"E.

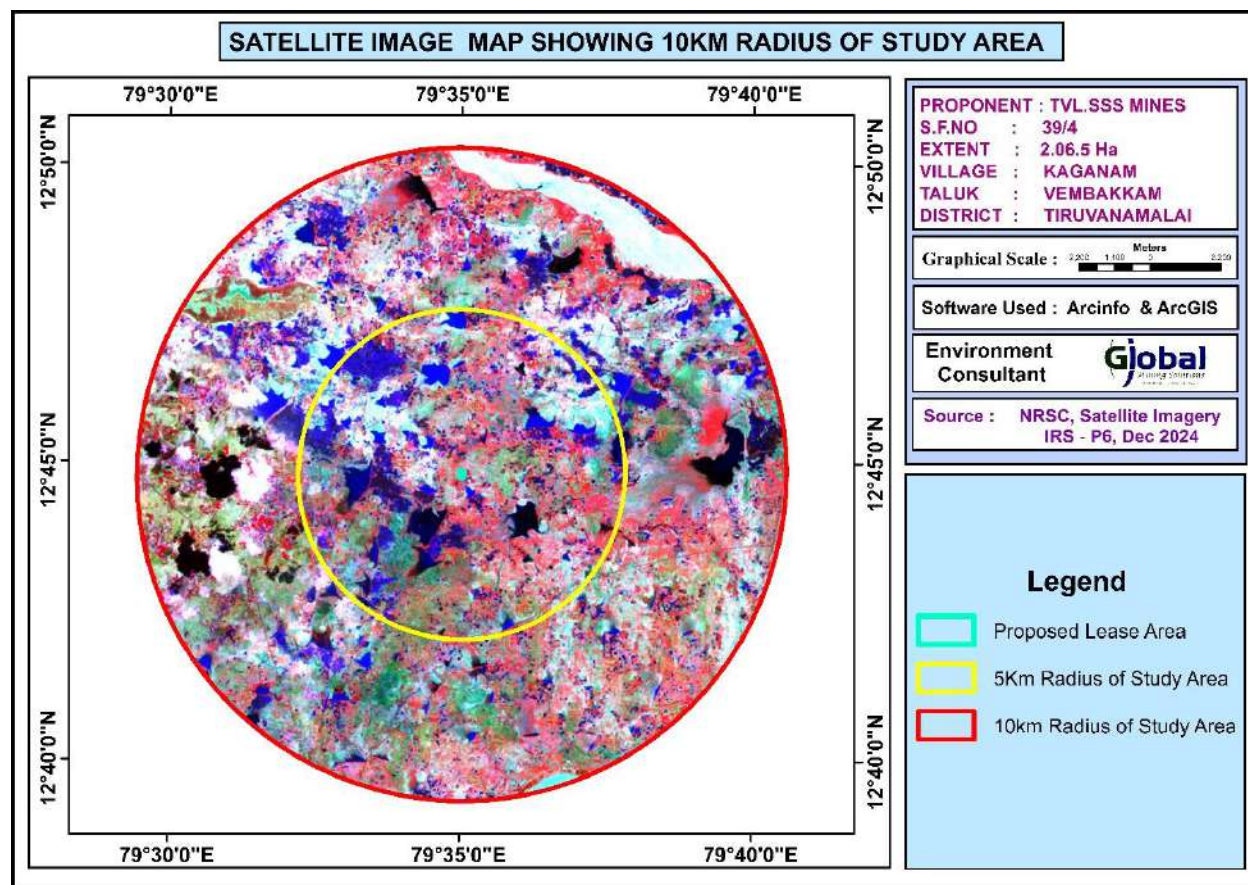


Figure No. 3.17: Remote Sensing Satellite Image

Selection of remote sensing satellite image (RSI) is on the availability of cloud free data and interpretability of predominant landuse and land cover (LULC) category. The examination of satellite data showed that the region is always covered by clouds with lesser percentage during summer due to cluster habitation. But rained crops are cultivated during southwest monsoon and hence a data acquired during first onset of precipitation is preferred so as to delineate crop and fallow land parcels of agricultural

category. Delineation of scrub land is also possible since land with scrub could be easily distinguished from crop vegetation and separated. This may be an arduous task during monsoon since the entire area would be witnessed with sudden sprout of lush natural vegetation, mostly *prosopis*, with first onset of precipitation.

Methodology Adopted for the Land Use Study

Present study involves micro level analysis of landuse pattern showing 10 km radius and changes in landuse pattern using satellite data. This necessitates a careful analysis of satellite data adopting a well-defined methodology.

To cater the requirement, a preliminary assessment of terrain using digital analysis helping to infer relationship between terrain and landuse has been carried out. Such an approach provides lucid understanding of landuse units and enhances the knowledge on the landuse pattern assisting in impact assessment.

The knowledge base thus generated is used to delineate various landuse units while carrying out interpretation of the satellite image. The derived landuse information is transformed into a GIS based spatial database using geo-referencing techniques. Besides, a limited but well focused field investigation also carried out and coordinates of significant landuse units using handheld GPS (Global Positioning System) are gathered to be used as control points for geo-referencing. Interpreted landuse units are verified in the field to carryout necessary corrections wherever is required before preparing final landuse map.

Using the image elements such as color, tone, texture, size, shape and associated elements various landuse units are delineated following the categorization and nomenclature adopted for the national level landuse classification system as recommended by National Remote Sensing Centre (NRSC), Department of Space, and Government of India. Some of the landuse units that are identified in the study area are listed in **Table No. 3.13** given below.

Field Verification:

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map.

Table No.3.13: Major Land use Units of the Study Area

Sr. No.	1st level classification	2nd level classification
1	Built-Up Or Habitation	Residential
		Commercial / Industrial
2	Agriculture	Crop / Fallow Land
		Plantation
3	Water Bodies	Reservoir / Lake / Pond
		River
4	Vegetation Cover	Scrub
		Open Vegetation
		Close Vegetation
		Mangroves
5	Waste Land	Open Without Scrub
		Open With Scrub
6	Others	Mudflow
		Salt Pan
		Brick Manufacturing

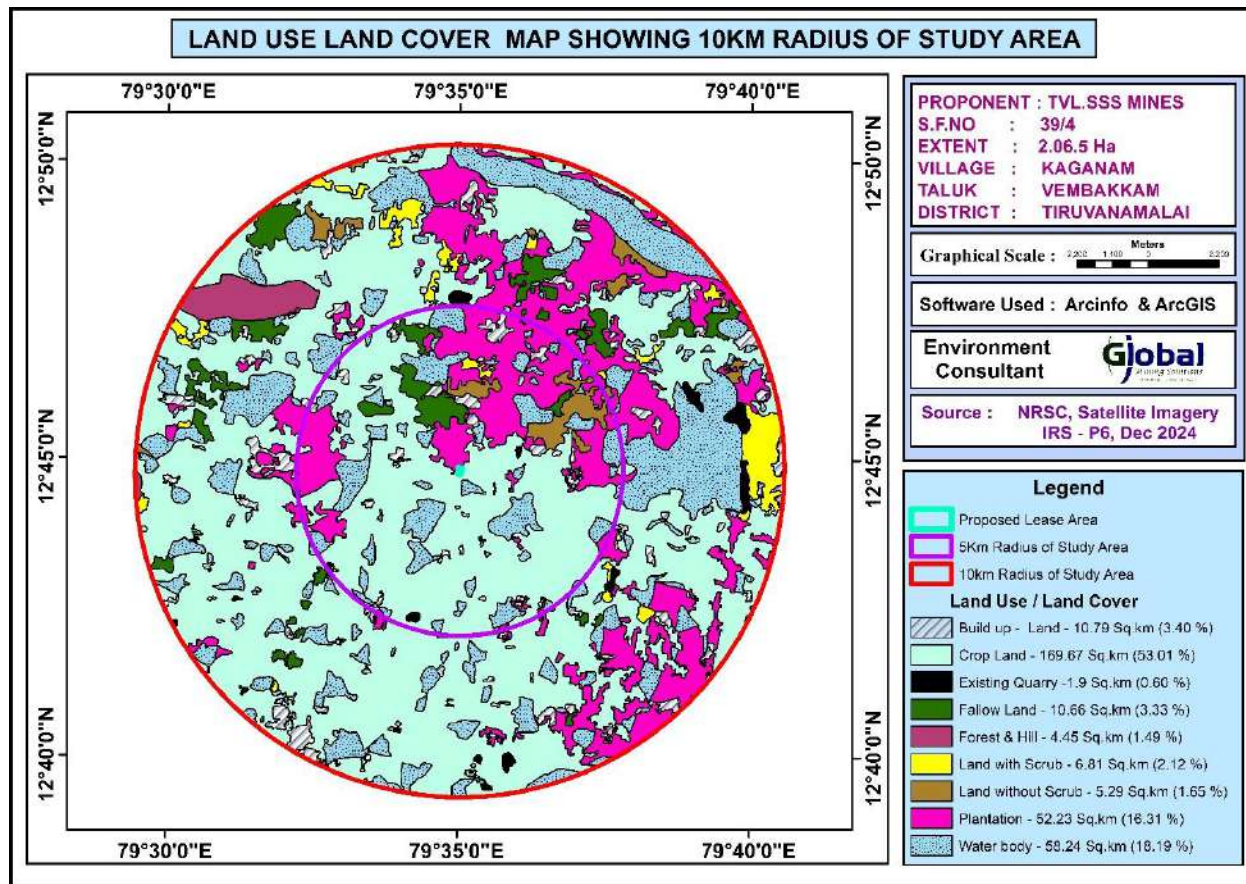
Land Use Pattern of 10 km Radial Buffer Area of Project Site

The existing land use pattern and land cover distribution of the whole acquired block, have been studied from the satellite imagery and subsequent ground checking during the field surveys.

It mainly comprises of agricultural land with bi-annual crops of Kharif (Kharif: Jowar, Bajra, Cotton, etc. Season: July to October) and Rabi (Rabi: Wheat, Rai etc. Season: December to March). The presence of the agricultural land is followed by few dense settlements Kaganam village natural or man-made pond etc. The shortage of rainfall, availability of ground water at deeper level and other climatic condition do not support good agricultural productivity inspite of having enough land. There is no demarcated forest land within the study area, however, some scattered forest is found throughout the 10 km radius, especially along the periphery of the villages.

The general landuse pattern of the core and buffer may be broadly classified into four major types – Buildup or habitation, Agriculture, Water Bodies, Waste land and Other categories. Under buildup or habitation category covered villages, town and infrastructure. Under agriculture category considered crop land/fallow land and plantation. Under the water body categories Reservoir/ lake, pond, River and stream. Under wasteland category considered landwith scrub and land without scrub is interpreted. Lastly other category's covered Mines area and forest are interpreted under this category. These categories are delineated from the selected satellite image using image elements such as color, tone, texture, size, shape and associated elements. The delineated landuse units are transformed into a spatial database in GIS environment. Estimated for area and representation of each category in the study area. The total area of LULC in the study area is calculated as 320.04 sq. km and spatial distribution of various LULC categories within buffer area are discussed below. The 5km and 10km radius landuse map is shown above. The details are given below.

FIG 3.18 LAND USE/LAND COVER MAP OF THE STUDY AREA



Land Use / Land Cover Classification classified into first level classification and second level classification and major land use/land cover classes were demarcated in the study area following Level II classification. A thematic map of 1:50,000 scale was generated incorporating these classified categories considering the area of the project.

Built-up / Settlements

Settlements in the study area are generally small to medium size in stature and area scattered. Tiruvannamalai is the relatively larger settlements observed at the north part of the study area.

Interpretation of settlement from the satellite image is based upon the image elements such as color, tone, texture and association. It is delineated by their typical red color. Association with linear features such as roads reaffirmed the presence of delineation of settlements. The spatial extent of settlement is estimated as 24.90 sq. km representing 3.40% of the study area and Industrial + Commercial area covers 10.79 sq. km with 3.40 %.

Agricultural Land

Under the broad category of agriculture crop land, fallow land and plantation is delineated. Cultivation is mostly dependent upon river water for irrigational activities are good. River, Ponds and tanks in each village act as rainwater storage units and do support domestic requirement and even cultivation to some extent. Because of these conditions, minimal water requiring crops such as corn, sunflower, oil seeds, grams, millets and coriander are cultivated. Cultivation is the most predominant crop cultivated and even if it failed their stalks are used as fodder for cattle.

Crop and Fallow land are interpreted using their image elements such as light to green, smooth to medium tone, they are the second most predominant landuse category delineated in the buffer area. As explained earlier, cultivation mostly depends upon river, canal and rainfall and majority of the land parcels are tilled and ready for cultivation with even a scanty Canal. Hence, cropland is the predominant category estimated at 229.3 Sq.km representing 69.33% of the buffer area.

Wasteland

The last category of the landuse units in the study area is "Wasteland" which denotes land parcels that could not be utilized for cultivation even after conservation measures – such as land with scrub, land without scrub area.

Next to agricultural area, natural vegetation such as land with scrub forms the predominant LULC category of the buffer area. Land with scrub is sparse and delineated as patches scattered in all the parts of the buffer area. The spatial pattern of scrub suggests it is closely associated with water courses. This category occupies land with scrub an area of 6.81 sq.km representing 2.12 % of the total core and buffer area.

Land without scrub, on the other hand is interpreted using brown to white color, medium tone and medium texture and is generally restricted around land covered with scrub and fallow land. They occur as small patches and very minimal area covering 5.29 sq.km representing 1.65 % of the buffer area.

Water bodies

Many Streams small and big water bodies are seen in the study area distributed all over the study area. They support the domestic water requirements and for cattle. At some places, they may also use for irrigation purpose and are very limited. Few dry stream courses are also seen in the study area. In the satellite image, water bodies are interpreted by their light blue to greyish blue color, smooth tone and smooth texture.

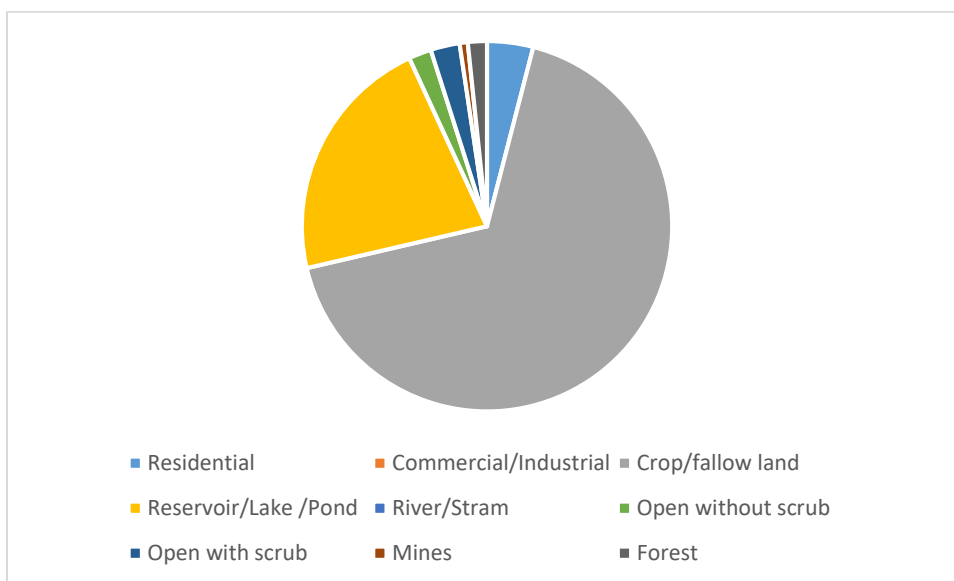
Most of the water bodies retain water for a shorter period after precipitation due to the soil constraint and hence go dry soon. Spatial extent of rivers, stream and water bodies is estimated at 58.24 sq.km and 18.19 %.

Mining area

Mining area seen in the study area distributed all over the study area. Major domestic income from mining business. Spatial extent of mining is estimated at 1.9 sq.km with 0.6 %. Spatial extent of forest/government pattaland, etc is estimated at 10.79 sq.km with 3.40%.

Table No. 3.14: Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	10.79	3.40	Residential	10.79	3.40
				Commercial/Industrial	0.31	0.10
2	Agriculture	221.9	72.99	Crop/fallow land	180.33	56.3
3	Water bodies	58.24	18.19	Reservoir/Lake /Pond	58.24	18.19
				River/Stram		
4	Waste Land	10.66	3.33	Open without scrub	5.29	1.65
				Open with scrub	6.81	2.12
5	Mines	1.9	0.6	Mines	1.9	0.6
6	Forest	4.45	1.49	Forest	4.45	1.49
Total		320.04	100	Total	320.04	100



3.3.8 SOCIOECONOMIC ENVIRONMENT

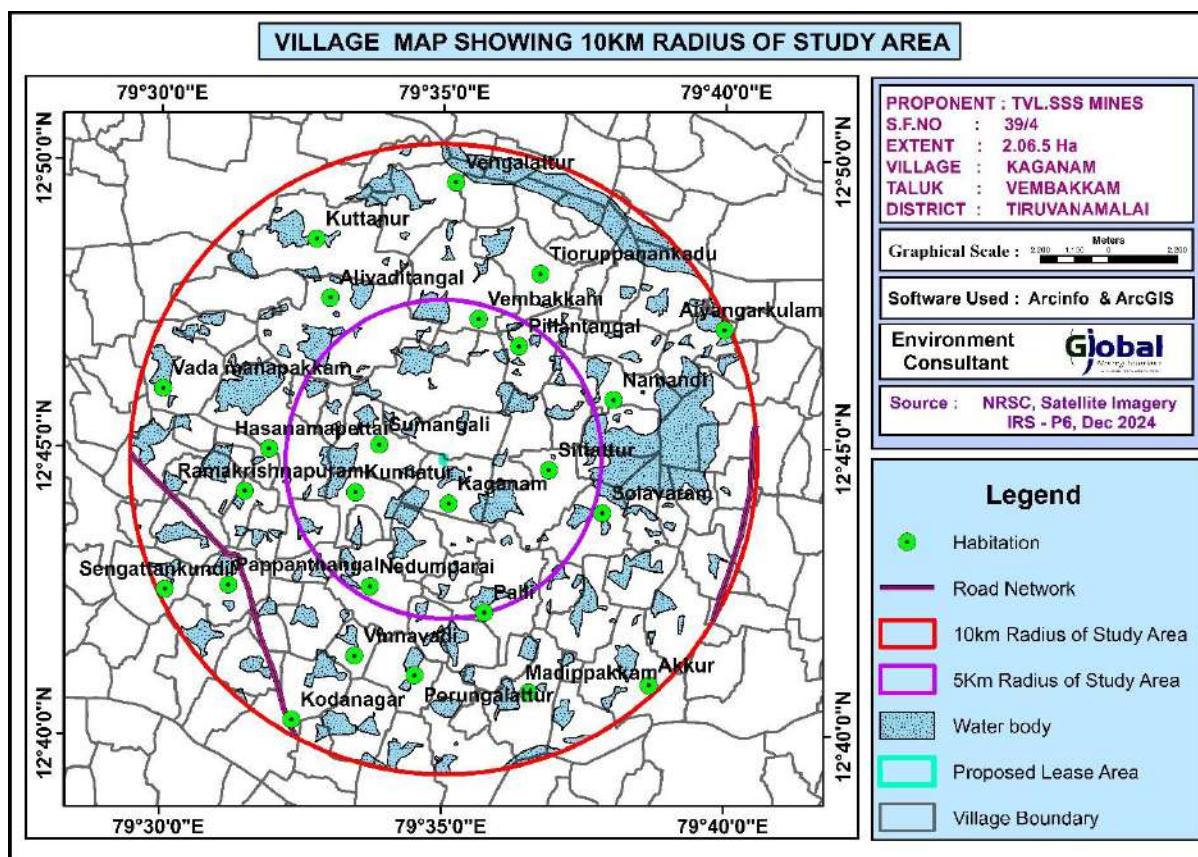
The socio-economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used. The following data area collected from secondary data:

- Demographic pattern.
- Health pattern
- Occupational structure.

3.11.1 DETAILS OF VILLAGES

The profile of the villages located in the study area is given in Fig 3.19 below.

FIG 3.19 VILLAGE MAP OF THE STUDY AREA



DETAILS OF VILLAGES

The project is located in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State. The total population is 299612 which comprise of 149969 males and 149643 females. There are 62 rural & urban villages and one urban area in the study area. List of villages are given below.

Table 3.15 Village details in study area				
S.No.	Village/Town Name	Radius	Taluk Name	District Name
1	sumangali	1-5km	Vembakkam	Tiruvannamalai
2	kannatur			
3	kaganam			
4	nedumparai			
5	pappanthangal			
6	palli			
7	vembakkam			
8	pillanthangal			
9	Vengalattur			
10	Tioruppanankadu			
11	ayangarkulam			

12	Namandi	6-10	Tiruvannamalai	Tiruvannamalai
13	Solavaram			
14	Akkur			
15	Madippakkam			
16	Perungalattur			
17	Kodanagar			
18	Vinnavadi			
19	Sengattankundil			
20	Ramakrishnapuram			
21	Hasanamapettai			
22	Vadamanapakkam			
23	Alivadithangal			
24	kuttanur			

Table 3.16 Population profile of the study area		
Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	149969	50
Female Population	149643	50
Total	299612	100
B. Population break-up by Caste		
Scheduled Caste	55802	18.62
Scheduled Tribes	3952	1.32
Others	239858	80.06
Total	299612	100
C. Literacy Level		
Male Literate Population	117656	39.27
Female Literate Population	98975	33.03
Male Illiterate	32313	10.78
Female Illiterate	50668	16.91
Total	299612	100
D. Occupational structure		
Main workers	107876	-
Marginal workers	21633	-
Total Workers	129509	43
Total non-workers	170103	57
Total	299612	100

The above table shows that the male and female population ratios are almost equal. Among the total population 1.32 % belong to Scheduled Tribes, 18.62 % are Scheduled Caste and the balance 80.06 % people belong to other castes. Among the total population 72.3 % of the people are literate. Among the total population 39.27 % are literate males and 33.03 % are literate females. This shows that the male literates are higher than the female literates. The results are plotted in figures below.

FIG 3.20 GENDER-WISE POPULATION DISTRIBUTION

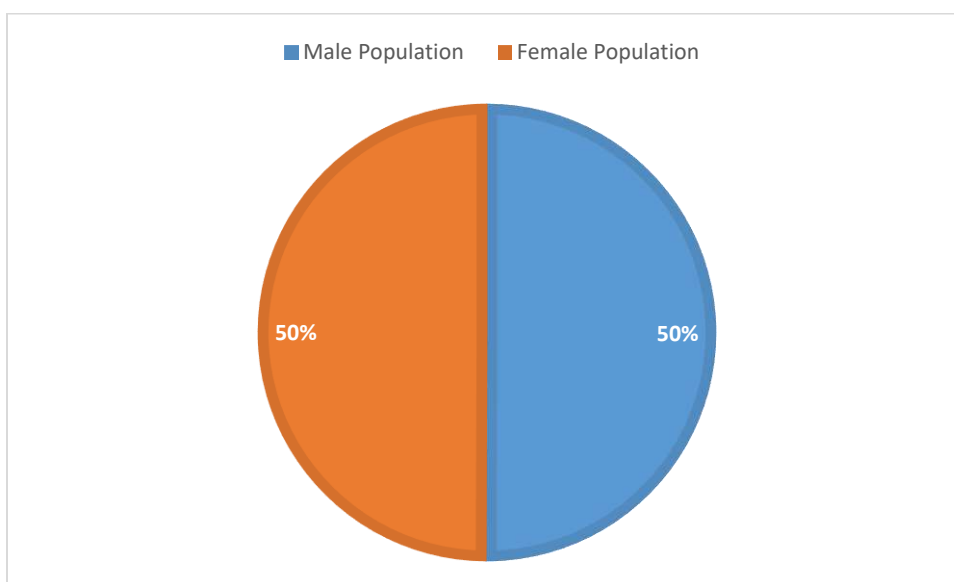


FIG 3.21 GENDER WISE LITERACY DISTRIBUTION

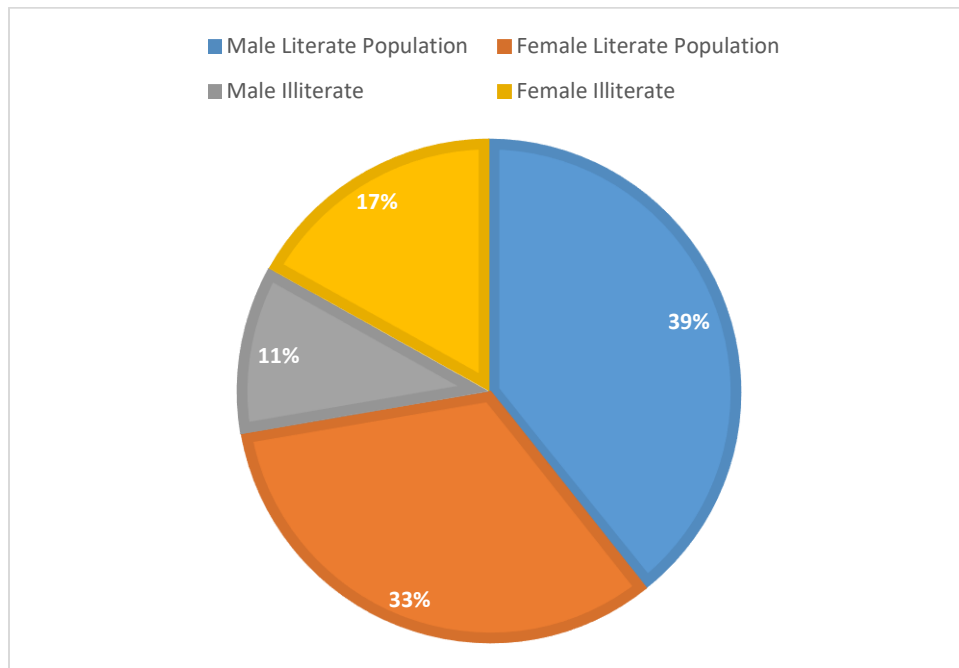
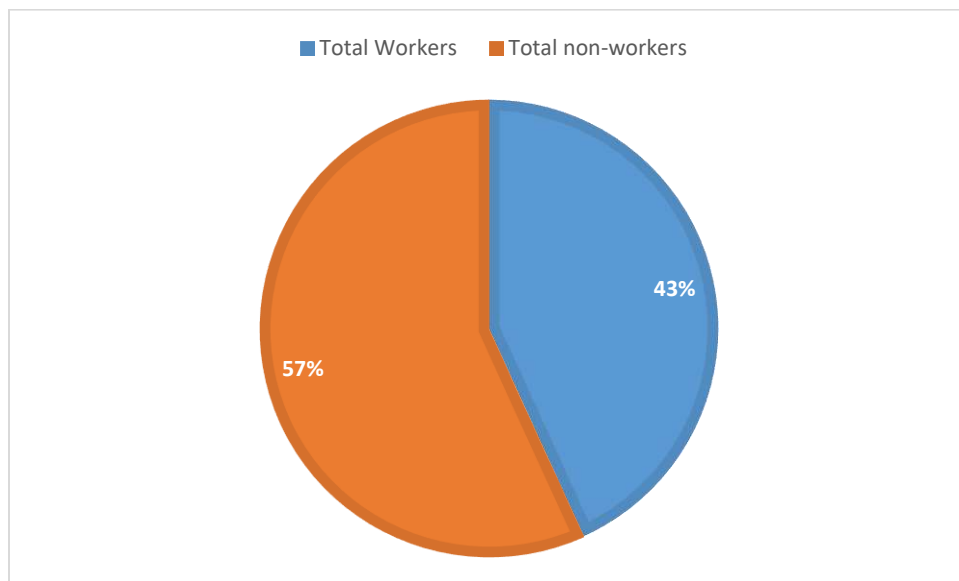


FIG 3.22 OCCUPATIONAL STRUCTURE WITHIN BUFFER ZONE



Infrastructure facilities in the study area

Education

Table 3.17 Educational infrastructure -10 km radius from proposed mine lease

S. No.	Particulars	Available in village (Nos)
1	Govt. Primary School	Vembakkam - 23
2	Govt. Middle School	20
3	Govt. Secondary School	15
4	Govt. Senior Secondary School	15
5	Govt. Arts and Science Degree College	23
6	Govt. Engineering College	1
7	Govt. Medicine College	0
8	Govt. Management Institute	0
9	Govt. Polytechnic	0
10	Govt. Vocational Training School/ITI	0

In the study area, there are totally 23 Primary Schools functioning in these 13 urban areas. Among them 35 villages have 15 primary school, 20 villages have 16 primary schools & 32 villages have more than 12 primary school.

Healthcare

In the study area, the following facilities are available.

Table 3.18 Medical Infrastructure-10 km radius from proposed mine lease

S.No.	Particulars	Available in village (Nos)
1	Community Health Centre	10
2	Primary Health Centre	5
3	Primary Health Sub Centre	26
4	Maternity And Child Welfare Centre	17
5	TB Clinic	11
6	Hospital Allopathic	0

Other Infrastructure

The other infrastructure facilities available are given below.

Table 3.19 Other Infrastructure-10 km radius from proposed mine lease

S.No.	Particulars	Available in village
1	Tap Water-Treated	55
2	Covered Well	16
3	Hand Pump	18
4	Tube Wells/Borehole	15
5	Post office	12
6	Public bus services	10

7	Commercial Bank	19
8	Cooperative bank	15

Sample Survey

The expert visited 5 villages in the study area namely Somaspadi, Karampoondi, Iyangunnam, Kazhikulam and Namiyandal so villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also visited nearby hospitals, primary health centers and Tiruvannamalai. The following observations were made.

Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Tiruvannamalai which is about 10.0 km from the lease area. Major schools with higher secondary and senior secondary schools are located in Tiruvannamalai. The major Kaganam Union located in the area is Tiruvannamalai. Facilities like petrol pump stations, ATM facility are available in Tiruvannamalai.

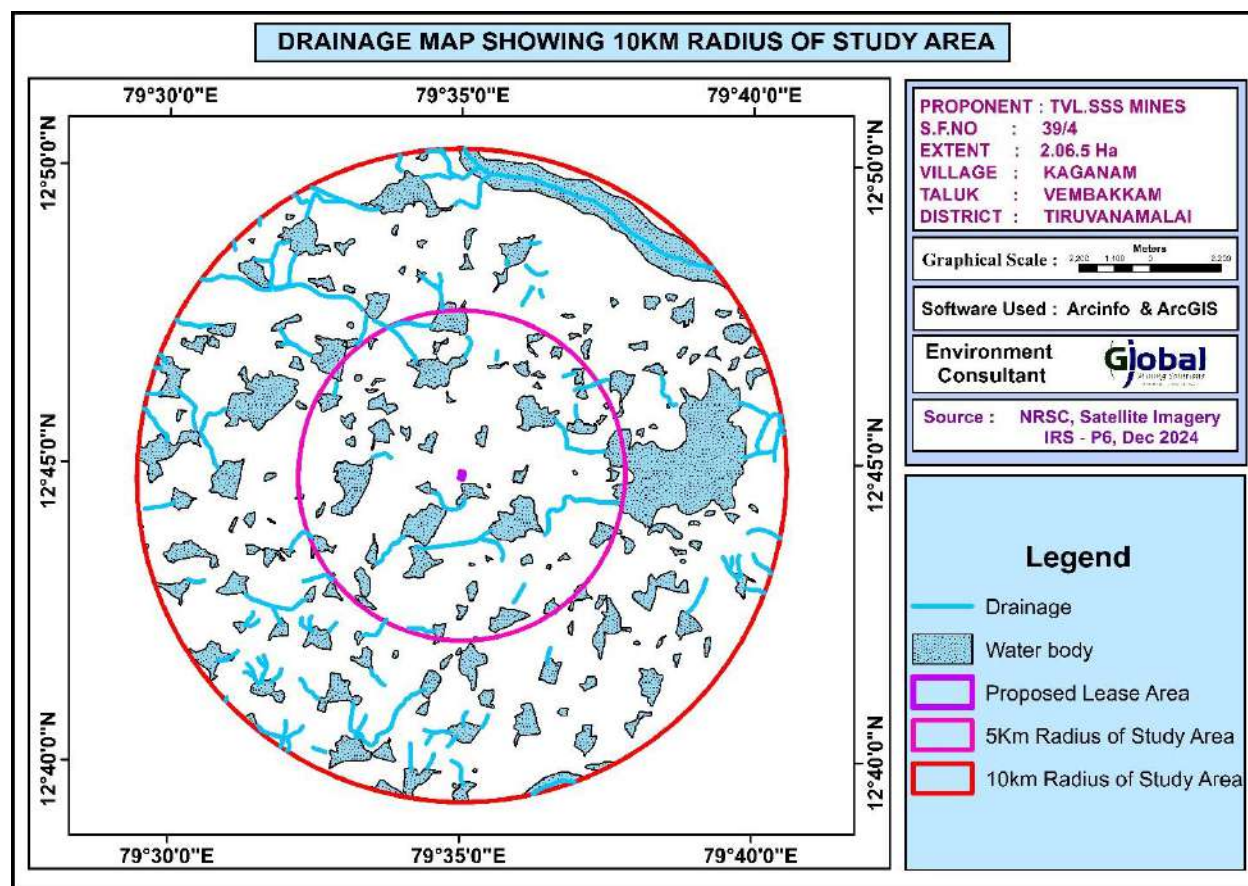
3.3.9 HYDROGEOLOGY OF THE STUDY AREA

There is Thurunjal River is located at a distance of 7.6 km (SW) direction of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

HYDROGEOLOGICAL STUDY

To assess the hydrogeological condition of the surrounding proposed mine lease area. The study area is located in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District is considered to understand the nature of the general hydrogeological conditions of the surrounding proposed mine lease area.

FIGURE 3. 23 10 KILOMETER RADIUS OF THE DRAINAGE MAP



PHYSIOGRAPHY AND DRAINAGE

Physiography: The area applied for quarry lease exhibits hilly terrain covered by rough stone. The massive Charnockite formation is clearly visible right from the surface and gentle towards Southwestern side of the area, the altitude of the area is above 225 m (maximum) from MSL.

Drainage: The drainage pattern study reveals that from the proposed mine lease area with around 1 Km radius and 10 Km study observed in Figure 3.20. There is Thurunjal River is located at a distance of 7.6 km (SW) direction of lease area.

GEOLOGY, GEOMORPHOLOGY AND SOIL

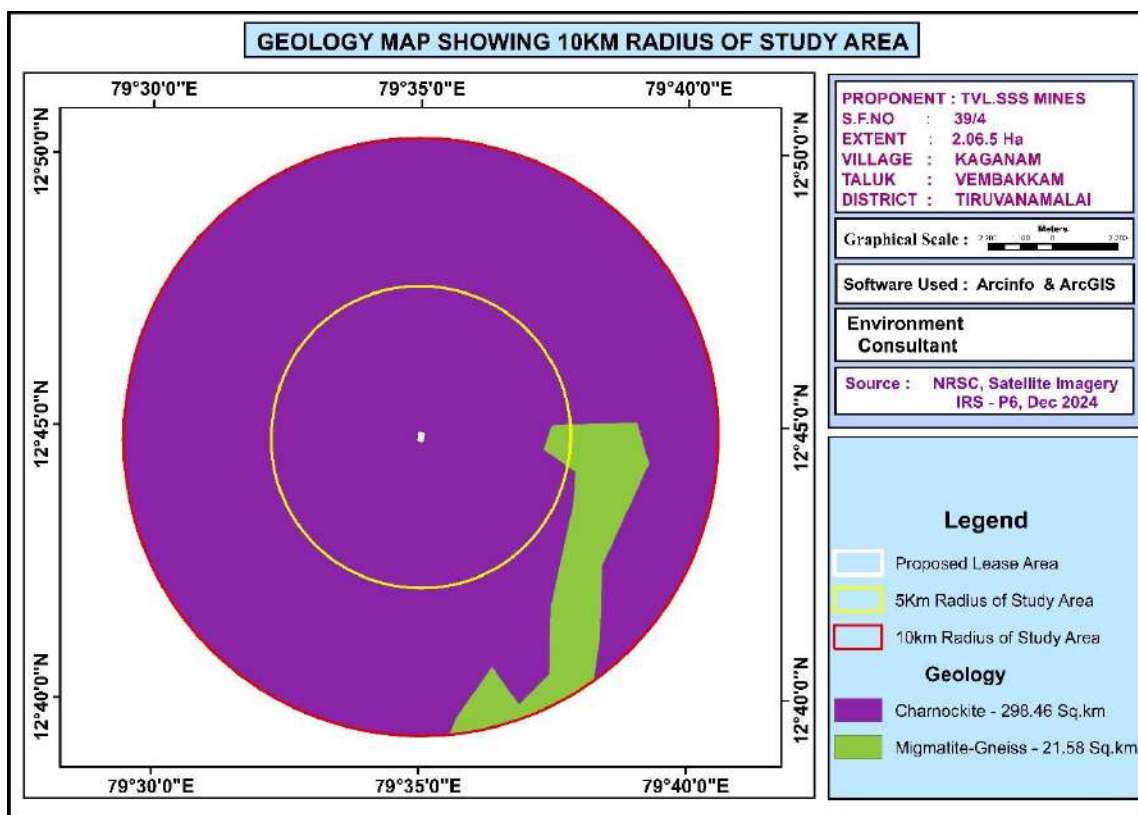
Geology:

Geologically Tiruvannamalai District is mostly underlain by the Archaean crystalline and metamorphic complex. The geology of the district is complicated due to recurring

tectonic and magmatic activities occurred during. Pre-Cambrian period. Hornblende Biotite Gneisses are the oldest rocks of the district. It is very fissile and present widely in plains. The gneisses are highly weathered upto 30 m at some places.

The Charnockites are coarse grained, massive and foliated at places and their colour is bluish dark to grey. They are the second largest rock type present in the district. They are massive and less weathered than the gneisses. They exhibit 2 to 3 distinct set of joints and most of them are vertical with steep dips. Iron ore deposits associated with quartz feldspathic gneiss and garnetiferous quartz gneisses are present in some areas. These rocks are highly folded and jointed and less weathered. Quartzite and crystalline lime stones are exposed in patches in north and central parts of the district. The thickness of these bands varies from a few meters to ten meters and the length extends to few kilometers. Numerous lenses of dunite with magnesite veins of various dimension are exposed within gneiss .There are number of basic dykes present in the study area. Granites are found in some parts of the district. They are massive and jointed poorly. Several faults and shears are occurring mostly with north east-southwest trend. They are expected to influence the course of groundwater movement, its storage and developmental potentials in the district. Regional Geology map for the 10 Km radius from the proposed project site is given as Figure 3.23

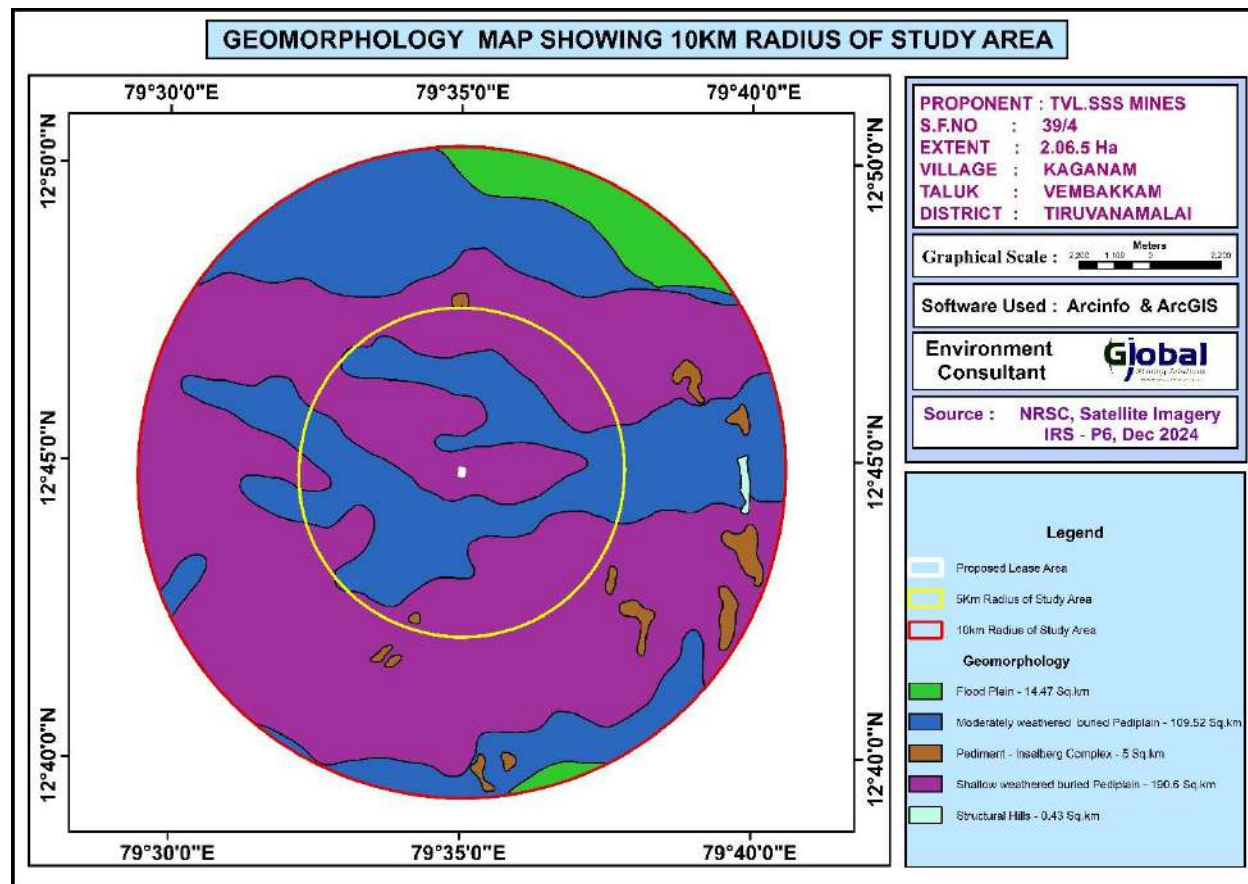
FIGURE 3. 24 10 KILOMETER RADIUS OF THE GEOLOGY MAP



Geomorphology: The Core and 10 Km buffered zone geomorphological features (Figure 3.22) shows that the Tiruvannamalai district forms part of the upland plateau region of Tamil Nadu with many hill ranges, hillocks and undulating terrain with a gentle slope towards east. The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hills, 2) Bazada zone, 3) Valleyfill, 4) Pediments, 5) Shallow Pediments and (6) Deep Pediments. A number of hill ranges are located in the eastern and north-eastern parts of the district, whereas the southern, western and northern parts of the district are plain to undulating, dotted with a few isolated hillocks. The important hill ranges in the district are Arunachaleshwar hills, Varakūr Malai hills, Naraikinaru hills and Periya Malai hills. The highest peak in the district is the Arunachaleshwar Arunachaleshwar. 811 m (prom: 614 m), Varakūr Malai. 445 m (prom: 264 m), Periya Malai. 399 m (prom: 223 m), Vedyappan Malai. 414 m (prom: 187 m), Kachirāppat Malai. 349 m (prom: 173 m),

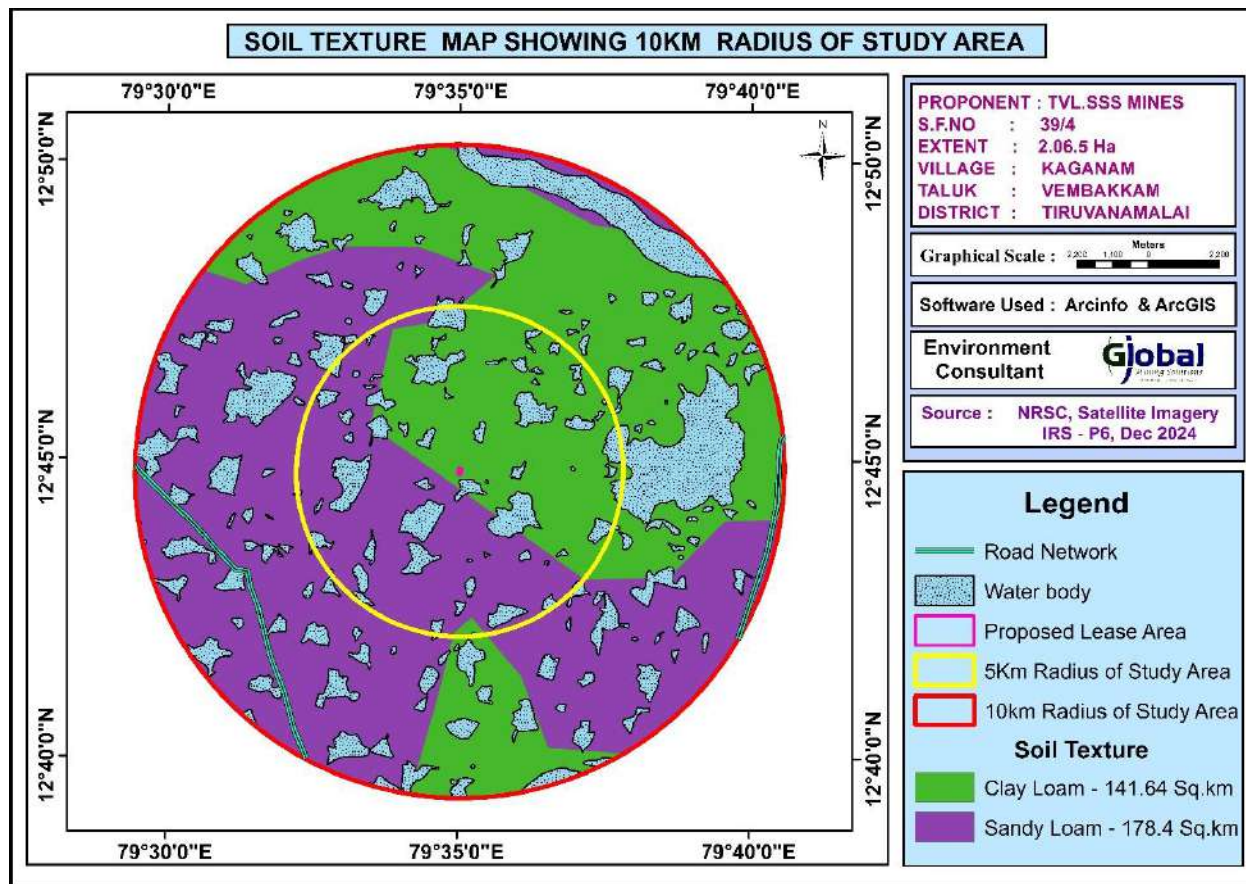
Valasa Malai. 285 m (prom: 121 m), Pulanji Malai. 278 m (prom: 110 m), Sulpakadi Durgam. 271 m (prom: 106 m) hill range.

FIGURE 3. 25 10 KM RADIUS OF THE STUDY AREA GEOMORPHOLOGY MAP



Soil: The soil types in the study area are mostly Calcareous black soil, Red loamy soil, clayey soil and Calcareous clayey soil (Figure 3.23.). Sandy loam is found in south-western part of the study area (178.4 sq.km). Clayey soil is found in North-Eastern part of the study area (141.64 sq.km).

FIGURE 3.26 10 KM RADIUS OF THE STUDY AREA SOIL TYPE MAP



BELOW GROUND LEVEL (BGL)

Figure 3.26 & 3.27 shows the Non-Monsoon and Monsoon water level map of the study area.

FIGURE 3.27 NON-MONSOON WATER LEVEL MAP OF THE STUDY AREA

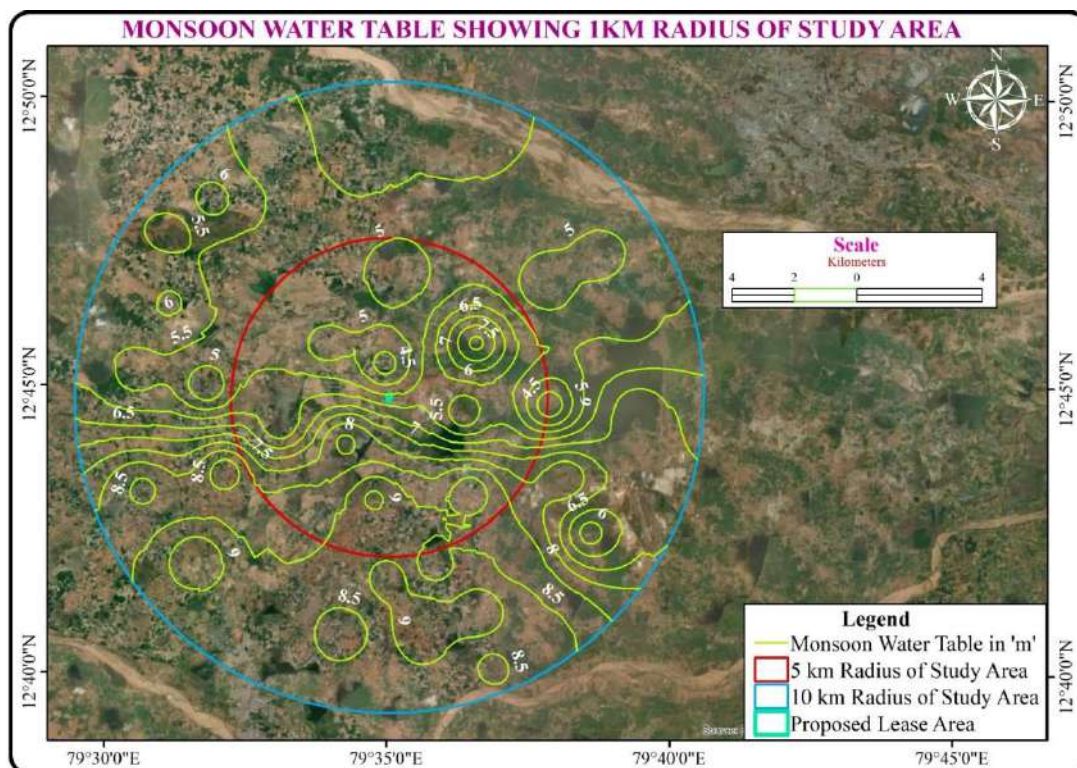
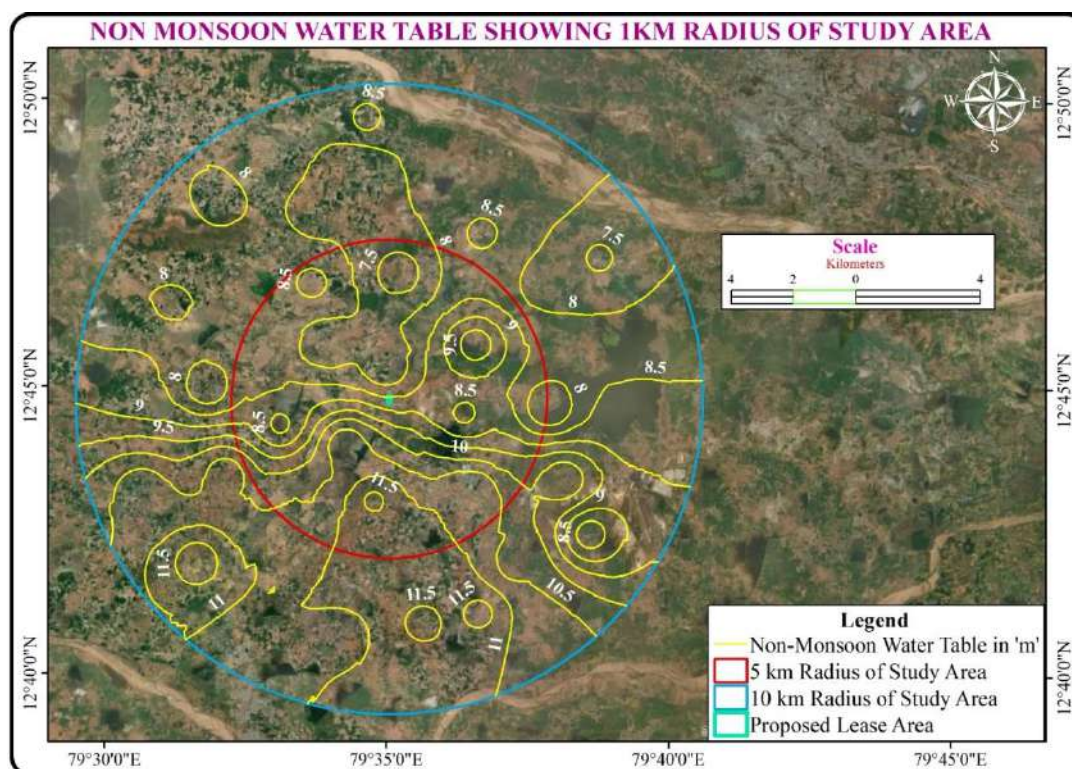


FIGURE 3.28 MONSOON WATER LEVEL MAP OF THE STUDY AREA



FIELD INVESTIGATION

The temporary seasonal streams water flow from center to outer most area. There is There is Thurunjal River is located at a distance of 7.6 km (SW) direction of lease area. The water is temporarily found only during the rainy season.

In this representation in the two seasons, the water level substantially gets fall-down in the non-monsoon season, because of the rainfall impact and it extended up to the Monsoon season. Some of the wells water level is shallow depth in both seasons. These dug wells are located nearby water bodies. So, clearly shows that surface water is impact in these wells.

The shallow depth of groundwater level in the monsoon season. It is interesting to note that the water level is increased because of heavy rainfall during the southwest and northeast monsoon. The groundwater table level is substantially increased in the monsoon season.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The study has revealed that potential fractures are encountered at deeper levels. The water in the wells are available mainly monsoon and it reduces during non-monsoon demanding the groundwater. Bore wells are deep and it reflects that the yield is only better at deeper water levels.

Rain water collected in the tanks in the region acts as a good source of water during monsoon season. In order to increase the recharge, tanks, and percolation ponds may be provided with the recharge wells/recharge shafts penetrating this impervious layer to make it more effective in recharging the aquifer.

CHAPTER 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

INTRODUCTION

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. The above activities may affect the surrounding environment like removal of rock mass, Loss of flora and fauna of the area, surface water discharge, change in air and water quality, etc., If adequate measures are not taken for the proposed operations, it will cause the environmental degradation of the area and it will lead to affect to the ecosystem of the surrounding environment.

In order to maintain the existing environmental scenario of the proposed mine lease area it is mandatorily required to assess the present ecology and environment of the proposed mine lease area and buffer area of the project before starting mining operations. The various environmental impacts which are identified by the proposed quarrying activities have been discussed below and its subsequent paragraphs.

- ❖ Land Environment
- ❖ Soil Environment
- ❖ Water Environment
- ❖ Air Environment
- ❖ Noise Environment
- ❖ Biological Environment
- ❖ Socio Economic Environment

4.1 DETAILS OF INVESTIGATED ENVIRONMENTAL IMPACTS DUE TO PROJECT LOCATION POSSIBLE ACCIDENTS, PROJECT DESIGN, PROJECT CONSTRUCTION, REGULAR OPERATIONS FINAL DECOMMISSIONING OR REHABILITATION OF A COMPLETE PROJECT.

This is a proposed Rough Stone Quarry of S. F. No. 39/4 over an extent of 2.06.5 Ha., in Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State. The method of mining is Opencast mechanized with a bench width and height of 5m. It is proposed to excavate to 2,71,250m³ of Rough Stone and 31,476m³ of Gravel upto a depth of 37m (maximum) below ground level for the period of five years. There is no stream/odai within the mine lease area.

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

The entire mine lease area is Patta land. It is proposed to be altered by effective quarrying operation such as excavation (1.58.0 Ha), Infrastructure (0.01.0), Road (0.01.0 Ha) and green belt will be developed in the safety zone of 0.46.5 Ha. The ultimate depth of quarrying is proposed with maximum depth of 37m above ground level and will not intersect the ground water table.

4.2 MEASURES FOR MINIMIZING AND /OR OFFSETTING ADVERSE IMPACTS IDENTIFIED

Aspect	Impact	Mitigation measures										
Topography	The area exhibits hilly terrain covered by rough stone 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 agricultural 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.	The major impact due to this project on land environment is the change in land use. Mining activity will be carried out upto a depth of 30m Above ground level. 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.										
		<table><tr><th>Land Use</th><th>Area in use during the quarrying period (Hect)</th></tr><tr><td>Area left for water body</td><td>1.58.0</td></tr><tr><td>Green Belt</td><td>0.46.5</td></tr><tr><td>Remaining area</td><td>0.02.0</td></tr><tr><td>Total</td><td>2.06.5</td></tr></table>	Land Use	Area in use during the quarrying period (Hect)	Area left for water body	1.58.0	Green Belt	0.46.5	Remaining area	0.02.0	Total	2.06.5
	Land Use	Area in use during the quarrying period (Hect)										
	Area left for water body	1.58.0										
	Green Belt	0.46.5										
	Remaining area	0.02.0										
	Total	2.06.5										

Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
Quarrying Pit	Nil	1.58.0
Infrastructure	Nil	0.01.0
Roads	Nil	0.01.0
Green Belt	Nil	0.46.5
Unutilized	2.06.5	Nil
Total	2.06.5	2.06.5

At the mine closure stage 1.58.0 Ha of lease area will be left as rain water harvesting pond 0.46.5 Ha will be developed with green belt.

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

	The ultimate pit dimension of the mine lease area is given below.	<table><tr><th colspan="4">Ultimate Pit dimension at the end of Mining plan Period</th></tr><tr><th>Pit No.</th><th>Length (max) (m)</th><th>Width (Avg) (m)</th><th>Depth (max) (m)</th></tr><tr><td>I</td><td>183</td><td>86</td><td>37m BGL</td></tr></table>	Ultimate Pit dimension at the end of Mining plan Period				Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)	I	183	86	37m BGL
	Ultimate Pit dimension at the end of Mining plan Period													
Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)											
I	183	86	37m BGL											
	If mining is not done systematically it will leads to the dumping failure in the mining area.													

Year	Species	No. of trees	Spacing	Survival
I	Neem/ Pungan	465	3m x 3m	80%
II				
III				
IV				
V				
Total		465		

Due to the thick vegetation around the mine lease area and sprinkling of water around the haul roads the dust emissions arise from the vehicles will be controlled. At the end of mining period, fencing will be provided around the mine lease area to arrest the entry of public/cattle to the mining area. The rough stone are proposed to quarry 5m bench height and 5m width with 60⁰ slope and with conventional opencast Mechanized method. As per the approved mining plan a safety distance of 7.5m, 10m shall be provided. There is no overburden anticipated during the entire Rough Stone quarrying operation. The excavated rough stone will be directly loaded into tipper to the needy crusher/other buyers.

Drainage	Mine drainage is surface water or groundwater that drains from an active or abandoned mine. One of the adverse impact of mine drainage is it will contaminate the ground water.	As per the approved mining plan the ultimate pit limit is 37m BGL. The ground water table is reported as 68 m. In the proposed mining plan only 37m below ground level 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.
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 37m 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 30m above ground level. In the post mining stage, the quarried out pit will be used for rainwater harvesting.

4.2.1 SOLID WASTE GENERATION AND MANAGEMENT

The plastic waste generation is very negligible and it will be collected from the source level in specific dustbin and disposed through the municipal bins.

- Identification of solid waste generations
- Providing dustbins to collect with different color coding
- Creating awareness among the employees
- Developing common storage yards
- Disposal to the nearby municipal yards
- Record keeping
- Review once in quarter

4.2.2 WATER ENVIRONMENT

Impact on Surface Water Resources

There is no seasonal or perennial Odai within the M.L area. The drainage pattern of the region is plane to sub-dendritic. Surface run-off water of the M.L. area is drained through proposed drainage and collected in the bottom of the quarry and collected water will be used for same quarry operation as such for plantation & dust suppression.

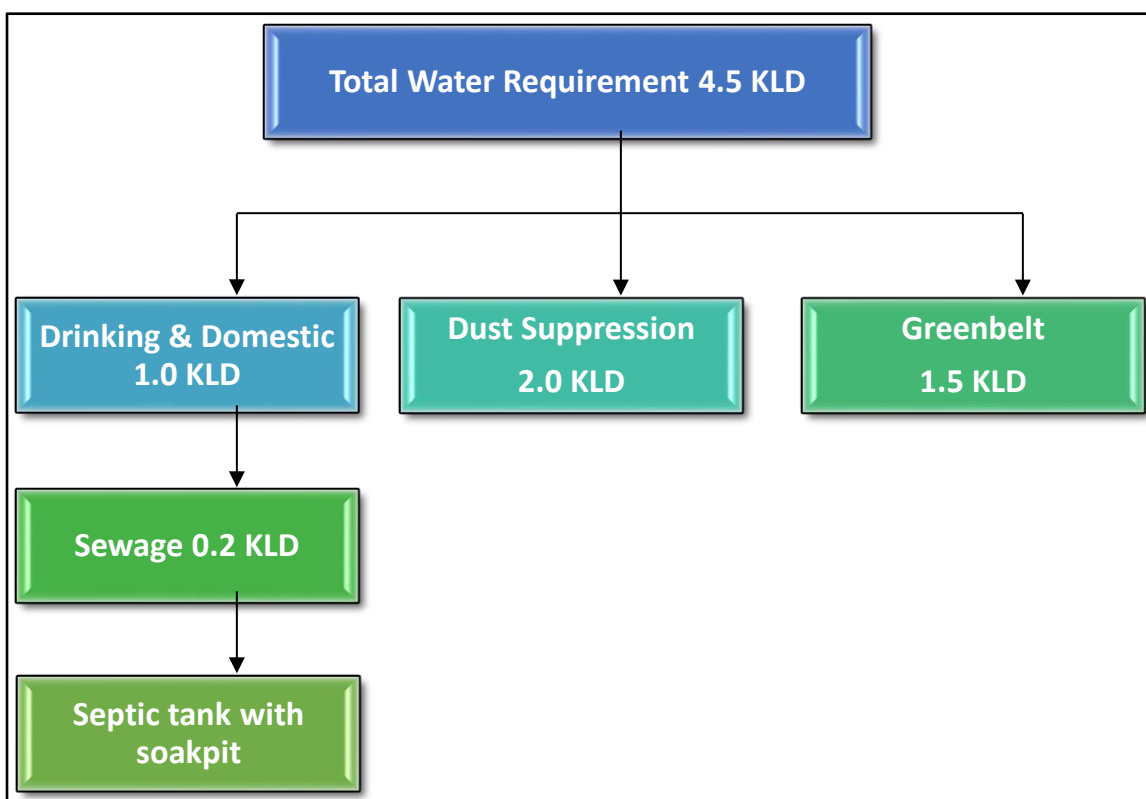
There is Palar River is located at a distance of 8.9km (NE) direction of lease area. Water table is found at a depth of 68m.

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 into these water bodies, there is no major impact. The project proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the mining lease.

Impact due to Water use in Mines

In the proposed mines water will be mainly used for domestic purpose, dust suppression & plantation. Total water requirement for the project is 4.5 KLD which will be sourced from outside agencies. Negligible sewage of 0.2 KLD will be generated, for which a septic tank with soak pit will be set up. The water balance diagram is given below.

FIG 4.1 WATER BALANCE DIAGRAM



Impact on Ground Water

The mining activity is not likely to intersect ground water as the ground water table occurs at a depth of 68m. The mining will go up to the maximum depth of 37m BGL. So, there will be no chance of intersecting the ground water table by the mining activity. So, the impact of mining on the ground water is not envisaged.

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 Tiruvannamalai Districts is given below.

TABLE 4.1 Ground Water Level Status in Tiruvannamalai District							
S. No.	Assessment Unit (Firka)	Net Annual Ground water availability	Existing gross ground water consumption for irrigation	Existing gross ground water consumption for domestic and industrial water supply	Existing gross ground water consumption for all uses	Stage of ground water development	Category
1	Tiruvannamalai	111,687.47	99,684.23	3,278.01	102,962.24	92	Over Exploited

Source: nwm.gov.in

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

4.2.3 VEGETATIONVEGETATION IN THE CORE ZONE

The mine lease area is devoid of major plantation. Shrubs and bushes are majorly found within the lease area. The proponent has planned to develop green belt in an area of 0.46.5 Ha. Trees like Neem/Pungan will be planted around the mine lease area. A total of 465 trees are planned to be planted. Spacing will be 3m x 3m.

FAUNA

There are no sanctuaries/national parks in the buffer zone of 10km study area. The commonly found fauna in the buffer zone are given in Chapter III. During mining activity the impacts and mitigation measures for Fauna are given in below table.

Table 4.2 Impacts and mitigation measures for Fauna		
S.No.	Impact	Mitigation measure
1	Fauna is affected due to noise and vibration.	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.
2	Dust generation due to mining activities	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.
3	Change in land use of the lease area	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.
4	Accidental falling of animals	To prevent entry of animals, the mine lease surrounding area will be properly fenced with barbed wire.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL COMPONENTS.

4.3.1 IMPACT DUE TO MINING OPERATION

Impact prediction is a very important phenomenon in evaluating the environmentally potential adverse impacts for any proposed mine project. The impact prediction is always carried out under worst possible conditions so as to mitigate or to eliminate the environmental hazards. These predictions thus calculated are superimposed over the baseline data to calculate the net impact on the environment after the proposed mine Project comes into production.

4.3.2 IMPACT ON AIR ENVIRONMENT

The impacts on air environment from a mining activity depend on various factors like production capacity, machinery involved, operations and maintenance of various equipments and vehicle. Apart from these, there will be other activities associated viz transportation of mineral and waste, stocking facilities and dump management within the mine lease area that may contribute to pollution.

4.3.3 Air Emissions

The impacts on air environment from a mining activity depend on various factors like production capacity, machinery involved, operations and maintenance of various equipments and vehicle. Apart from these, there will be other activities associated viz transportation of mineral and waste, stocking facilities and dump management within the mine lease area that may contribute to pollution.

4.3.4 Quantitative Estimation of Impacts on Air Environment

An attempt has been made to predict the incremental rise of various ground level concentrations above the baseline status in respect of air pollution due to proposed Rough Stone by the open cast mechanized mining method.

The pollutants released into the atmosphere will disperse in the down wind direction and finally reach the ground at farther distance from the source. The concentration of ground level concentrations mainly depends upon the strength of the emission source and micrometeorology of the study area.

In order to estimate the ground level concentrations due to the emission from the proposed project, EPA approved Industrial Source Complex ISC AERMOD View Model has been employed.

The mathematical model used for predictions on air quality impact in the present study is ISC-AERMOD View-6.8.6. It is the next generation air dispersion model, which incorporates planetary boundary layer concepts.

The AERMOD is actually a modeling system with three separate components:

AERMOD (AERMIC Dispersion Model), AERMAP (AERMOD Terrain Preprocessor) and AERMET (AERMOD Meteorological Preprocessor).

Special features of AERMOD include its ability to treat the vertical inhomogeneity of the planetary boundary layer special treatment of surface releases, irregularly shaped area sources, a plume model for the convective boundary layer, limitation of vertical mixing in the stable boundary layer, and fixing the reflecting surface at the stack base.

The AERMET is the meteorological preprocessor for the AERMOD. Input data can come from hourly cloud cover observations, surface meteorological observations and twice-a-day upper air soundings. Output includes surface meteorological observations and parameters and vertical profiles of several atmospheric parameters.

The AERMAP is a terrain preprocessor designed to simplify and standardize the input of terrain data for the AERMOD. Input data include receptor terrain elevation data. Output includes, for each receptor, location and height scale, which are elevations used for the computation of airflow around hills.

Salient features of the AERMOD model are given hereunder:

- ❖ Excavation operations are considered as area sources.
- ❖ Transportation of material on haulage roads has been considered as line source

The predicted ground level concentrations for study period computed using AERMOD model are plotted as isopleths.

4.3.5 Sources of Dust Emission

The proposed mining is carried out by opencast mechanized method. The air borne particulate matter generated by ore handling operations, transportation and screening of ore is the main air pollutant. The emissions of sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) contributed by diesel operated excavation/loading equipment and vehicles plying on haul roads are marginal. Prediction of impacts on

air environment has been carried out taking into consideration proposed production and net increase in emissions. Based on the various operations involved in the production of minerals, the various emission sources has been identified as given below.

- a. Area sources.
- b. Line sources.

Extraction of mineral from mine, are considered as area sources. Transportation of material from mining benches to various end points are considered as line sources. The impact of above sources on air environment is discussed below:

The other sources of air pollution are the dust generated during the movement of tippers on the haul road. Water tankers with spraying arrangement will be used for regular water sprinkling on the haul roads to ensure effective dust suppression. The tippers are well maintained so that exhaust smoke does not contribute abnormal values of noxious gases and un-burnt hydrocarbons.

4.3.6 Emission Details

All the emissions discussed above are quantified for proposed maximum production of 2,71,250m³ of Rough Stone and 31,476m³ of Gravel by the open cast mechanized mining method. The existing air quality levels are covered in the baseline scenario. Excavation, loading and transportation through tippers are the major sources, which are of significance. Therefore, the emissions considered for modeling are from drilling blasting, excavation & transportation rough stone.

The emissions are computed based on AP-42 emission factors. Operational hours, activity rate, wind speed and moisture content have been considered for estimation of emissions from point and area sources. For line source, apart from operational hours, activity rate, moisture, silt content and vehicle weight have been considered.

Predictions are carried out for the worst-case scenario of simultaneous operation of excavators (area sources) and tippers for transportation from mine pit to loading pit (line sources) over a distance of 500 m.

The number of working days has been taken at 300 days per year with 8 hours of operation/day, hence the concentrations predicted are considered to be the worst case. With control measures, the emissions have been taken at 30% of uncontrolled emissions for handling and 10% of uncontrolled emissions for transportation.

4.3.7 Meteorological Data

The meteorological data recorded continuously during the month of December 2024 – February 2025 on hourly basis on wind speed, wind direction and temperature has been processed to extract the 24- hourly mean meteorological data as per the guidelines of IMD and MoEF for application of AERMOD model. Stability classes computed for the mean hours is based on guidelines issued by CPCB on modeling. Mixing heights representative of the region have been taken from the available published literature.

4.3.8 Summary of Predicted Ground Level Concentrations

Ground level concentrations due to the mining activities have been estimated to know the incremental raise and extent of impact in the study area.

The maximum ground level concentration is estimated to be about 1.03 $\mu\text{g}/\text{m}^3$ of PM_{2.5} & 2.42 $\mu\text{g}/\text{m}^3$ of PM₁₀ within the mine area and surrounding cluster area 1.89 $\mu\text{g}/\text{m}^3$ of PM_{2.5} & 3.38 $\mu\text{g}/\text{m}^3$ of PM₁₀, where mining operations are being carried out. The impact of mining operations would be negligible beyond 0.5 km.

Figure – 4.1 represents the spatial distribution of the predicted ground level concentrations of PM₁₀ due to emissions from mine.

4.3.9 Emission sources & Quantification

Various point and non-point sources of emissions from Proposed Rough Quarry of Tvl. SSS Mines is quantified and presented below:

Area Emissions – Total Material handling (Proposed Rough Stone)

Quantity, TPA	Rough Stone: 54000 m ³ (One Year) Gravel: 23736 m ³ (One Year)
Operational Hours Per Year	2400
Activity Rate, t/hr.	310.231
Emission of dust, g/t.	0.13
Emission of dust, g /hr.	47.7689
Area of influence, m ²	623
Uncontrolled emission rate g/s/m ²	0.000056622
Controlled emission rate, PM10 g/s/m ²	0.0000566225
Controlled emission rate, PM2.5 g/s/m ²	0.000037748

Area Emissions – Total Material handling (Cluster Rough Stone)

Quantity, m ³	Existing Quarries: • Thiru.R.Kathirvelu (Extent – 4.42.0 Ha) - Rough Stone (203646 m³- One year) Gravel 14824.8 (One year). • Thiru.S.Vadivel (Extent – 4.18.0 Ha) - Rough Stone (58760 m³- One year) Gravel 9717.2 (One year). Proposed Quarries: • Tvl.SSS Mines (Extent – 2.06.5 Ha) - Rough Stone (54250 m³- One year) Gravel 6295.2 (One year). • Tvl.SSS Mines (Extent – 4.85.5 Ha) - Rough Stone (255117 m³- One year) Gravel 17240.8 (One year).
Operational Hours Per Year	2400
Activity Rate, t/hr.	422.23
Emission of dust, g/t.	0.23
Emission of dust, g /hr.	57.787
Area of influence, m ²	625
Uncontrolled emission rate g/s/m ²	0.00021740
Controlled emission rate, PM10 g/s/m ²	0.000217401
Controlled emission rate, PM2.5 g/s/m ²	0.000141160

Line Source – Transport of Proposed Rough Stone

Quantity, TPA	Rough Stone: 54000 m ³ (One Year) Gravel: 23736 m ³ (One Year)
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	13500
Lead length/trip, Km	0.9
Total VKT/Year	6742
Emission Kg/VKT	0.24
Total emission Kg/Year	15642
Uncontrolled emission rate g/s/m	3.39735
Controlled emission rate, PM10 g/s/m	0.339735
Controlled emission rate, PM2.5 g/s/m	0.094373

Line Source – Transport of Rough Stone (Cluster)

Quantity, m ³	Existing Quarries: - Thiru.R.Kathirvelu (Extent – 4.42.0 Ha) - Rough Stone (203646 m³- One year) Gravel 14824.8 (One year). - Thiru.S.Vadivel (Extent – 4.18.0 Ha) - Rough Stone (58760 m³- One year) Gravel 9717.2 (One year). Proposed Quarries: - Tvl.SSS Mines (Extent – 2.06.5 Ha) - Rough Stone (54250 m³- One year) Gravel 6295.2 (One year). - Tvl.SSS Mines (Extent – 4.85.5 Ha) - Rough Stone (255117 m³- One year) Gravel 17240.8 (One year).
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	164700
Lead length/trip, Km	0.8
Total VKT/Year	181732
Emission Kg/VKT	0.24
Total emission Kg/Year	23456
Uncontrolled emission rate g/s/m	7.04417
Controlled emission rate, PM10 g/s/m	0.70441
Controlled emission rate, PM2.5 g/s/m	0.352900

FIG 4.3 Isopleth of GLC Prediction for PM₁₀

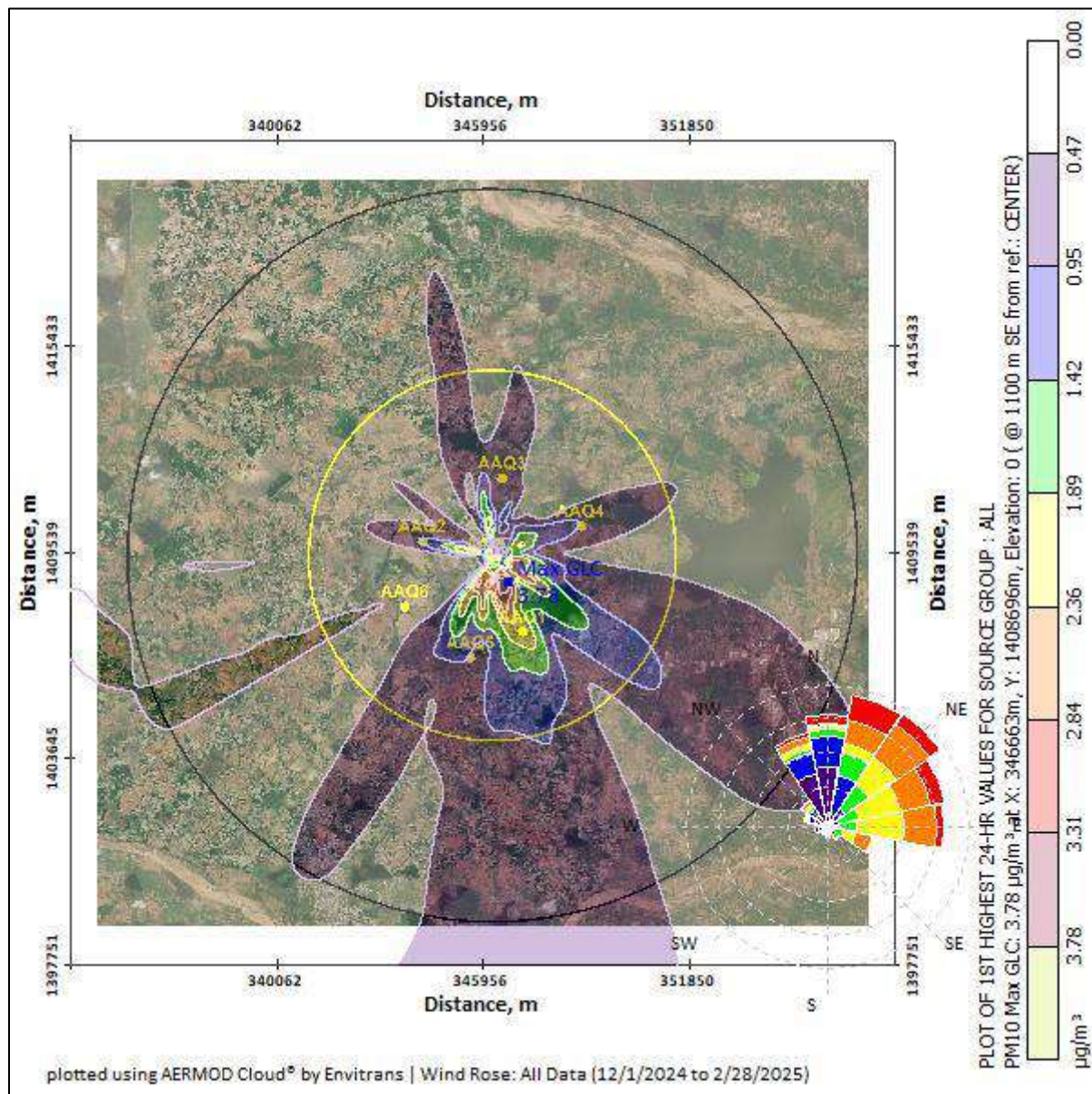
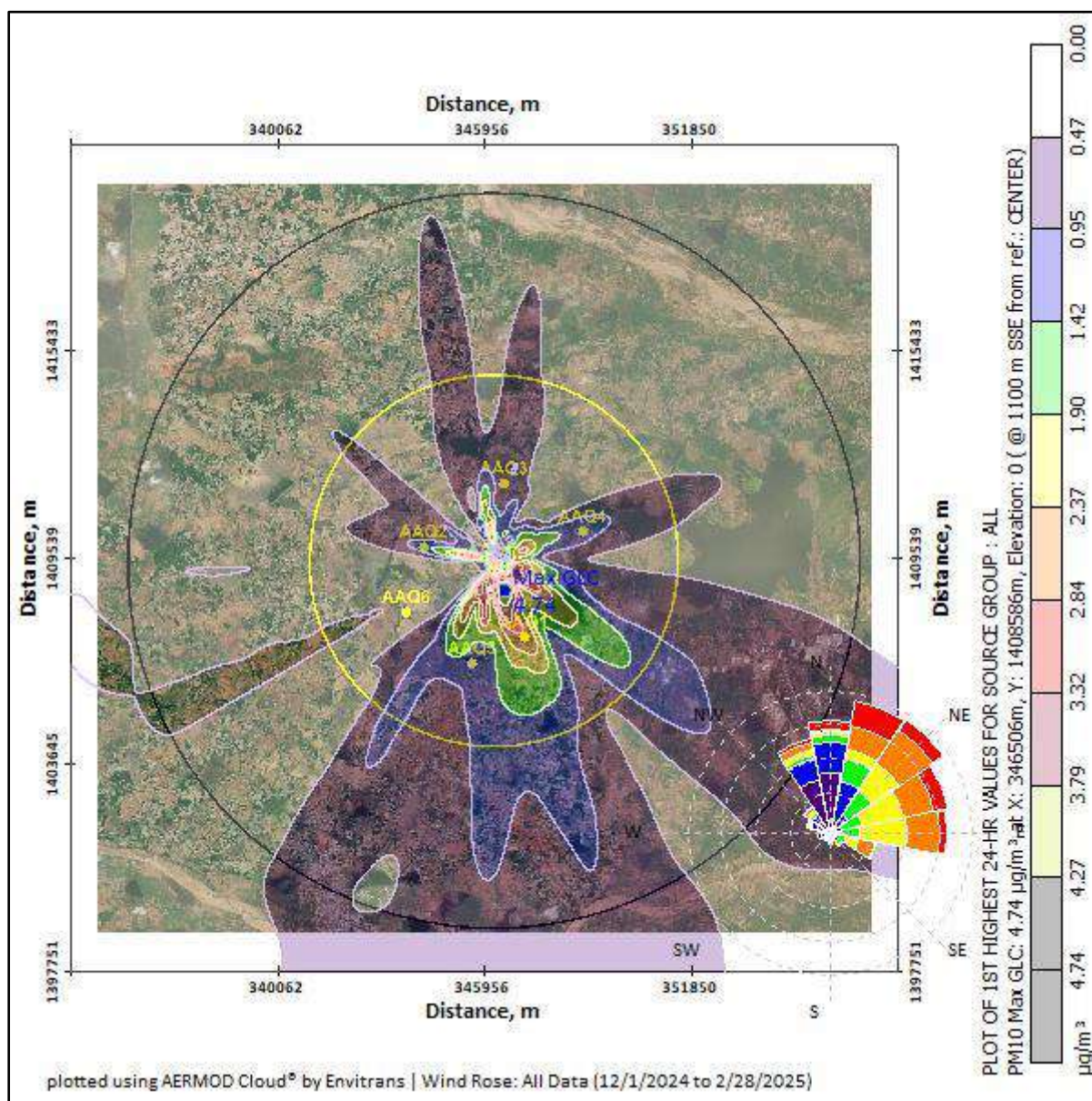


FIG 4.5 Isopleth of GLC Prediction – Cluster Cumulative for PM₁₀



PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.7 to 4.8.

Table 4.3 Concentrations of PM2.5 after Project Implementation					
SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Vadapoondipattu	26.4	1.51	27.91	60
2	Sumangali	27.1	1.32	28.42	
3	Karandai	25.02	1.14	26.16	
4	Kelneli	22.75	0.95	23.7	
5	Mariyanallur	21.7	0.76	22.46	
6	Perumpandi	22.75	0.57	23.32	
7	Proposed Mine Site	31.3	1.70	33.0	
Table 4.3a Cluster Concentrations of PM2.5 after Project Implementation					
SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Vadapoondipattu	26.3	2.66	28.96	60
2	Sumangali	27.1	2.37	29.47	
3	Karandai	25.02	2.07	27.09	
4	Kelneli	22.75	1.78	24.53	
5	Mariyanallur	21.7	1.48	23.18	
6	Perumpandi	22.75	1.18	23.93	
7	Proposed Mine Site	31.3	2.96	34.26	
Table 4.3b Concentrations of PM10 after Project Implementation					
SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Vadapoondipattu	57.9	3.31	61.21	100

2	Sumangali	58.85	2.84	61.69	
3	Karandai	53.5	2.36	55.86	
4	Kelneli	50.6	1.89	52.49	
5	Mariyanallur	47.8	1.42	49.22	
6	Perumpandi	47.5	0.95	48.45	
	Proposed Mine Site	66.55	3.78	70.33	

Table 4.3c Cluster Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Vadapoondipattu	56.7	4.27	60.97	100
2	Sumangali	58.85	3.79	62.64	
3	Karandai	53.5	3.32	56.82	
4	Kelneli	50.6	2.84	53.44	
5	Mariyanallur	47.8	2.37	50.17	
6	Perumpandi	47.5	1.9	49.4	
7	Proposed Mine Site	66.55	4.74	71.29	

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 $48.45 \mu\text{g}/\text{m}^3$ to $70.33 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $22.46 \mu\text{g}/\text{m}^3$ to $33.0 \mu\text{g}/\text{m}^3$ and PM_{10} are surrounding (cluster) area range of $49.4 \mu\text{g}/\text{m}^3$ to $71.29 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $23.18 \mu\text{g}/\text{m}^3$ to $34.26 \mu\text{g}/\text{m}^3$ 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.

4.4 ASSESSMENT OF SIGNIFICANCE OF IMPACTS (CRITERIA FOR DETERMINING SIGNIFICANCE, ASSIGNING SIGNIFICANCE).

4.4.1 NOISE ENVIRONMENT

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

4.4.2 Likely Noise Levels in Lease Area due to mining activity

S.No.	Source Name	Noise Level in dB (A)
1	Diesel generator	90
2	Excavator Operation	86
3	Trucks movement	82
4	Drilling	96
5	Blasting	102

It is expected that the generated noise will be limited within the mine lease area and there will be no profound effect of noise on the buffer zone. The noise level will be maintained below the threshold limit by vigorous maintenance of the machineries. Wet drilling with dust extractor is being used to reduce the noise level during the mining operation.

Noise levels were measured in the lease area and in the nearby villages Vadapoondipattu Village, Sumangali village, Karandai Village, Kelneli Village, Mariyanallur Village and Perumpandi Village. So villages, the values are given below.

TABLE 4.4 Noise Levels in Monitoring Locations

S. No.	Location	Day Equivalent (in dBA)	Night Equivalent (dBA)
1	Within mine lease area	45.1	37.8
2	Vadapoondipattu	47.4	38.2
3	Sumangali Village	46.3	39.1
4	Karandai Village	45.3	37.6
5	Kelneli Village	48.8	38.8
6	Mariyanallur Village	48.0	38.8
7	Perumpandi Village	45.7	38.5

The noise levels are within the MoEF & CC limits of 70 dB(A) in the working area and in the buffer areas, the values are below the limit of 75 dB(A). Since, the residential area norm has been considered for all five locations mentioned above, during mining operation mine lease area will be considered as industrial area/quarry area for which DGMS norms 85 dB(A)/CPCB guidelines 75 dB(A).

4.4.3 Impact of Noise due to mining

- ✚ 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) limits, the acceptable noise level is 85 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.

4.5 MITIGATION MEASURES

4.5.1 Noise level control.

- ✚ As the distance between the source and receptor increases, the noise level decreases. Hence, there will be a natural attenuation.
- ✚ The proponent has planned to develop green belt in the periphery of the lease area which diminishes sound volume by dampening them.
- ✚ All the equipment/machinery/tippers 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.
- ✚ Providing green walls/nets wherever possible.

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

4.5.2 IMPACTS DUE TO VIBRATION

There will be negligible vibration of ground due to the following activities.

- ✚ Due to Blasting
- ✚ Due to Drilling
- ✚ Due to movement of machinery

Impacts

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

Mitigation measures

- ✚ The DG set will be kept within the acoustic enclosure made by the stone blocks.
- ✚ Drills will be equipped with sharp bits and wet drilling will be adopted.
- ✚ A well-planned green belt is proposed for the mining to reduce noise level.
- ✚ Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.
- ✚ Regular maintenance of the machineries and vehicles to reduce the noise level.
- ✚ Use of ear muffs by the workers with occupational exposure to noise.
- ✚ Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- ✚ Control of fly rock and vibration by maintaining peak particle velocity within the standard as prescribed by the DGMS and MOEF & CC.
- ✚ Shallow depth jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive.
- ✚ Supervising blasting by competent and statutory Foreman/ Mines Manager.

4.5.3 SOCIO ECONOMIC IMPACT

The lease area is Patta land. The proponent has planned to spend INR 5,00,000 for CER activities.

4.5.4 OCCUPATIONAL HEALTH

Impacts on humans due to various mining activities

The occupational risk due to proposed mining may be due to drilling, blasting, excavation and transportation. A total of 27 workers will be engaged in the mining activity. Mining activity may cause various health problems to the mines workers as follows:

- Dust generated during excavation, drilling, stone cutting, sizing and transportation may cause health problems like Silicosis, Asthma, Tuberculosis and other respiratory lungs disorders.
- Heavy weight lifting by the workers may cause injuries to arms, legs and back.
- Noise generated during the mining activity may cause Noise Induced Hearing Loss (NIHL).

Table 4.5 Impacts on humans due to various mining activities

S.No.	Type of activity	Impact
1	Dust generation due to drilling and blasting	Continuous exposure to dust causes Pneumonia, Tuberculosis, Rheumatic arthritis and Segmental Vibration
2	Noise generation due to drilling and blasting	Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness
3	Unexpected accidents	Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- The mines worker will be provided with dust mask to minimize the inhalation of the dust.
- Water sprinkling twice in a day is in practice on the haul roads, near excavation and roads to reduce the fugitive dust emission.
- Wet drilling and drilling with dust extractor will be practiced.
- Ear muffs will be supplied to the workers working in the noise prone area
- The mining site will be supplied with first aid facilities and the entire mines worker will have access to that.
- The mines workers will be well trained about the safety practices in the mining activities.
- As per Mines Rules, 1955, medical examination of employees at the initial stage and periodically, shall be done by a team of qualified medical officers provided by the project proponent.
- Regular medical checkup camps shall also be arranged for detection of occupational diseases and minor disease in the nearby rural population.
- Free checkup and medicine for treatment for their acute and chronic illness shall be provided by the lessee. Conducting periodical Medical Examination as per DGMS.
- 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.

4.5.5 WASTE MANAGEMENT

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.

Liquid Waste

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 0.2 KLD will be discharged in soak pit via septic tank.

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 hoses. The said hazardous waste are very negligible quantity, it will be properly collected in the source level, stored in impervious storage yards and disposed of as per the Hazardous waste (Trans-boundary Movement) Management Rules, 2016.

Plastic Waste

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

CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 DESCRIPTION OF EACH ALTERNATIVE

Analysis of alternative site helps in selection of best possible site for the project. On one hand it helps to closeness to the existing infrastructure and on other hand it also helps to minimize the impact of project on environment.

5.2 SUMMARY OF ADVERSE IMPACTS OF EACH ALTERNATIVE

The project proponent has prepared mining plan under rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the assistant Director, Department of Geology & Mining, Tiruvannamalai vide Rc. No. 263/Kanimam/2024, dated 24.01.2025.

- There is no forest land or other Eco-sensitive places.
- Proposed mine site is selected on the basis of occurrence of mineral for suitable end use.

Hence seeking alternative site is not required.

5.3 MITIGATION MEASURES PROPOSED FOR EACH ALTERNATIVE

The mining technology is mechanized Opencast 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 II.

5.4 SELECTION OF ALTERNATIVE

In case of Mining projects alternate site selection is not necessary as the mining is site specific and the area in which mining will be carried out has been adequately proved for presence of mineral. The deposit is also having good infrastructural facilities for access and development.

The mining technology is mechanized Opencast 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 II.

CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 TECHNICAL ASPECTS OF THE MONITORING THE EFFECTIVENESS OF MITIGATION MEASURES (INCL MEASUREMENTS, METHODOLOGIES, FREQUENCY LOCATION DATA ANALYSIS, REPORTING SCHEDULES EMERGENCY PROCEDURES DETAILED BUDGET AND PROCUREMENT SCHEDULES)

6.1.1 ENVIRONMENTAL MONITORING

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. The schedule is framed based on MoEF & CC and Tamil Nadu State Pollution Control Board. In case the SEIAA/TNPCB/MoEF & CC or other statutory bodies demand monitoring of any additional parameter/factor, the same will also be done.

The proposed quarry is a small quarry. Hence the Mines-in-charge will be responsible for environmental related activities. After obtaining EC, the conditions mentioned in EC will be strictly followed. The Mines-in-charge will be responsible for implementing the conditions. EC compliance report will also be submitted periodically.

6.1.2 OBJECTIVES OF ENVIRONMENTAL MONITORING

The objectives of Environmental Monitoring are as follows.

-  Monitoring and analysis of air and water samples
-  Implementing the control and protective measures.

- ✚ Coordinating the environment related activities within the project as well as with outside agencies. Collecting statistics of health of workers and population of the surrounding villages. Green belt development etc.
- ✚ Monitoring the progress of implementation of Environmental Management Programme.
- ✚ Monitoring the noise generation in and around the project areas.
- ✚ Monitoring of wastewater treatment and disposal of solid waste.
- ✚ The laboratory will be suitably equipped for sampling/testing for various environmental pollutants.

6.1.3 ENVIRONMENTAL MONITORING SCHEDULE

To evaluate the effectiveness of Environmental Management Programme, regular monitoring of the important environmental parameters will be taken up. The frequency of monitoring different parameters is given in table 6.1.

Table 6.1 Environmental Monitoring Schedule			
Sl.No.	Description of Parameters	Parameters	Frequency
1	Air	Air Quality for SPM, PM-10, PM-2.5, SO ₂ and NO _x	24-hour average samples Once in a 3 month.
2	Water	General, Physical, and chemical parameters	Once per season
3	Noise	Leq, L _{max} , L _{min} , Leq Day & Leq Night dB(A)	8-hour average samples Once in a 3 month.
4	Soil	Physical and Chemical characteristics.	Once per season

6.1.4 LOCATION

Monitoring of the above-mentioned environmental parameters would be done at appropriate and sensitive areas. The exact location of monitoring is given as Figure – 3.4, 3.10, 3.12 & 3.14.

6.1.5 MEASUREMENT METHODOLOGY

(a) Ambient Air Quality

Ambient air quality will be monitored for SO₂, NO_x, PM₁₀ and PM_{2.5}. The instruments like high volume air samplers and Respirable dust samplers would be used for this purpose. These parameters will be monitored as mentioned in the monitoring schedule previously.

(b) Water Quality

Water quality analysis will be done quarterly and the monitored parameters include pH, Temperature, TDS, etc. as specified by SPCB from time to time.

(c) Noise Monitoring

Noise level will be monitored in working environment mainly noise producing sources over the boundary and around the mining area.

(d) Green Belt and Afforested Areas

Continuous vigilance and monitoring of green belt will be done for performance and survival rate of the saplings. Watch and ward personnel will properly guard the plantation. Provision will be made for fertilizers application and watering on schedule.

(e) Socio-Economics

Socio-economic of the core and buffer zone details elaborated in Chapter-3.

6.1.6 TECHNICAL ASPECTS OF MONITORING THE EFFECTIVENESS OF MITIGATION MEASURES

The above monitoring schedule will be followed periodically. After collection of the data, the mines-in-charge will analyze the data obtained. The data thus obtained will be incorporated in the EC Compliance report submitted to the regional office, MoEF & CC. The measurement methodologies will be as per CPCB/BIS/MoEF & CC/DGMS norms.

6.1.7 EMERGENCY PROCEDURES

In case of any emergency due to environmental conditions, the mines in-charge will immediately report to the top-level management and the emergency response protocol will be implemented as per MoEF & CC/ SPCB / DGMS norms.

6.1.8 REPORTS TO BE GENERATED

The Project Proponent will maintain records of each test and its interpretation so as to formulate an adequate Environmental Management Plan. The set of records planned to be maintained by Project Proponent are given in below table 6.2.

Table 6.2 Important Records to be maintained by PP	
S.No.	Particulars
1	Monitoring results for Air, Water & Soil.
2	Records of slope failure, land erosion & drainage.
3	Plantation Records
4	Environmental and related standards/ norms
5	Records pertaining to statutory consents, approvals.
6	Periodic Medical examination (PME) records.
7	Complain register (Environmental pollution)
8	Records on water and electricity consumption
9	Periodic progress records.
10	Environmental Expenses Records

6.1.9 DETAILED BUDGET AND PROCUREMENT SCHEDULES

The budget planned for environmental monitoring is given below.

Table 6.3 - Environmental Management Plan Budget

Sl. No	Budget planned for	Capital Cost Amount (INR)	Recurring Cost/Annum Amount (INR)
1	Air Environment	961000	168000
2	Noise Environment	50000	684000
3	Waste Management	30000	22000
4	Implementation of EC, Mining Plan & DGMS Condition	461000	1206000
5	Mine Closure	679000	46000
Total		2181000	2126000

CHAPTER 7

ADDITIONAL STUDIES

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

- Public consultation
- Risk Assessment
- Social Impact Assessment, R&R Action Plans
- Cumulative Environmental Impact Assessment Study
- A detailed Hydrogeological Study
- Slope Stability plan

7.1 PUBLIC CONSULTATION

After the preparation of the draft EIA/EMP report, it must be submitted to the State Pollution Control Board. A public consultation will be conducted on behalf of the Pollution Control Board through the District Collector and the officials from the PCB. A prior notice must be issued about the event, along with the time and date, in two leading newspapers. The opinions, suggestions, demands, and objections of people, NGO environmentalists, etc. are sought, and the proceedings are recorded. The replies of the proponent and corresponding officials will be recorded in the final EIA/EMP report.

7.2 RISK ASSESSMENT & MANAGEMENT

(a) Objectives

Risk assessment is a method in which possible threats/hazards which may arise during mining operations are identified so that adequate machinery/equipment are made available in precaution. The objectives of environmental risk assessment are governed by the following, which excludes natural calamities:

- ✚ To identify the potentially hazardous areas so that necessary design safety measures can be adopted to minimize the probability of accidental events.
- ✚ To identify the potential areas of environmental disaster which can be prevented by proper design of the installations and its controlled operation.
- ✚ To manage the emergency situation or a disastrous event, if any, from the mining operation.

The major hazards related to the mining activities are as follows

- ✚ Open cast bench slope failure
- ✚ Accident due to fall of quarry sides
- ✚ Accident due to machineries
- ✚ Accident due to explosives
- ✚ Accident due to large block cutting, separation and loading

Some of the common hazards are identified and the corresponding precautionary measures are drafted.

Table 7.1 Hazards and Precautionary measures		
S.No.	Hazard	Precautionary measures
1	Fire	Fire suppressants will be made available at mines office and explosive storage room.
2	Explosion	Controlled blasting will be done. DGMS norms will be strictly followed during blasting. Blasting will be done only by trained professionals.
3	Combustion of chemicals or hazardous substances	Combustible Substances are stored with all precautionary measures. Fire suppressant is made available at storage site
4	Landslide	Width, height and slope will be maintained as suggested by DGMS
5	Accidents during handlings	All vehicles will be properly maintained. Overloading will not be done. Only trained/certified people will be employed.
6	Accidental fall of people or animals	The lease area will be fenced properly. Only people working in the mines will be permitted to enter.

7.3 REHABILITATION AND RESETTLEMENT (R & R) PLAN

No land is acquired from people dwelling in the area. The lease area is an uninhabited land. No R & R plan is proposed.

7.3.1 CUMULATIVE ENVIRONMENTAL IMPACT ASSESSMENT STUDY

The details of other quarries located within the 500m radius of this project are provided below:

S.No	Name of the Quarry Owner	S.F. Nos & Village	Lease Period	Area
a. Abandoned Quarry				
1.	Thiru.S.Sridhar, S/o. T.Sivaprakasam, Managing Director, SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram 635 501.	S. F.Nos.44/11,58/ 7,5A.60/2,58/58,5 9/1A,1B,2B,60/3,5, 6 & 7 Kaganam Village	(17-09-2018 to 16-09-2023)	3.96.5 Ha
b. Existing Quarry				
1.	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram	S.F.Nos.58/1A,1B,2 A, 2B, 3,6 , 7 , 8A. , 8B, 59/2A, 61/1B, 2A, 2B, 3, 4A, 5A & 6 Kaganam Village	(10-06-2024 to 09-06-2029)	4.42.0 Ha
2.	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	U. F.Nos.38/1, 2, 39/5, 6, 7, 48/17,18, 19, 20, 426/2 & 426/3 Kaganam Village	(20-09-2021 to 19-09-2031)	4.18.0 Ha
c. Proposed Quarry				

1.	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.	S.F.Nos.39/4 Kaganam Village	Proposed for five years from the execution of the lease deed	2.06.5 Ha
2.	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	S.F.Nos.44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/481, 61/482, 61/58, 61/7, 62, 63/1 & 63/2 Kaganam Village	-	4.85.5 Ha
Total Area of Cluster		15.52.0 Ha		

A cumulative impact of these two proposed quarries has been studied and the details are given in Chapter IV.

7.3.2 AIR QUALITY IMPACT PREDICTION FOR THE CLUSTER

The AERMOD atmospheric dispersion modeling (AERMOD Cloud remote version) is used for assessment of incremental Ground level concentration (GLC) for the cluster area. Area source model taken into consideration taking into consideration of wet drilling and loading of the cluster mines. Further line source model was taken into consideration for transportation through haul road. Baseline meteorological studies were conducted for the period of December 2024 – February 2025. The following sources are considered.

Emission sources & Quantification of the cluster area.

Various point and non-point sources of emissions from Proposed Rough stone and gravel Quarry of Tvl. SSS Mines is quantified and presented below:

Area Emissions – Total Material handling (Proposed Rough Stone)

Quantity, TPA	Rough Stone: 54000 m ³ (One Year) Gravel: 23736 m ³ (One Year)

Operational Hours Per Year	2400
Activity Rate, t/hr.	310.231
Emission of dust, g/t.	0.13
Emission of dust, g /hr.	47.7689
Area of influence, m ²	623
Uncontrolled emission rate g/s/m ²	0.000056622
Controlled emission rate, PM10 g/s/m ²	0.0000566225
Controlled emission rate, PM2.5 g/s/m ²	0.000037748

Area Emissions – Total Material handling (Cluster Rough Stone)

Quantity, m ³	Existing Quarries: • Thiru.R.Kathirvelu (Extent – 4.42.0 Ha) - Rough Stone (203646 m³- One year) Gravel 14824.8 (One year). • Thiru.S.Vadivel (Extent – 4.18.0 Ha) - Rough Stone (58760 m³- One year) Gravel 9717.2 (One year). Proposed Quarries: • Tvl.SSS Mines (Extent – 2.06.5 Ha) - Rough Stone (54250 m³- One year) Gravel 6295.2 (One year). • Tvl.SSS Mines (Extent – 4.85.5 Ha) - Rough Stone (255117 m³- One year) Gravel 17240.8 (One year).
Operational Hours Per Year	2400
Activity Rate, t/hr.	422.23
Emission of dust, g/t.	0.23
Emission of dust, g /hr.	57.787
Area of influence, m ²	625
Uncontrolled emission rate g/s/m ²	0.00021740
Controlled emission rate, PM10 g/s/m ²	0.000217401
Controlled emission rate, PM2.5 g/s/m ²	0.000141160

Line Source – Transport of Proposed Rough Stone

Quantity, TPA	Rough Stone: 54000 m ³ (One Year) Gravel: 23736 m ³ (One Year)
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	13500

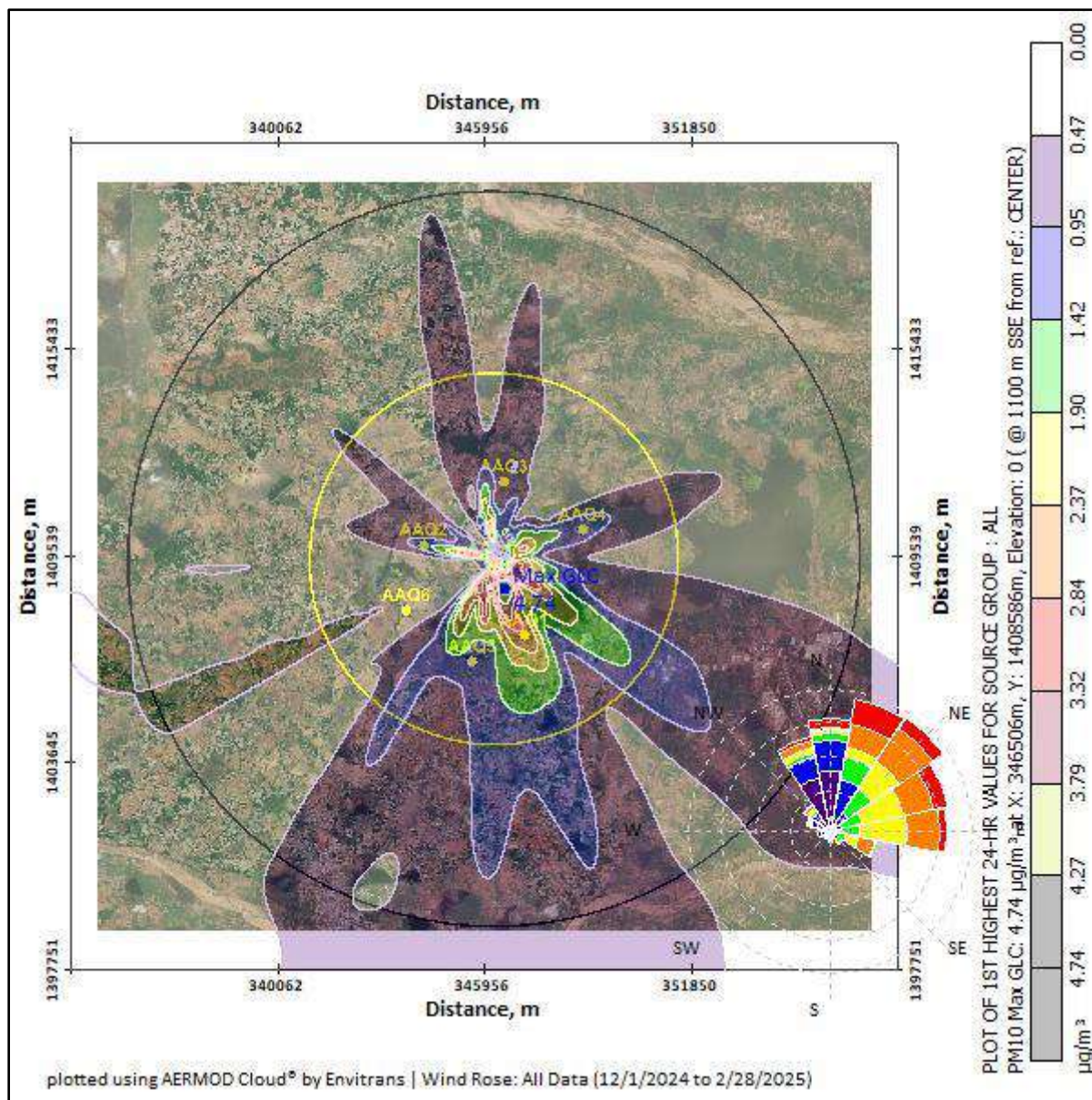
Lead length/trip, Km	0.9
Total VKT/Year	6742
Emission Kg/VKT	0.24
Total emission Kg/Year	15642
Uncontrolled emission rate g/s/m	3.39735
Controlled emission rate, PM10 g/s/m	0.339735
Controlled emission rate, PM2.5 g/s/m	0.094373

Line Source – Transport of Rough Stone (Cluster)

Quantity, m ³	Existing Quarries: - Thiru.R.Kathirvelu (Extent – 4.42.0 Ha) - Rough Stone (203646 m³- One year) Gravel 14824.8 (One year). - Thiru.S.Vadivel (Extent – 4.18.0 Ha) - Rough Stone (58760 m³- One year) Gravel 9717.2 (One year). Proposed Quarries: - Tvl.SSS Mines (Extent – 2.06.5 Ha) - Rough Stone (54250 m³- One year) Gravel 6295.2 (One year). - Tvl.SSS Mines (Extent – 4.85.5 Ha) - Rough Stone (255117 m³- One year) Gravel 17240.8 (One year).
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	164700
Lead length/trip, Km	0.8
Total VKT/Year	181732
Emission Kg/VKT	0.24
Total emission Kg/Year	23456
Uncontrolled emission rate g/s/m	7.04417
Controlled emission rate, PM10 g/s/m	0.70441
Controlled emission rate, PM2.5 g/s/m	0.352900

Note: *Emission factor computed based on wind speed of 2 m/s, and moisture content of 10 %. + Emission factor computed based on silt content of 10 % and moisture content of 10 %

FIG 7.4 Isopleth of GLC Prediction – Cluster Cumulative for PM₁₀



PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.7 to 4.8.

Table 7.3 Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Vadapoondipattu	26.4	1.51	27.91	60
2	Sumangali	27.1	1.32	28.42	
3	Karandai	25.02	1.14	26.16	
4	Kelneli	22.75	0.95	23.7	
5	Mariyanallur	21.7	0.76	22.46	
6	Perumpandi	22.75	0.57	23.32	
7	Proposed Mine Site	31.3	1.70	33.0	

Table 7.3a Cluster Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Vadapoondipattu	26.3	2.66	28.96	60
2	Sumangali	27.1	2.37	29.47	
3	Karandai	25.02	2.07	27.09	
4	Kelneli	22.75	1.78	24.53	
5	Mariyanallur	21.7	1.48	23.18	
6	Perumpandi	22.75	1.18	23.93	
7	Proposed Mine Site	31.3	2.96	34.26	

Table 7.3b Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Vadapoondipattu	57.9	3.31	61.21	100
2	Sumangali	58.85	2.84	61.69	
3	Karandai	53.5	2.36	55.86	

4	Kelneli	50.6	1.89	52.49	
5	Mariyanallur	47.8	1.42	49.22	
6	Perumpandi	47.5	0.95	48.45	
	Proposed Mine Site	66.55	3.78	70.33	

Table 7.3c Cluster Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Vadapoondipattu	56.7	4.27	60.97	100
2	Sumangali	58.85	3.79	62.64	
3	Karandai	53.5	3.32	56.82	
4	Kelneli	50.6	2.84	53.44	
5	Mariyanallur	47.8	2.37	50.17	
6	Perumpandi	47.5	1.9	49.4	
7	Proposed Mine Site	66.55	4.74	71.29	

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 $48.45 \mu\text{g}/\text{m}^3$ to $70.33 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $22.46 \mu\text{g}/\text{m}^3$ to $33.0 \mu\text{g}/\text{m}^3$ and PM_{10} are surrounding (cluster) area range of $49.4 \mu\text{g}/\text{m}^3$ to $71.29 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $23.18 \mu\text{g}/\text{m}^3$ to $34.26 \mu\text{g}/\text{m}^3$ 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.

Cumulative Impact on Traffic

The mined-out minerals will be transported by means of trucks to the consumers like crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The cumulative impact on traffic due to transportation of minerals from these four leases are provided below:

Table 7. 4 – Impact on Traffic

Description	Rough Stone Production Per day in tons	No. of Lorry Load per day
P1 (Proposed quarry)	455	46
P2 (Cluster quarry)	4140	414
Total		460

The proposed projects will bring 460 trips per day including cluster quarries. 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.

7.3.3 HYDROGEOLOGICAL STUDY

There is Palar River is located at a distance of 8.9 km (SW) direction of lease area. Due to the presence of these water bodies nearby, a detailed hydrogeological study is under process, however it will be incorporated in the final EIA Report As suggested in the Precise Area Communication letter, safety distances of 7.5m, to adjacent Patta land.

7.3.4 SLOPE STABILITY STUDY

The proposed quarry is a very small quarry and the production is also less. Opencast mechanized mining with a bench height of 5m and bench width of 5m and 60° Slope is proposed. The depth of mining is proposed as 37m BGL which is the ultimate pit limit. Also, there is no overburden since the entire mined out material will be utilized.

As far as technical factors are concerned, the following precautionary measures will be adopted:

- Strict adherence to DGMS norms
- Frequent inspection by Mines-in-charge/Mines Manager
- Bench height, width, slope will be as per DGMS norms

7.3.5 DISASTER MANAGEMENT PLAN

Proper preventive mechanism exists already in the mines.

- Precautionary measures are well explained to all staff by the mines in-charge.
- PPE necessary for all staff are available in the quarry. No person is allowed to enter inside without PPE. Avoiding quarrying during unfavorable environmental conditions.
- Carrying out safe blasting by following DGMS norms
- Safety equipment like fire extinguisher, first aid kit, etc are present in the mine.
- Proper maintenance of machinery used for mining
- In case of any emergency, the contact numbers of mines in-charge, mines manager, Management contact are available in the mine's office.

7.3.6 MINE CLOSURE PLAN

The quarrying operation is proposed up to a depth of 37m BGL, which will be achieved in 5 years. The ultimate pit dimension will be length 183 m x Width 86m x Depth 37m BGL. After completion of quarrying operation, the mined-out pit will be left as rain water harvesting pond. The quarry will be properly fenced with barbed wire.

CHAPTER 8

PROJECT BENEFITS

INTRODUCTION

Tvl. SSS Mines has proposed Rough stone and Gravel quarry over an extent of 2.06.5 Ha located at S. F. Nos. 39/4, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

PROJECT BENEFITS

Project benefits are attributed in various ways as under:

- Environment Benefits
- Employment Potential: Skilled, Semi-skilled & Un-skilled
- Economic Benefits
- Social Benefits

8.1 IMPROVEMENTS IN THE PHYSICAL INFRASTRUCTURE

The project area is located on Patta 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.

8.2 IMPROVEMENTS IN THE SOCIAL INFRASTRUCTURE

The proposed project will help in improving the socio-economic status of the near-by villages by generating direct or indirect employment opportunities. Substantial amount of indirect revenue will be generated by transportation activities along with employment e.g. labour, helper etc.

ECONOMIC BENEFITS:

The execution of proposed mine will boost the economy of the area by creating direct & indirect jobs for locals. There will be a positive cumulative impact of the project on the economy.

8.3 EMPLOYMENT POTENTIAL: SKILLED, SEMI-SKILLED & UN-SKILLED

The mining will create direct employment opportunity for 27 local people. As per MOEF & CC Notification CER cost is arrived for an amount of Rs. 5,00,000, it will be utilized as per the CER letter received from the competent authority.

8.4 OTHER TANGIBLE BENIFITS

The mine management will recruit semi-skilled & unskilled eligible workers from the nearby villages depending upon requirement in the mines and the eligibility, qualification and experience of local persons.

The overall effect will result in higher standard of living viz. better education, improved health and sanitation facilities, housing and acquisition of consumer durables. Housing, transport, medical, educational and other civic amenities will get improved in the future. This is envisaged as a major positive benefit.

CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification dated 14th Sept., 2006, as amended from time to time, 'Environmental Cost Benefit Analysis' is applicable only if the same is recommended at the Scoping stage.

As per the ToR points issued by SEIAA-TN vide ToR Identification No. T025B0108TN5967367N, Dated: 13.05.2025 for the proposed project, the 'Environmental Cost Benefit Analysis' is not prescribed.

CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 DESCRIPTION OF THE ADMINISTRATIVE ASPECTS OF ENSURING OF ENSURING THAT MITIGATIVE MEASURES ARE IMPLEMENTED AND THEIR EFFECTIVENESS MONITORED AFTER APPROVAL OF THE EIA.

10.1.1 OBJECTIVES

The Environmental Management Plan is developed to ensure that a project is implemented in an environmentally sustainable manner, where all contractors and subcontractors, including consultants, 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 the project's life cycle. The impacts due to this mining project are detailed in Chapter 4 and Mitigation measures at the source level and an overall Management Plan at the site level are elaborated on in this chapter.

10.1.2 BASIC OF EMP

The Environmental Management Plan for the proposed project activities is formulated taking into considerations the following key environmental issues.

-  Project activities
-  Studies on Environmental Impact Assessment
-  Air & water pollution control
-  Working zone environment improvement
-  Occupational hazards & safety
-  Environmental monitoring facilities
-  Environmental management costs

EMP covers all phases of the project considering the impacts with mitigation measures and monitoring programme. The plan outlines the measures that will be undertaken to ensure compliance with environmental legislations and to minimize adverse impact. Details of EMP measures for implementation in the mine are given below.

Table 10.1 Environmental Management Plan	
Environmental Parameter	Mitigation Measures
Air	Wet drilling to suppress the dust emission from drill machine
	Regular water sprinkling on haulage road through fixed water sprinkler.
	2 KLD 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.
Surface water	There is Palar River is located at a distance of 8.9 km (NE) direction of lease area. Adequate safety distance is left. No dumping of material or discharge will be done in or near the river or water body.
	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 will do to ensure 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 37m BGL. Water table is found at a depth of 68 m, hence the project will not intersect the Ground water table during entire quarry period.
Water Consumption and Wastewater generation	Water required for this project will be sourced from vendors.
	Domestic wastewater generation of 0.2 KLD will be treated in septic tank with soak pit.
	Conduct ground water and surface water monitoring for parameters specified by CPCB
Noise	The workers employed are provided with protection equipment, 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 safety Zone (7.5 m and 10m) 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.
	Annual ambient noise level monitoring is carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring.
Ground Vibration and Fly Rock Control	Controlled blasting using delay detonators will be carried out to maintain the PPV value well within the prescribed standards of DGMS.
	Drilling and blasting will be carried under the supervision of qualified persons.
	Will be Ensured that blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material.
	To be Undertake noise or vibration monitoring.
Land Environment	At conceptual stage, the mining pits will be converted into Rain Water Harvesting pit. Remaining area will be converted into greenbelt area.
	No external dumping i.e., outside the project area. The entire material will be sold.

	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 / Overburden	There is no overburden anticipated during the quarrying operation.
Biological Environment	During mining, thick plantation will be carried out on the mentioned safety zone areas.
	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 III will be monitored.

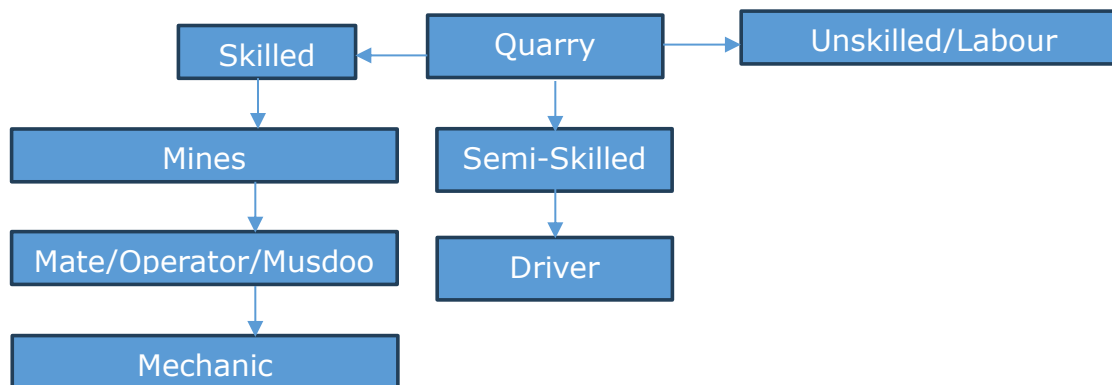
10.1.3 ADMINISTRATION AND TECHNICAL SETUP

Since this is a very small quarry, the mines in-charge will take care of all environment related aspects. He will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level. 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.

- ✚ Collection of health statistics of the workers and population of the surrounding villages.
- ✚ Green belt development.
- ✚ Monitoring the progress of implementation of the environmental monitoring programme.
- ✚ Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

Fig. 10.1 Organization Chart



S.No	Description	Employment potential
1	Mines Manager/ Foreman / Mate	3 Nos.
2	Operator	8 Nos.
3	Mechanic	1 No.
4	Driver	3 Nos.
5	Labours	12 Nos
Total		27 Nos

10.1.4 ENVIRONMENTAL POLICY

- The Project Proponent has stipulated a well-defined Environmental policy by which the lessee is committed to conducting business with a strong environmental conscience towards the community, customers, and employees. The Environment policy is given as below.
- The Environment policy of "Rough Stone and Gravel Quarry of Tvl. SSS Mines" is that the rules and commitment are driven towards conservation of the environment.
- The lessee is committed to efficient use of natural resources based on the reduce, recycle and reuse method.
- The project is committed to the identification of possible impacts and will take the necessary management steps to mitigate the impacts.
- Environment performance will be regularly monitored and reported for continual improvement of our environment and health performance.

10.1.5 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and a good employer-employee relationship. The main factors affecting occupational health in quarries are fugitive dust and noise. Safety of employees during quarrying operations and maintenance of mining equipment will be taken care of as per the Mines Act 1952 and Rule 29 of the 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 will be regularly monitored under an occupational surveillance programme. Under this programme, all employees are subjected to a detailed medical examination at the time of employment. Before the induction of employees, a pre-medical checkup is done. In addition, a periodical medical checkup will be done annually for all employees.

10.1.6 COST OF ENVIRONMENTAL CONTROL MEASURES

The effective implementation of EMP is not only reduce pollution load and comply the regulatory requirement but also increase productivity and improve marketability of product. The capital and recurring cost of EMP for the cluster of mines has been given in below table.

Table 10.2 - Environmental Management Plan Budget

Sl. No	Budget planned for	Capital Cost Amount (INR)	Recurring Cost/Annum Amount (INR)
1	Air Environment	961000	168000
2	Noise Environment	50000	684000
3	Waste Management	30000	22000
4	Implementation of EC, Mining Plan & DGMS Condition	461000	1206000
5	Mine Closure	679000	46000
Total		2181000	2126000

10.1.7 CONCLUSION

Various aspects of mining activities were considered, and related impacts were evaluated. Considering all the possible ways to mitigate the Environmental concerns, an Environmental Management Plan was prepared, and INR 139.28 lakhs has been allocated for the same. The EMP is dynamic, flexible, and subjected to periodic review. For projects where major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP, and the project will have a positive impact on the study area.

CHAPTER 11

SUMMARY& CONCLUSION

11.1 OVER ALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

INTRODUCTION

Tvl. SSS Mines has obtained Precise Area communication letter from the assistant Director, Geology and Mining, Tiruvannamalai letter vide Rc. No. 263/Kanimam/2024, dated 08.01.2025 to quarry out 2,71,250m³ of Rough Stone and 31,476m³ of Gravel over an extent of 2.06.5 ha., S.F.No.39/4, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone and Gravel Quarry of Tvl. SSS Mines cluster falls under Schedule 1(a) of EIA Notification and its subsequent amendments the project comes under Category B1. The ToR for preparation of EIA/EMP report of the project was approved vide ToR Identification No: T025B0108TN5967367N, Dated: 13.05.2025. This report has been prepared in line with the approved TOR for production of maximum excavation of 2,71,250m³ of Rough Stone and 31,476m³ of Gravel

Sl. No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone and Gravel
4.	Type of Lease	New quarry
5.	Extent of the lease	2.06.5 Ha
6.	Proposed depth of mining	37m BGL
7.	Method of mining	Opencast method of mechanized.
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	2,71,250m ³ of Rough Stone 31,476m ³ of Gravel

The proposed lessee Tvl. SSS Mines is with sound experience in the identification of quarry, operation and marketing in the field of Rough Stone and Gravel quarry. The proposed land is Patta land, please refer **Annexure no -6**.

1.1.1 LOCATION

Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State and its Latitude: 12°44'44.41"N to 12°44'51.65"N and Longitude: 79°34'59.03"E to 79°35'03.47"E with Survey of India Topo Sheet No. 57- P/10. To conduct the study, the proposed mine lease area (core zone) and an impact zone of 10 km radius (called buffer zone) around the proposed mine site were considered. The EIA report is based on three months baseline data (i.e. December 2024 to February 2025)

11.1.2 GEOLOGY

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.

11.1.3 PROJECT DESCRIPTION

This is a proposed Rough Stone and Quarry quarry by opencast Mechanized mining method. The quarrying is restricted up to a depth 37m BGL for the period of first five year. The geological reserves are estimated to be 7,21,000 m³ of Rough Stone & 41,200 m³ of Gravel. The mineable reserve calculated by deducting 10m safety distance and bench loss. The mineable reserves are 2,71,250 m³ of Rough Stone & 31,476 m³ of Gravel and the proposed production for the first five is 2,71,250 m³ of Rough Stone & 31,476 m³ of Gravel, which will be recovered at the rate of 100% recovery upto a depth of 30m above ground level for the period of five years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 60° slope using conventional Open cast Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.
- There is no overburden anticipated during entire rough stone quarrying operation.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	New quarry
3	Category	B1
4	Nature of mineral	Minor mineral
5	Life of the mine	05 years
6	Production Quantity for five years	2,71,250 m ³ of Rough Stone & 31,476 m ³ of Gravel
7	Waste generation and management	Nil
8	Bench height and width	Proposed bench height & width is 5.0m respectively and number of proposed benches is 6 Nos.
9	Ultimate pit depth	37m BGL
10	End use	The excavated Rough Stone is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

11.1.4 PROJECT REQUIREMENTS

The requirements of the project is given below.7

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 4.5 KLD which will be procured from the outside agencies. Out of 1.0 KLD drinking water requirement, Green belt development 1.5 KLD and dust suppression is 2.0 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid. Total Fuel requirement is 2,22,246 litres for entire life of the project.
3	Manpower requirement	Permanent employees – 15, temporary employees – 12.

4	Financial requirement	The total project cost as per PFR will be INR 249.30 Lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 5,00,000 is allocated. In addition, any demand raised by people during public hearing will also be met.

11.1.5 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

Table 3.1 Description of the lease area		
S.No.	Areas	Distance from project site
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius
2	Areas which are important or sensitive for ecological reasons	
A	Wetlands, water courses or other water bodies,	Tank 180m (SE) Tank 1.1 km (NE) Tank 2.5km (NE) Tank 2.7km (W) Mamandur Tank 4.9km (E) Permanthangal Tank 6.1km (NW) Palar River 8.9km (NE)
B	Coastal zone, biospheres,	Nil within 10km radius
C	Mountains, forests	Tandappantangal R.F. 6.6km (NW) Pullavakkam Block R.F. 9.7km (W)
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 10km radius
4	Inland, coastal, marine or underground waters	Nil within 10km radius

5	State, National boundaries	Nil within 10km radius
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 10km radius
7	Defense installations	Nil within 10km radius
8	Densely populated or built-up area	Tiruvannamalai – 9.86 Km - W
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Tiruvannamalai – 9.86 Km - W
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

The baseline data collection for meteorology, air, water, noise and soil environments have been carried out during December 2024 – February 2025.

Air, water, noise and soil samples are collected and analyzed through NABL accredited lab.

11.2 EXPLANATION OF HOW ADVERSE EFFECTS HAVE BEEN MITIGATED

11.2.1 AIR ENVIRONMENT

The air monitoring have been carried out in 7 locations and the results are given below.

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Near by the Proposed Mine Site	Core Zone	12°15'42.59"N 79°09'51.24"E
2	AAQ 2	Vadapoondipattu	2.34 km	12°43'31.85"N, 79°35'26.22"E
3	AAQ 3	Sumangali	1.95 km	12°45'6.57"N, 79°33'56.45"E
4	AAQ 4	Karandai	1.64 km	12°45'43.44"N, 79°35'14.11"E
5	AAQ 5	kelneli	2.55 km	12°45'13.45"N, 79°36'22.38"E
6	AAQ6	Mariyanallur	2.47 km	12°43'24.72"N, 79°34'46.57"E
7	AAQ7	Perumpandi	2.78km	12°44'0.36"N, 79°33'39.97"E

All the values of pollutant concentrations were found to be within the NAAQs Standards.

Station ID	Min	Max	Avg.
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	63.6	51.5	58.8
AAQ-2	55.1	44.9	45.2
AAQ-3	51.4	40.1	50.2
AAQ-4	58.1	43.5	50.2
AAQ-5	58.2	44.1	48.9
AAQ-6	54.5	43.3	49.7
AAQ-7	55.1	44.9	49.1
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Particulate matter PM_{2.5} (µg/m³)			
AAQ-1	30	23.6	23.5
AAQ-2	26.6	20.4	23.3
AAQ-3	27.6	18.2	24.1
AAQ-4	29.2	20.6	24.1
AAQ-5	26.6	20.3	22.5
AAQ-6	24.3	19.7	22.3
AAQ-7	26.6	20.4	23.55
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	6.7	4.4	5.1
AAQ-2	7.1	4.4	5.3
AAQ-3	6.7	4.3	5.1
AAQ-4	9.1	4.5	6.4
AAQ-5	8.1	4.7	5.9
AAQ-6	6.8	4.4	5.0
AAQ-7	9.1	4.5	6.5
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	11.8	9.3	10.2
AAQ-2	9.7	7.9	8.8
AAQ-3	9.1	6.8	8.0
AAQ-4	13.1	8.8	10.5
AAQ-5	10.8	8.3	9.5
AAQ-6	10.1	7	7.9

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

Station ID	Min	Max	Avg.
AAQ-7	13.1	8.8	10.5
CPCB NAAQS 2009 for NO ₂ – 80 µg/m ³			

11.2.2 WATER ENVIRONMENT

Results of Ground Water sampling Analysis in 7 locations								Specification/ Limit As per IS:10500: 2012	
Parameters	W1	W2	W3	W4	W5	W6	W7	Desirable	Permissible
PH	7.59	7.32	7.42	7.22	7.66	7.54	7.27	Agreeable	Agreeable
EC	783.2	1208	2106	1248	922.6	2006	1123	Agreeable	Agreeable
TURBIDITY	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.5 - 8.5	No Relaxation
ODOUR	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	1	5
T.HARDNESS	293	426	315	498	319	231	402	500	2000
C.HARDNESS	155	275	180	323	199	76.0	143	1	15
M.HARDNESS	137	151	135	175	120	155	259	200	600
CALCIUM	62.0	110	72.0	129	79.6	30.4	57.2	200	600
MAGNESIUM	32.9	36.2	32.4	42.0	28.8	37.2	62.2	75	200
T.ALKALINITY	279	256	289	286	261	531	329		
CHLORIDE	96.9	212	534	230	165	370	186		
SULPHATE	64.5	169	342	152	76.5	320	138	250	1000
MANGANESE	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	BDL(DL-0.05)	30	100
IRON	0.05	0.07	0.06	0.06	0.02	0.07	0.03	45	No Relaxation
NITRATE	2.75	3.11	3.45	2.78	2.47	5.90	5.64	200	400
FLUORIDE	0.35	0.58	0.42	0.49	0.49	0.64	0.55	1	No Relaxation
TDS	470	726	1265	750	555	1210	676	0.1	0.3
FRC	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	Not Specified	Not Specified

All the values were found to be within permissible limits

11.2.3 NOISE ENVIRONMENT

Noise levels were measured in 6 locations and the results are given below.

S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Within Mine Lease Area	45.1	37.8	75	70
2	Vadapoondipattu Village	47.4	38.2		
3	Sumangali Village	46.3	39.1		
4	Karandai Village	45.3	37.6		
5	Kelneli Village	48.8	38.8		
6	Mariyanallur Village	48.0	38.8		
7	Perumpandi Village	45.7	38.5		

11.2.4 SOIL ENVIRONMENT

Soil samples are collected from 6 locations and the results are given below.

Results of Soil Sample Analysis								
Parameter	Unit	S1	S2	S3	S4	S5	S6	S7
pH at 25 °C	-	6.20	7.86	5.26	7.67	7.24	8.76	7.98
Electrical Conductivity	µmhos/cm	66.69	184.3	209.2	220.9	334.4	993.2	1327.0
Dry matter content	%	91.60	91.90	97.60	86.40	90.00	85.70	85.80
Water Content	%	8.40	8.11	2.14	13.60	10.00	14.30	14.20
Organic Matter	%	0.65	0.76	0.36	0.54	0.24	0.47	0.24
Soil texture	-	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)	BDL(DL-0.2)
Grain Size Distribution i. Sand	%	CLAY 8.98	CLAY 11.16	SILTY CLAY 7.52	CLAY 8.80	SILTY CLAY LOAM 9.91	CLAY 5.96	CLAY 9.40
ii. Silt	%	34.48	40.30	48.00	36.57	48.21	54.31	48.34
iii. Clay	%	56.54	48.54	43.58	54.63	41.89	39.73	42.25
Phosphorous as P	mg/kg	120	79	240	156	142	56	112
Sodium as Na	mg/kg	1.06	0.92	0.76	1.32	1.15	0.67	0.79
Potassium as K	mg/kg	109	261	181	578	140	132	421
Nitrogen and Nitrogenous Compounds	mg/kg	247	927	368	772	338	2065	812
Total Soluble Sulphate	%	38.0	39.0	40.0	36.0	38.0	40.0	42.0
Porosity	%	23	25	27	22	30	22	18

Water Holding Capacity	Inches/foot	6.20	7.86	5.26	7.67	7.24	8.76	7.98

11.2.5 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Field survey is done. Erukku, Aavarai and Nayuruvi are found in lease area. In the buffer zone, common trees like Neem, papaya, mango, teak, etc and shrubs like Avarai, Aloe vera, etc, climbers like Kovai,jasmine etc are found.

FAUNA

In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

11.2.6 LAND USE

The land use land cover data is found using the LANDSAT – 9 satellite imagery. The number of bands used are 11. The land use pattern is given below:

Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	10.79	3.40	Residential	10.79	3.40
				Commercial/Industrial	0.31	0.10
2	Agriculture	221.9	72.99	Crop/fallow land	180.33	56.3
3	Water bodies	58.24	18.19	Reservoir/Lake /Pond	58.24	18.19
				River/Stram		
4	Waste Land	10.66	3.33	Open without scrub	5.29	1.65
				Open with scrub	6.81	2.12
5	Mines	1.9	0.6	Mines	1.9	0.6
6	Forest	4.45	1.49	Forest	4.45	1.49

Total	320	100	Total	320	100

11.2.7 SOCIO ECONOMIC ENVIRONMENT

The socio economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used.

The following data area collected from secondary data.

- Demographic pattern.
- Health pattern
- Occupational structure.
- Amenities available.

The expert visited 5 villages in the study area namely Vadapoondipattu, Sumangali, Karandai, Kelineli and Mariyanallur villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also visited nearby hospitals, primary health centers and Tiruvannamalai. The following observations were made.

Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Tiruvannamalai which is about 10.0 km from the lease area. Major schools with higher secondary and senior secondary schools are located in Tiruvannamalai. The major Kaganam village located in the area is Tiruvannamalai. Facilities like petrol pump stations, ATM facility are available in Tiruvannamalai.

11.2.8 HYDROGEOLOGY OF THE LEASE AREA

There is Palar River is located at a distance of 8.9 km (NE) direction of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

There are many tanks located in the study area, which are mostly dry throughout the year. These tanks get water only during monsoons. The factors may be monsoon

failure, insufficient rainfall, poor rain water management and water consuming patterns.

11.2.9 GROUND WATER STUDY

For Ground water study, satellite imagery is used. Water levels from monitoring levels are collected through imaging. The pre-monsoon and post-monsoon data are collected and the results are analyzed.

During field visit, it is observed that water is available in wells only after monsoon. The yield is obtained at deep levels only.

As far as the mining lease area is considered, the area is rocky and no major seepage is envisaged. The production quantity is very less and the depth proposed is 37m BGL. Hence, there will not be any major impact due to mining on water levels or ground water levels in the area.

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

11.2.10 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 37m 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 1.58.0 Ha of lease area will be left as rain water harvesting pond. 0.46.5 Ha will be developed with green belt. For this, plants like Neem/Pungan are selected. A total of 465 trees are planned to be planted. Spacing will be 3m x 3m.

11.2.11 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 4.5 KLD which will be sourced from outside agencies. Negligible sewage 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 37m 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 7.5 HP 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 major water bodies found in the buffer zone are.

Water bodies	Distance and Direction
Tank	180m (SE)
Tank	1.1km (NE)
Tank	2.5km (NE)
Tank	2.7km (W)
Mamandur Tank	4.9km (E)
Permanthangal Tank	6.1km (NW)
Palar River	8.9km (NE)

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. For the canal, adequate safety distance is left. The proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the lease.

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

11.2.12 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.

11.2.13 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM₁₀, PM_{2.5}. Other than these pollutants, gaseous emissions of sulfur dioxide (SO₂) 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.

11.2.14 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.

11.2.15 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

- ✚ Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- ✚ Control of fly rock and vibration by maintaining peak particle velocity with in standard as prescribed by the DGMS and MOEF & CC.
- ✚ 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

11.2.16 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.

11.2.17 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.

11.2.18 ENVIRONMENTAL MONITORING PROGRAMME

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. For EMP, a budget of INR 139.28 Lakhs is allocated.

11.2.19 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc.,
- The project will also contribute via CSR.
- The demands of people during public hearing will also be considered by the project proponent

Social benefits

- This project provides employment to 27 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.
- Based on the demand of the people during public hearing, further funds will be allocated, if necessary.

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 139.28 lakhs for the five years has been allocated as EMP cost. 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. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER 12

DISCLOSURE OF CONSULTANTS

Global Mining Solutions is a NABET Accredited EIA consultant as per NABET certificate NABET/EIA/23-26/SA 0241, valid till 04.01.2026. 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 2.06.5 Ha, while total cluster area of 15.52.0 Ha at Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

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

EIA Coordinator Name: M. Manikandan


Signature & Date

Period of involvement: Dec 2024 to Feb 2025.

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**

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

S. No.	Functional areas	Name of the expert/s	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 measures for air pollution. Period: Dec 2024 to Feb 2025.	R. Dhamy
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: Dec 2024 to Feb 2025.	K. Abirami
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. Period: Dec 2024 to Feb 2025.	G. Ramadoss
4	SE	Saraswathy K	Baseline SE studies. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. Period: Dec 2024 to Feb 2025.	K. Saraswathy
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. Period: Dec 2024 to Feb 2025.	S. Saravanan
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. Period: Dec 2024 to Feb 2025.	N. Ravinthiran
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: Dec 2024 to Feb 2025.	T. Srilatha
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: Dec 2024 to Feb 2025.	R. Dhamy

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

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: Dec 2024 to Feb 2025.	T. Srilatha
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: Dec 2024 to Feb 2025.	S. V. Prashant
11	SC	Shisu Pal Singh	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. Period: Dec 2024 to Feb 2025.	Shisu Pal Singh
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: Dec 2024 to Feb 2025.	Valliappan Meyyappan

TM- EC

S.No	Name of TM (EC)	Sector (s) proposed	Approved (to work under)	Period of involvement	Type of work	Signature
1.	Abirami Kaliyaperumal	1	Manikandan Manickam	Period: Dec 2024 to Feb 2025	Associated with EIA Coordinator in overall preparation of Draft EIA/EMP report.	K. Abirami

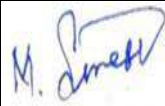
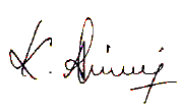
TM- FAE:

S. No	Name of TM (FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

1	Kamaraj S	LU	Srilatha Thiruveedhula	Involved in Final EIA Report a Team Member In overall EIA Preparation	Associated with Experts in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment.	
		HG	Ashok Kumar Rajagopal	<i>Period: Dec 2024 to Feb 2025</i>	Associated with Experts in studying hydrogeological pattern of study area, Studying ground water and the impact of the project on ground water	
2	B.J.Sampatkkumar	SE	Saraswathy K	<i>Period: Dec 2024 to Feb 2025</i>	Assisted by the Expert in preparation of socio-economic report.	
		SC	Shishupal Singh	<i>Period: Dec 2024 to Feb 2025</i>	Assisted by the Expert in interpretation of soil sampling and their quality involved in the project.	
3	Mownica Balaji	NV	Dhanalakshmi Ramanathan	<i>Period: Dec 2024 to Feb 2025</i>	Associated with the expert team in suggesting control measures for noise and Ground Vibration.	
		AP	Dhanalakshmi Ramanathan		Associated with expert team in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution	
4	Balasubramani G	NV	Dhanalakshmi Ramanathan	<i>Period: Dec 2024 to Feb 2025</i>	Associated with the expert in selection of base line monitoring stations, Review of Noise quality results, Review of emission sources – drilling, blasting, excavation and transportation, Identification of impacts on environment, identification of remedial measures and input to EIA preparation	

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

		Geo	Valliappan Meyyappan		Associated with the expert in preparing Geological map.	
5	Suresh Mani	LU	Srilatha Thiruveedhula	Period: Dec 2024 to Feb 2025	Associated with Experts in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment.	
		HG	Ashok Kumar Rajagopal		Associated with Experts in studying hydro-geology pattern of study area, studying water and the impact of the project on ground water.	
6	Asan Ali S	NV	Srilatha Thiruveedhula	Period: Dec 2024 to Feb 2025	Associated with the expert in monitoring and analysis of blast induced ground vibration in order to develop the site-specific equation for its prediction, monitoring of fly rocks & air blast (noise), preparation of SOP's for the safety blasting practice in the mines.	
		Geo	Valliappan Meyyappan		Associated with the Qualified Person & Experts in preparing Geological map, assessing stability of quarry slope faces and dump, management plan for mine stability and after use of mining quarry and geological features of the area during mine plan preparation.	
7	Prabu M	Geo	Valliappan Meyyappan	Period: Dec 2024 to Feb 2025	Associated with Experts and involved in Field Investigations, Mapping /Geo-referencing	
8	Abirami Kaliyaperumal	RH	S V Prashant	Period: Dec 2024 to Feb 2025	Involved with Expert team and involved in identification of Risk / Hazards and Safety	

DRAFT EIA/EMP FOR THE PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVL.SSS MINES, OVER AN EXTENT OF 2.06.5 HA LOCATED AT S.F.NO.39/4 OF AT KAGANAM VILLAGE, VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

					Measures for various activity	
9	Dhanalakshmi Ramanathan	AQ	Srilatha Thiruveedhula	<i>Period: Dec 2024 to Feb 2025</i>	Involved with Expert team and involved in calculating air emission values using Meteorological data and Providing inputs for running modelling (ISCT3, AERMOD).	<i>R. Dhanu</i>
10	Manikandan Manickam	AP	Ramadoss N	<i>Period: Dec 2024 to Feb 2025</i>	Associated with expert team in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution	<i>m. jay</i>
		WP	Abirami Kaliyaperumal		Associated with Identification of the source of water, impact and suggesting suitable mitigation measures for water pollution	



ANNEXURE-1



File No: 11938
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated 13/05/2025



To,

Tvl.SSS Mines
Thiru.M.Siva
S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai
District.,TAMIL NADU, 606601
brammaapackerskpm@gmail.com

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

Sir/Madam,

SEIAA, Tamil Nadu Rough stone and Gravel Quarry Over an extent of 2.06.5 hectares at S.F. No: 39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu by Tvl. SSS Mines - under project category – “B1” and Schedule S.No.1(a) “Mining of Minerals Projects” of EIA Notification, 2006, as amended – ToR issued along with Public Hearing - preparation of EIA report – Regarding.

Ref:

1. Online proposal No. SIA/TN/MIN/526477/2025, Dated: 03/03/2025.
2. Your application submitted for Terms of Reference dated: 12.03.2025.
3. Minutes of the 542nd SEAC meeting held on 26.03.2025.
4. Minutes of the 817th SEAC meeting held on 07.05.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5967367N
(ii) File No.	11938
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Proposed Rough stone and Gravel Quarry of Tvl. SSS Mines, Partner Thiru.M.Siva
(viii) Name of Company/Organization	SSS MINES
(ix) Location of Project (District, State)	TIRUVANNAMALAI, TAMIL NADU
(x) Issuing Authority	SEIAA

(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

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

2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 07.05.2025 The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal by Tvl. SSS Mines under the provisions of EIA Notification, 2006 and as amended thereof.

5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

6.The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

7.This issues with the approval of the Competent Authority.

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

Copy To

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

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Specific Conditions:

S. No	Terms of Reference
1.1	The authority noted that the subject was placed in the 542 nd SEAC-I meeting held on. After detailed discussions, the Authority accepts the recommendation of SEAC-I and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 2,71,250 m³ of Rough stone & 31,476m³ of Gravel up to the depth of 37m as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-I & normal

S. No	Terms of Reference
	conditions & the conditions mentioned below.

2. Seac Conditions - Site Specific

S. No	Terms of Reference
2.1	1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: a. Copy of the agreement forming CMC. b. The Organisation chart of the Committee with defining the role of the members c. The 'Standard Operating Procedures' (SoP) executing the planned activities. 2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report. 3. Since water bodies are situated nearby, the PP shall carry out the hydrological study including the details of water flow pattern to determine the impacts of the mining operation in the water bodies. 4. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report. 5. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 6. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 8. 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. 9. The P shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. 10. The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall. 11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

3. Seac Standard Conditions

S. No	Terms of Reference
3.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension

S. No	Terms of Reference
	(ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier.

S. No	Terms of Reference
	· Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

S. No	Terms of Reference
	28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	<u>Cluster Management Committee</u> 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. <u>Agriculture & Agro-Biodiversity</u> 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. <u>Forests</u> 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. <u>Water Environment</u> 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures.

S. No	Terms of Reference
	21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. <u>Disaster Management Plan</u> 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. <u>Others</u> 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and

S. No	Terms of Reference
	all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided

S. No	Terms of Reference
1.9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost

S. No	Terms of Reference
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect

S. No	Terms of Reference
	groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if

S. No	Terms of Reference
	any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

A. STANDARD TERMS OF REFERENCE

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The

proposed safeguard measures in each case should also be provided.

- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from

the Standing Committee of National Board of Wildlife and copy furnished.

- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the

proposed Project.

- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
 - a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental

increase in the above study shall be substantiated with mitigation measures.

14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.
 - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
 - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
 - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.



ANNEXURE-2

ந.க.எண்.263/கனிமம்/2024

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை-4.
நாள் 08.01.2025



அறிவிக்கை

கொருள் கனிமங்களும் குவாரிகளுக்கும் சிறுகனிமம் திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம், புல எண்.39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க - குவாரி குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா என்பவர் விண்ணப்பம் செய்தது - பரிந்துரை அறிக்கை வரப்பெற்றது - சுரங்கத் திட்டம் (Mining plan) தயார் செய்து சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை 1. தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, புல எண் 39/4, 40/2A2, & 129/4B1B, காகனம் கிராமம், வெம்பாக்கம் வட்டம் என்பவரின் விண்ணப்ப நாள்.09.08.2024
2. இவ்வலுவலக கடித ந.க.எண்.263/கனிமம்/2024 நாள்.09.08.2024.
3. வெம்பாக்கம் வட்டாட்சியர் அவர்களின் கடித ந.க.ஆ1/1581/2024 நாள்.25.09.2024.
4. சார் ஆட்சியர், செய்யார் அவர்களின் கடித ந.க.ஆ5/4095/2024 நாள்.03.12.2024.
5. உதவி புவியியலாளர் மற்றும் தனி வருவாய் ஆய்வாளர் புவியியல் மற்றும் சுரங்கத்துறை திருவண்ணாமலை அவர்களின் புலத்தணிக்கை நாள்.19.12.2024.
6. தொடர்புடைய ஆவணங்கள்.

திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம், புல எண். 39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவரின் பார்வை 1-ல் காணும் விண்ணப்பம் தொடர்பாக பார்வை 2-ல் காணும் இவ்வலுவலக கடிதம் மூலம் சார் ஆட்சியர், செய்யார் அவர்களின் அறிக்கை கோரப்பட்டது.

அதன்மேல் 3 மற்றும் 4-ல் காட்டும் வெவ்வேறான வட்டாட்சியர் மற்றும் சர்ட் ஆபிஸர், செயலாளர் மற்றும் பாசலை 5-ல் காட்டும் திருவண்ணாமலை மாவட்ட புவியியல் மற்றும் கரங்கத்துறை உதவி புவியியலாளர் மற்றும் துணி வரவாளர் ஆய்வாளர் ஆகியோரின் பரிந்துரை அறிக்கைகள் பரிசீலிக்கப்பட்டது.

மேற்காணும் பரிந்துரை அறிக்கைகளின்படி திருவண்ணாமலை மாவட்டம், வெவ்வேறான வட்டம், காகனை கிராமம், புல எண் 39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் 5 ஆண்டுகளுக்கு தரித்தூடு சிறுகனிம அலகை விதிகள் 1959, விதி 19(1), 20 மற்றும் 22-ன்படி விண்ணப்பதாரர் தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்க பரிந்துரை செய்யப்பட்ட 2.06.5 ஹெக்டேர் பரப்பினை கற்குவாரி செய்ய உகந்த புலம் (Precise Area) என தீர்மானித்து கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு அறிவிப்பு செய்யப்படுகிறது.

நிபந்தனைகள்

1. விண்ணப்ப புலத்தின் மேற்கே வடக்கு-தெற்காக செல்லும் தாழ்வழுத்த மின்கம்பிக்கு 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும் (அல்லது) சம்மந்தப்பட்ட துறை அலுவலரின் எழுத்துப்பூர்வ ஒப்புதலும் அதில் பரிந்துரைக்கப்படும் வழிமுறைகள், கட்டுப்பாடுகள் மற்றும் நிபந்தனைகளுக்கு உட்பட்டு செயல்பட வேண்டும் (அல்லது) தாழ்வழுத்த மின்கம்பிகளை விண்ணப்ப புலத்திலிருந்து 50மீ தொலைவில் மாற்றி அமைக்க வேண்டும்.
2. விண்ணப்ப வடக்கே கிழக்கு-மேற்காக செல்லும் தாழ்வழுத்த மின்கம்பிக்கு 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும் (அல்லது) சம்மந்தப்பட்ட துறை அலுவலரின் எழுத்துப்பூர்வ ஒப்புதலும் அதில் பரிந்துரைக்கப்படும் வழிமுறைகள், கட்டுப்பாடுகள் மற்றும் நிபந்தனைகளுக்கு உட்பட்டு செயல்பட வேண்டும் (அல்லது) தாழ்வழுத்த மின்கம்பிகளை விண்ணப்ப புலத்திலிருந்து 50மீ தொலைவில் மாற்றி அமைக்க வேண்டும்.
3. அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5மீ மற்றும் அரசு நிலங்களுக்கு 10மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக்கூடாது.
5. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியை சுற்றி முன் கம்பிவேலி அமைத்து குவாரிப்பணி தொடங்க வேண்டும்.
6. முறைப்படியும், விஞ்ஞானபூர்வமாகவும் குவாரிப்பணி செய்ய வேண்டும்.
7. சான்றிதழ் பெறப்பட்ட போர்மேன், வெடிப்பாளர் மற்றும் கரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.
8. குவாரிப் பணி தொடங்குவதற்கு முன் கரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.

9 பாதைகளைத் தகர்க்க தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி 36 (1-A)(b)-ல் தெரிவிக்கப்பட்டுள்ள வழிமுறைகளை பின்பற்றி குவாரி பணி செய்ய வேண்டும்.



தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதிகள் 41 மற்றும் 42-ன்படி சாதாரண கற்கள் மற்றும் இதர சிறு கனிமங்களுக்கு குவாரி குத்தகை உரிமம் வழங்கும் முன்பு ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெறப்பட வேண்டும் என வரையறுக்கப்பட்டுள்ளது.

எனவே, தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவர் ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்றினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம் பட்டா புல எண்.39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் 5 ஆண்டுகளுக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி எண் 19(1) மற்றும் 20-ன் கீழ் குத்தகை உரிமம் வழங்க உரிய நடவடிக்கை மேற்கொள்ளப்படும் என்ற விவரம் தெரிவிக்கப்படுகிறது.

மேலும், இவ்வறிப்பு கிடைக்கபெற்ற 90 நாட்களுக்குள் மேற்சொன்ன நிபந்தனைகளையும் குறிக்கும் வகையில் வரைவு சுரங்கத்திட்ட அறிக்கை தயார் செய்து இணை இயக்குநர் (கூ.பொ), புவியியல் மற்றும் சுரங்கத்துறை திருவண்ணாமலை அவர்களிடம் ஒப்புதல் பெற சமர்ப்பிக்குமாறு அறிவுறுத்தப்படுகிறது.

இணை இயக்குநர் (கூ.பொ),
உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை.

பெறுநர்:

தி/ள்.SSS Mines என்ற நிறுவனத்தின்
பங்குதாரர் திரு.M.சிவா,
புல எண் 39/4, 40/2A2, & 129/4B1B,
காகனம் கிராமம்,
வெம்பாக்கம் வட்டம்,
திருவண்ணாமலை.

8/10/14



ANNEXURE-3

From
Thiru.A.Arumuganainar, M.Sc.,
Joint Director (Addl., Ch.),
O/o. Assistant Director,
Geology and Mining,
Tiruvannamalai - 4.

To
Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B,
Kaganam Village,
Vembakkam Taluk,
Tiruvannamalai District.

Rc.No.263/Kanimam/2024, dated:24.01.2025.

Sir,

Sub: Quarries and Minerals – Minor Mineral - Rough stone and Gravel - Tiruvannamalai District – Vembakkam Taluk – Kaganam village Patta Land in SF.Nos.39/4 over an extent of 2.06.5 hecsts., – Application preferred by Tvl.SSS Mines, Partner Thiru.M.Siva - Precise area communicated – Submission of three copies of draft Mining Plan for approval - Approval accorded - regarding.

- Ref: 1. Application from Tvl.SSS Mines, Partner Thiru.M.Siva, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District dated:09.08.2024.
2. Precise Area Communication Notice Rc.No.263/ Kanimam/2024, dated 08.01.2025.
3. Mining Plan submitted by Tvl.SSS Mines, Partner Thiru.M.Siva, Tiruvannamalai District dated.21.01.2025

Tvl.SSS Mines, Partner Thiru.M.Siva, has preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 2.06.5 hecsts., of Patta land in SF.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District for a period of 5 years vide the reference 1st cited and the precise area has been communicated to the applicant vide the reference 2nd cited with a direction to submit the approved mining plan and Environmental Clearance.

2. As directed, the applicant has submitted three copies of mining plan for approval vide the reference 3rd cited. The Mining Plan has been verified in detail and found that it has been prepared in

accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

i) The reserves estimated in the mining plan is

Depth in Mts.	37m (2m Gravel + 35m Rough Stone)
Geological Resources	Rough Stone : 7,21,000 Gravel : 41,200
Mineable Reserve	Rough Stone : 2,71,250 Gravel : 31,476

3. Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, the mining plan is hereby approved, subject to the following conditions:

- i. The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- ii. This approval of the mining plan does not in any way convey the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iii. The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- iv. The validity of the mining plan is co-terminus with the lease period.
- v. Quarrying shall be done in accordance with the approved Mining Plan.
- vi. If anything is found to be concealed in the contents of the mining plan which are required by the mines act or if any proposed for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- vii. The applicant should leave 50m safety distance for low tension power line passing on Western side of lease area in

North-South direction or with the previous written permission of the officers authorised by the State Government in this behalf and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.

- viii. The applicant should leave 50m safety distance for low tension power line passing on Northern side of lease area in East-West direction or with the previous written permission of the officers authorised by the State Government in this behalf and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.
- ix. The safety distance of 7.5m to the adjacent patta lands and 10m to the Government lands should be provided.
- x. The applicant should not cause any hindrance to adjacent lands and public while quarrying operation.
- xi. Barbed wire fencing should be erected all along the boundary of the lease granted area before quarrying operation.
- xii. The quarry operation should be carried out by systematic and scientific manner.
- xiii. The quarry operation should be carried out with the certified Mine Manager, Foreman and Blaster.
- xiv. The applicant should inform to the Director of Mine Safety, Chennai before commencement of quarry operation vide opening notice.
- xv. The applicant should follow the guidelines under Rules 36(1-A)(b) of Tamil Nadu Minor Mineral Concession Rules, 1959 for removing the Rocks.

4. Further, other quarries situated within 500m radial distance are as follows.

i) Existing Quarries

Sl. No.	Name of the Owner	Village & S.F. Nos.	Extent in Hects.	Lease Period	Remarks
1.	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram.	Kaganam 58/1A ,1B,2A , 2B , 3 , 6 , 7 , 8A , 8B, 59/2A , 61/1B, 2A , 2B, 3 , 4A , 5A & 6	4.42.0	10-06-2024 to 09-06-2029	Rough Stone quarry

2	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	Kaganam 38/1, 2, 39/5, 6, 7 48/17,18, 19, 20, 426/2 & 426/3	4.18.0	20-09-2021 to 19-09-2031	Rough Stone quarry

ii) Abandoned quarries

Sl. No.	Name of the Owner	Village & S.F. Nos.	Extent in Hects.	Lease Period	Remarks
1	Thiru.S.SRIDHAR, S/o. T. Sivaprakasam, Managing Director,' SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram- 635 501.	Kaganam 44/11,58/7,5A,60 /2,58/5B,59/1A,1 B,2B,60/3,5,6 & 7	3.96.5	17-09-2018 to 16-09-2023	Rough Stone Expired quarry

iii) Present Proposed Quarries

Sl. No	Name of the Owner	Village & S.F. Nos.	Extent in Hects.
1	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.	Kaganam 39/4	2.06.5
2.	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	Kaganam 44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/4B1, 61/4B2, 61/5B, 61/7, 62, 63/1 & 63/2	4.85.5

Encl: 2 Copies of Approved Mining Plan.

Joint Director (Addl. Ch.),
Geology and Mining,
Tiruvannamalai.

Copy submitted to:

1. The Chairman, SEIAA,
Tamil Nadu, 3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet, Chennai-15.
2. The Commissioner of Geology and Mining, Chennai-32.
3. The District Collector, Tiruvannamalai.



APPROVAL MINING PLAN

MINING PLAN FOR KAGANAM ROUGH STONE & GRAVEL QUARRY

(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 : TIRUVANNAMALAI
TALUK : VEMBAKKAM
VILLAGE : KAGANAM
S.F.NO : 39/4
EXTENT : 2.06.5Ha

ECO-FRIENDLY



SUSTAINABILITY



SAFETY



FOR

APPLICANT

Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B,
Kaganam Village,
Vembakkam Taluk,
Tiruvannamalai District.

PREPARED BY

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person
No.93/36E2, Subramanியar Kovil Street,
Omalur Taluk, Salem District, Tamil Nadu,
Pin code-636 455.
MOBILE: 97502 23535 & 94446 54520.



(PPE)

Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B,
Kaganam Village, Vembakkam Taluk,
Tiruvannamalai District.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.06.5hectares of Patta lands in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State has been prepared by

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

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

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

No.93/36E2, Subramaniyar Kovil Street,
Omalur Taluk, Salem District,
Tamil Nadu, Pin code-636 455.
Mobile:97502 23535 & 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

For Tvl.SSS Mines,

M.Siva, (Partner)

Place: Tiruvannamalai

Date: 09.01.2025

Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B,
Kaganam Village, Vembakkam Taluk,
Tiruvannamalai District.



DECLARATION

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.06.5hectares of Patta lands in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai 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

For Tvl.SSS Mines,

M.Siva, (Partner)

Place: Tiruvannamalai

Date: 09.01.2025

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

No.93/36E2,Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 23535 & 94446 54520.



CERTIFICATE

This is to certify that, the provisions of under rules 41 & 42 as Amended in under Tamil Nadu Minor Mineral Concession Rules, 1959, have been observed the Mining Plan for the grant of **Rough Stone and Gravel** quarry lease over an extent of 2.06.5hectares of Patta lands in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State applied by Tvl.SSS Mines, 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.

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,

Qualified Person

Place: Salem

Date: 10.01.2025

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 23535 & 94446 54520.



CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 2.06.5hectares of Patta lands in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State for Tvl.SSS Mines, 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.


C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,

Qualified Person

Place: Salem

Date: 10.01.2025

CERTIFICATE



Certified that I, C.Natarajan, residing at No.93/36 E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin Code-636 455. I am a Post graduate in Geology (M.Sc., Geology) from Annamalai university 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 2.06.5Ha of (Patta lands) in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, by Tvl.SSS Mines, for a period of five 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.


C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,

Qualified Person

Place: Salem

Date: 10.01.2025

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Annexure

S. No.	Description	Annexure No.
1.0	Precise Area Communication letter issued by the Joint Director (additional i/c), Department of Geology and Mining,	I
2.0	Copy of FMB	II
3.0	Copy of Village map	III
4.0	Copy of Patta	IV
5.0	Copy of Adangal	V
6.0	Copy of A Register	VI
7.0	Copy of Partnership Deed	VII
8.0	Copy of LT Line shifting Acknowledgement	VIII
9.0	Copy of Identity Proof	IX
10.0	Copy of QP Certificate	X

LIST OF PLATES

S. No.	Description	Plate No.
1.0	Location Plan	I
2.0	Environmental Plan	I-A
3.0	Satellite imagery map	I-B
4.0	Topo sketch of Quarry lease applied area for 10Km Radius	I-C
5.0	Key Plan	I-D
6.0	Quarry lease & Surface plan	II
7.0	Topography and Geological Plan & Sections	III
8.0	Mineable Plan & Sections	IV
9.0	Yearwise Development, Production Plan & Sections	V
10.0	Conceptual Plan & Sections	VI



MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

Over an extent of 2.06.5hectares of Patta land in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State.

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

1.0 Introduction and Executive Summary;

1. The present Mining Plan is prepared for Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.
2. The application was processed by the Joint Director (additional i/c), Department of Geology and Mining, Tiruvannamalai, and passed an order vide Rc.No.263/Kanimam/2024 dated 08.01.2025 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 2.06.5 hectares of Patta lands in S.F.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District of Tamil Nadu State for a period of five 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 leave 50m safety distance for Low tension power line passing on western side North-South direction or with the written approval of the departmental officers concerned and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.



- b) The applicant should leave 50m safety distance for Low tension power line passing on Northern side East-west direction or with the written approval of the departmental officers concerned and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.
 - c) A safety distance of 7.5m should be provided patta lands and 10m safety distance should be provided to the adjacent Government lands.
 - d) The applicant should not cause any hindrance to adjacent lands and public while quarrying operation.
 - e) Barbed wire fencing should be erected all along the boundary of the lease granted area before quarrying operation.
 - f) Quarrying operation should be done proper scientific method only.
 - g) The applicant should appoint certified Mines Manager, Foreman and Blaster.
 - h) Before the quarrying operation applicant will intimate to the Director of Mines safety, Chennai.
 - i) As per Rule of 36(1-A) (b) of TNMMCR 1959, the applicant should follow the conditions During Blasting.
4. Geological Resources is estimated at 7,21,000m³ of Rough stone and 41,200m³ of gravel formation and Mineable Reserves is estimated at 2,71,250m³ of Rough Stone and 31,476m³ 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.
 5. The production schedule is proposed production of 2,71,250m³ of Rough Stone and 31,476m³ of gravel formation for the period of five years.
 6. The applicant ensured that, child labours under 18 years of age will not be engaged for quarrying operation.
 7. The applicant ensure that will appoint should have valid certified persons (Mines Manager, Foreman, Mate) during quarrying operation.



8. Environmental parameters,

- i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 6.5km radius.
- ii) There is no interstate boundary around 10Kms radius.
- iii) There is no wild life animal sanctuary within 10Kms radius from the project site area under the Wildlife (Protection) Act, 1972.

Therefore the project seeks clearance only from State Level Environmental Impact 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.
- viii) Noise level should not exceed 80db and the vehicles should use only permitted Air Horn while on road near residential areas.
- ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhere to.
- x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.



EXECUTIVE SUMMARY:

a.	Name of the Village Panchayat	:	Kaganam																																		
b.	Name of the Panchayat Union	:	Vembakkam																																		
c.	The proposed total Minable Reserves	:	2,71,250m ³ of Rough Stone, 31,476m ³ of gravel formation																																		
d.	The proposed quantity of reserves (level of production) for Five years to be mined is(Recoverable reserves)	:	2,71,250m ³ of Rough Stone, 31,476m ³ of gravel formation																																		
e.	Total extent of the area	:	2.06.5Ha																																		
f.	Proposed Period of mining	:	Five Years																																		
g.	Existing depth	:	It is fresh quarry lease applied area																																		
h.	Proposed Depth of mining	:	37m 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 is proposed.																																		
j.	Types of Machineries used in the quarry	:	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.																																		
k.	Cost of the Project A. Fixed Assets Cost B. Operational Cost C. EMP Cost		Rs. 15,39,000/- Rs. 52,00,000/- Rs. 5,60,000/- Total Project cost= Rs. 72,99,000/-																																		
1.	The area applied for lease is bounded by Fourteen corners and the coordinates are clearly marked in plate no II.																																				
	<table border="1"> <thead> <tr> <th rowspan="2">Corners</th><th colspan="2">Co- ordinates</th><th rowspan="2">Distance between the corners</th></tr> <tr> <th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr> <td>1</td><td>12° 44' 45.20"N</td><td>79° 34' 59.03"E</td><td>1-2 = 26.0m</td></tr> <tr> <td>2</td><td>12° 44' 46.01"N</td><td>79° 34' 59.27"E</td><td>2-3 = 19.8m</td></tr> <tr> <td>3</td><td>12° 44' 46.65"N</td><td>79° 34' 59.36"E</td><td>3-4 = 14.6m</td></tr> <tr> <td>4</td><td>12° 44' 47.12"N</td><td>79° 34' 59.37"E</td><td>4-5 = 63.0m</td></tr> <tr> <td>5</td><td>12° 44' 49.11"N</td><td>79° 34' 59.90"E</td><td>5-6 = 8.6m</td></tr> <tr> <td>6</td><td>12° 44' 49.23"N</td><td>79° 34' 59.64"E</td><td>6-7 = 75.0m</td></tr> <tr> <td>7</td><td>12° 44' 51.65"N</td><td>79° 34' 59.93"E</td><td>7-8 = 110.6m</td></tr> </tbody> </table>			Corners	Co- ordinates		Distance between the corners	Latitude	Longitude	1	12° 44' 45.20"N	79° 34' 59.03"E	1-2 = 26.0m	2	12° 44' 46.01"N	79° 34' 59.27"E	2-3 = 19.8m	3	12° 44' 46.65"N	79° 34' 59.36"E	3-4 = 14.6m	4	12° 44' 47.12"N	79° 34' 59.37"E	4-5 = 63.0m	5	12° 44' 49.11"N	79° 34' 59.90"E	5-6 = 8.6m	6	12° 44' 49.23"N	79° 34' 59.64"E	6-7 = 75.0m	7	12° 44' 51.65"N	79° 34' 59.93"E	7-8 = 110.6m
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8	12° 44' 50.72"N	79° 35' 03.47"E	8-9 =	105.0m
9	12° 44' 47.32"N	79° 35' 03.11"E	9-10 =	13.6m
10	12° 44' 47.23"N	79° 35' 02.67"E	10-11 =	88.2m
11	12° 44' 44.41"N	79° 35' 02.14"E	11-12 =	22.6m
12	12° 44' 44.44"N	79° 35' 01.32"E	12-13 =	22.4m
13	12° 44' 44.63"N	79° 35' 00.60"E	13-14 =	23.4m
14	12° 44' 44.97"N	79° 34' 59.91"E	14-1 =	27.6m

2.0 General Information:

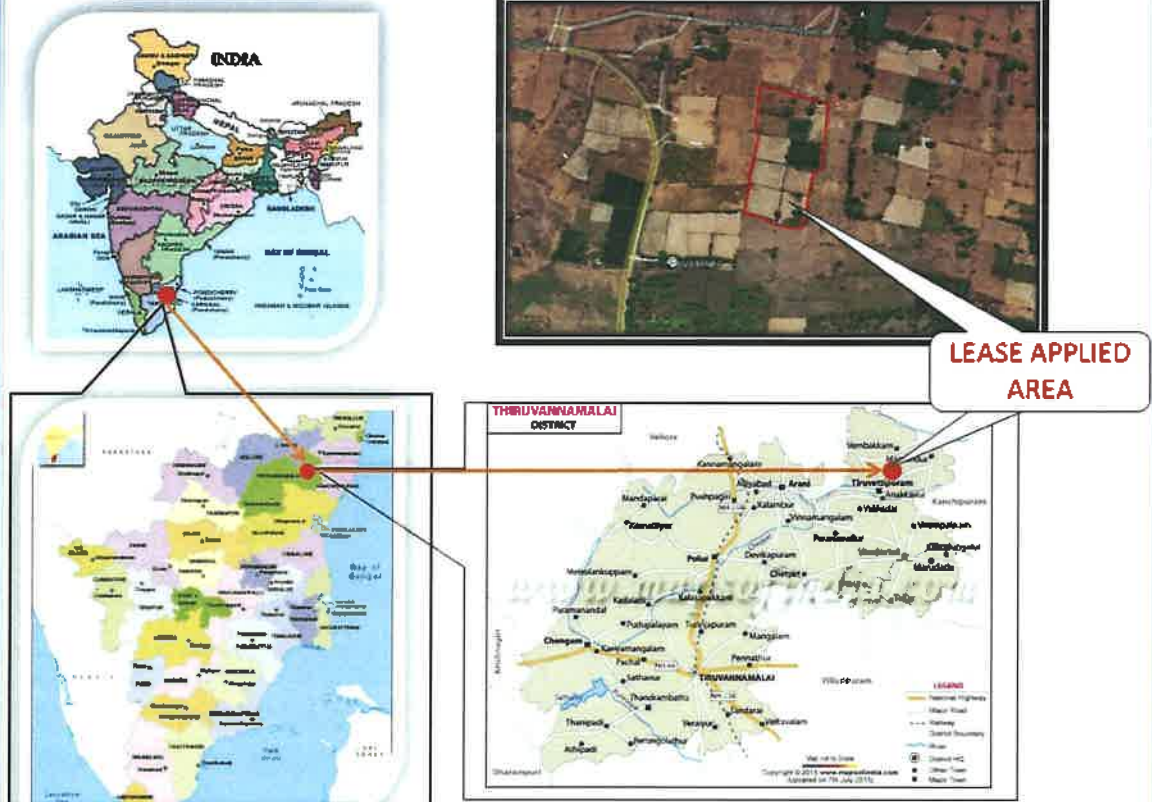
2.1	a.	Name of the Applicant	:	Tvl.SSS Mines, Partner Thiru.M.Siva,
	b.	Address of the Applicant with phone No and e-mail id if any	:	S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District. Pincode- 606 601 Cell No. 9443484200
	c.	Status of the Applicant	:	Partnership firm
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone and Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from the Joint Director (additional i/c), Department of Geology and Mining, Tiruvannamalai, vide Rc. No. 263/Kanimam/2024 dated 08.01.2025.
	c.	Period of permission / lease granted	:	The Joint Director (additional i/c), Department of Geology and Mining, Tiruvannamalai, has grant of lease period for five years .
	d.	Name and Address of the QP preparing Mining Plan	:	C.Natarajan, M.Sc.,M.Phil., Qualified Person No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin-636 455. Mobile: 97502 23535 & 94446 54520.



3.0 Location:

S.No	Details of the Area:	
1	Corner Coordinates	Latitude : 12°44'44.41"N to 12°44'51.65"N Longitude : 79°34'59.03"E to 79°35'03.47"E
2	Toposheet Number	57 P/10
3	The altitude of the area	116m (MSL)
4	Extent	2.06.5Ha
5	Survey No	39/4
6	Village	Kaganam
7	Taluk	Vembakkam
8	District	Tiruvannamalai
9	State	Tamil Nadu

LOCATION PLAN





a.	Classification of the Area (Ryotwari / poramboke / others)	:	Patta land
b.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is patta land registered in the name of Tvl.SSS Mines, vide patta no. 1358. Please refer annexure no.IV.
c.	Toposheet No. with Latitude and Longitude	:	Topo Sheet No: 57 P/10 Latitude : 12°44'44.41"N to 12°44'51.65"N Longitude : 79°34'59.03"E to 79°35'03.47"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 Sumangali- Kilnelli road on north side of the area. The Nearest Railway line is Kanchipuram – Chengalpattu line which is about 17.2Km on the northeast side of the area.



SATELLITE IMAGERY OF THE LEASE APPLIED AREA



TOPOGRAPHICAL VIEW OF LEASE APPLIED AREA

Fig. Location of the lease Applied Area



PART - A

4.0 Geology and Mineral Reserves:

4.1	a. Topography	: > The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 2m (avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 116m (maximum) from MSL. > No major river is found nearby the lease applied area. > Water table is found at a depth of 68m in summer and 65m in rainy seasons. > Temperature of the area is reported to be 18°C to a maximum of 42°C during summer. > Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons.
	b. General Geology of the Area	: 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 N40°E -S40°W with dipping towards SE70°. The general geological succession of the area is given as under.



			AGE Recent - Gravelly soil Unconformity Archaean - Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss
4.2		Details of Exploration already carried out if any	: No exploration was carried out, as the Rough stone formations are clearly visible from nearby existing quarry pit.
4.3	a.	Estimation of Reserves	: The Geological and Recoverable reserves are estimated by cross sectional method. Two sections have been drawn, one section drawn length wise as (X-Y), and another one section drawn width wise as (A-B), 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 37m below ground level only. Availability of Resources is given below.

Table No-1

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Geological Resources of Rough stone in m ³
XY-AB	I	200	103	2	41200	41200	
	II	200	103	5	103000		103000
	III	200	103	5	103000		103000
	IV	200	103	5	103000		103000
	V	200	103	5	103000		103000
	VI	200	103	5	103000		103000
	VII	200	103	5	103000		103000
	VIII	200	103	5	103000		103000
Total						41200	721000

Gravel Formation : 41,200m³

The Geological Resources of Rough stone : 7,21,000m³



b. Mineable Reserve

The mineable reserve calculated by deducting 7.5m safety distance and bench loss.

Table No-2

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Mineable Reserves of Rough stone in m ³
XY-AB	I	183	86	2	31476	31476	
	II	177	80	5	70800		70800
	III	167	70	5	58450		58450
	IV	157	60	5	47100		47100
	V	147	50	5	36750		36750
	VI	137	40	5	27400		27400
	VII	127	30	5	19050		19050
	VIII	117	20	5	11700		11700
Total						31476	271250

The mineable reserve is computed as 2,71,250m³ of Rough stone, 31,476m³ of Gravel formation upto a depth 37m below ground level only.

5.0 Mining:

5.1	Method of Mining	:	1. Opencast method of semi mechanized mining with 5.0m height 5m width of the bench. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom[possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.



5.2	Mode of Working	:	The rough stone is proposed to quarry 5m bench height, 5m width with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy 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. 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.
5.4	Details of Overburden / Mineral Production proposed for the first 5 years.	:	The overburden in the form of Gravel, after the excavation of Gravel and Rough stone will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.



The Yearwise Production and Development Table

Table No -3

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Gravel in m³	Mineable reserve of Rough stone in m³
I	XY-AB	I	138	86	2	23736	23736	
		II	135	80	5	54000		54000
Total							23736	54000
II	XY-AB	I	45	86	2	7740	7740	
		II	42	80	5	16800		16800
		III	107	70	5	37450		37450
Total							7740	54250
III	XY-AB	III	60	70	5	21000		21000
		IV	111	60	5	33300		33300
Total								54300
IV	XY-AB	IV	46	60	5	13800		13800
		V	147	50	5	36750		36750
		VI	20	40	5	4000		4000
Total								54550
V	XY-AB	VI	117	40	5	23400		23400
		VII	127	30	5	19050		19050
		VIII	117	20	5	11700		11700
Total								54150
Grand Total							31476	271250

The applicant has proposed to carry out 2,71,250m³ of Rough stone 31,476m³ of Gravel formation upto a depth of 37m below ground level for the period of five years.

5.5		Machineries to be used					
	a.	Drilling			:	It is proposed to use following machineries for quarrying rough stone	
		S.No	Type	Nos	Dia Hole mm	Make	Motive power
		1	Jack hammer	3	32	Atlas Copco	Compressed air
		2	Compressor	1	-	Atlas Copco	Diesel Drive
	b.	Loading			:	Excavator of 0.90m ³ bucket capacity (with Rock breaker attachment) (1No).	



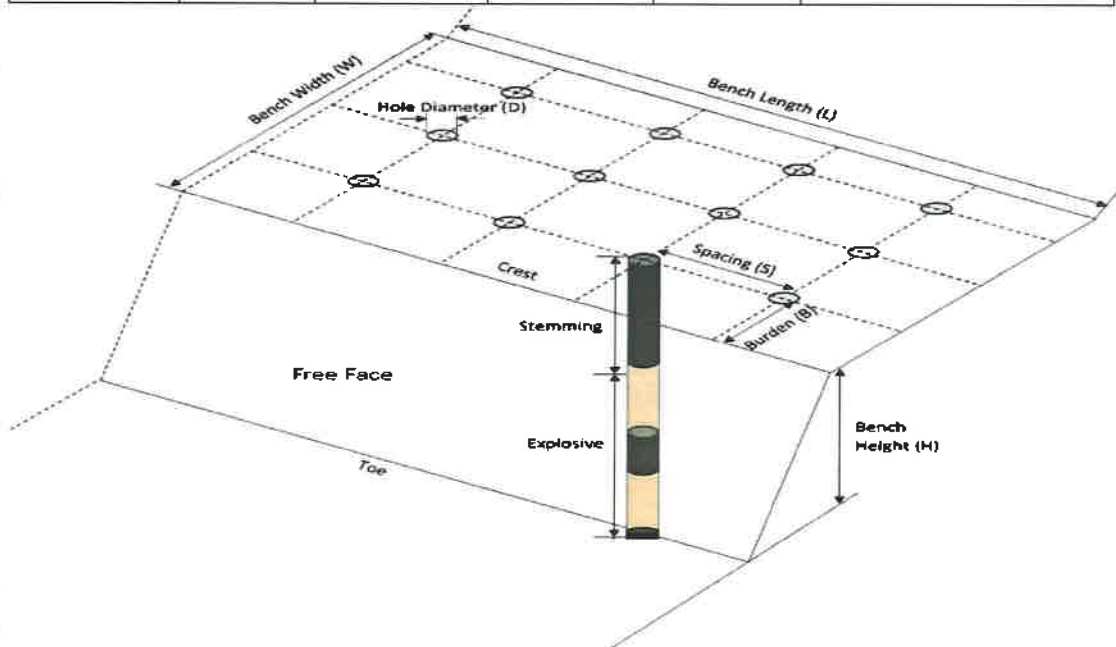
	c.	Transportation	:	Tipper 3Nos (5/10Ts) capacity												
5.6		Disposal of Overburden	:	The overburden in the form of Gravel, after the excavation gravel will be directly loaded into tipper to the needy buyers for road project and construction works for filling and leveling of low lying areas.												
5.7		Brief Note on Conceptual Mining Plan for the entire lease period	:	Conceptual Mining Plan is prepared with an object of five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc. Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. Ultimate Pit dimension is given as under, <table><tr><th colspan="4">Ultimate Pit dimension</th></tr><tr><th>Pit No</th><th>Length (max) in (m)</th><th>Width (Avg) in (m)</th><th>Depth(max) in(m)</th></tr><tr><td>I</td><td>183</td><td>86</td><td>37</td></tr></table> Afforestation has been proposed on all along the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.	Ultimate Pit dimension				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)	I	183	86	37
Ultimate Pit dimension																
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)													
I	183	86	37													



6.0 Blasting:

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

Diameter of the hole	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.



6.3	Measures proposed to minimize ground vibration due to blasting	➤ Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. ➤ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock. <table><tr><td>Number of holes</td><td>:</td><td>156</td></tr><tr><td>Powder factor</td><td>:</td><td>6Ts/Kg of explosives</td></tr><tr><td>Total explosive required</td><td>:</td><td>78Kg slurry explosives</td></tr><tr><td>Charge / hole</td><td>:</td><td>0.5Kg</td></tr><tr><td>Blasting time</td><td>:</td><td>12-2 Pm</td></tr></table>	Number of holes	:	156	Powder factor	:	6Ts/Kg of explosives	Total explosive required	:	78Kg slurry explosives	Charge / hole	:	0.5Kg	Blasting time	:	12-2 Pm
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Charge / hole	:	0.5Kg															
Blasting time	:	12-2 Pm															
6.4	Storage of Explosives and safety measures to be taken while blasting.	➤ The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. ➤ <i>The applicant ensure that will appoint the Mate (Should have Valid Blaster Certificate) during Blasting Operation.</i>															

7.0 Mine Drainage:

7.1	Depth of Water table	The ground water table is reported as 68m below ground level. In the proposed mining plan only 37m (below ground level) 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.
7.2	Arrangement and Places where the mine water is finally proposed to be discharged	The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is potable and it is not contaminated with any hazardous things. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water stored in the old pit will also be used for plantation purposes



8.0 Other Permanent Structures:

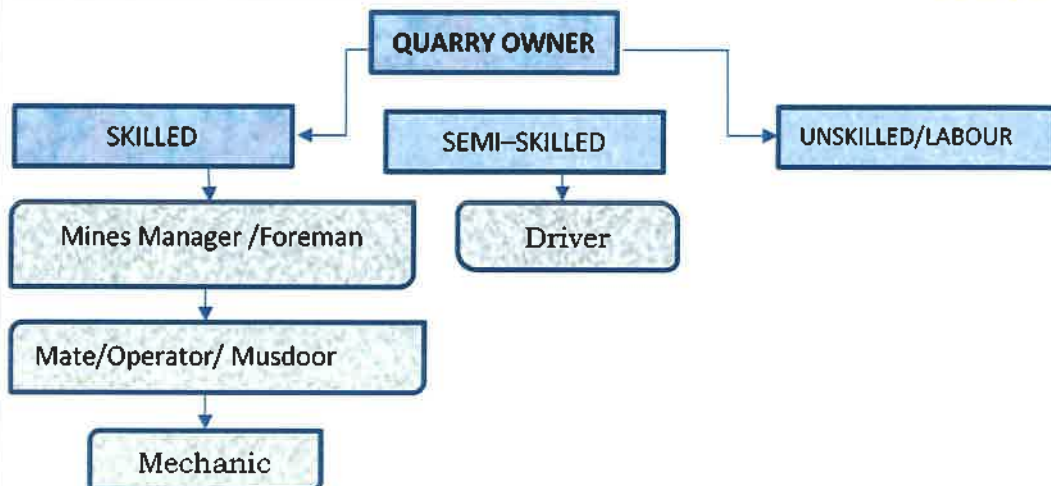
8.1	Habitations / Village	:	There are no habitations within a radius of 300m.
8.2	Power lines (HT/LT)	:	There is LT power line passing on western side North-South direction and Northern side East-west direction, the applicant ensure LT line will be transfers before execution of lease Deed. (Copy of LT Line shifting Acknowledgement is enclosed as annexure no.VIII)
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc.,)	:	There is Tank situated on south side and is 139m away from the lease applied area, There is no Water bodies (river, Pond, lake, odai, channel etc.) within 500m radius from the area.
8.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 300m.
8.5	Road (NH, SH, Village Road etc)	:	The National Highway (NH-4) Chennai-Krishnagiri is about 14.5Km on North side of the area. The State Highway (SH-5) Arcot- Vandavasi is about 7.2Km on Southwest side of the area.
8.6	Places of Worship	:	There are no Places of Worship within a radius of 50m.
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There is no Reserved Forest / 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	:	There are No inter State border within a radius of 10Kms.
8.9	Any Other Structures	:	Nil



9.0 Employment Potential & Welfare Measures:

9.1 Employment Potential (Management & Supervisory personal)

The proposed organization chart



1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	8 No.
		Mechanic	1 No.
2.	Semi-skilled	Driver	3 No.
3.	Unskilled	Labours	12Nos
Total =			27Nos

Allowing 10% absentee, the no. of men of roll will be around 24.

The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply the statutory provisions of Mines Safety Regulations.

- **It is been ensured that, child labours under 18 years of age will not be engaged for quarrying operation.**
- **Necessary life insurance policies will be taken by the applicant to all the employees up to the end of the lease period.**

9.2 Welfare Measures

a.	Drinking Water	:	Packaged drinking water is available from the nearby approved water vendors in Karandai village which is about 800m on northeast side of the area.



b.	Sanitary facilities	:	Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.
c.	First Aid Facility	:	First aid kits are kept in Mines office room, in case of such eventualities the victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospital is available at distance of 4.5Km (NE) in Vembakkam the competent and Statutory foreman/ permit manager will be in charge of first aid.
d.	Labour Health	:	As per Mines Rule, Periodic medical examination related to occupational health safety will be conducted to all the workers in applicant's own cost.
e.	Precautionary safety measures to the Labourers:		
			Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation. 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.



PART - B

10.0 Environmental Management Plan:

10.1	Existing Land Use Pattern	: 1. The area is exhibits almost plain topography covered by Gravel formation. 2. Quarrying operation is proposed up to a depth of 37m below ground level for the proposed mining plan period. 3. Fluctuation of Water table in this area is in between 68m and 65m during a year. 4. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation. The existing land use pattern is given as under. Table No-4 <table><tr><th>Sl. No.</th><th>Land Use</th><th>Present Area (Ha)</th><th>Area in use during the quarrying period (Ha)</th></tr><tr><td>1.</td><td>Quarrying Pit</td><td>Nil</td><td>1.58.0</td></tr><tr><td>2.</td><td>Infrastructure</td><td>Nil</td><td>0.01.0</td></tr><tr><td>3.</td><td>Roads</td><td>Nil</td><td>0.01.0</td></tr><tr><td>4.</td><td>Green Belt</td><td>Nil</td><td>0.46.5</td></tr><tr><td>5.</td><td>Unutilized</td><td>2.06.5</td><td>Nil</td></tr><tr><td></td><td>Total =</td><td>2.06.5</td><td>2.06.5</td></tr></table>	Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)	1.	Quarrying Pit	Nil	1.58.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	Nil	0.01.0	4.	Green Belt	Nil	0.46.5	5.	Unutilized	2.06.5	Nil		Total =	2.06.5	2.06.5
Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)																											
1.	Quarrying Pit	Nil	1.58.0																											
2.	Infrastructure	Nil	0.01.0																											
3.	Roads	Nil	0.01.0																											
4.	Green Belt	Nil	0.46.5																											
5.	Unutilized	2.06.5	Nil																											
	Total =	2.06.5	2.06.5																											
10.2	Water Regime	: Water table in this area is noticed at a depth of 68m and presently, in the proposed mining plan only 37m (below ground level) depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. hence, it will not affect the ground water depletion of this area.																												
10.3	Flora and Fauna	: Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.																												
10.4	Climatic conditions	: Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate. This District receives rain both in south west and north east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.																												



10.5	Human Settlement	:	The nearest habitations with the population is given as under.
Table No-5			
S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Karandai	800m - NE	300
2.	Sumangali	1.8km-NW	550
3.	Kaganam	1.2km - SE	400
4.	Perumpandi	2.5km-SW	500
10.6	Plan for Air, Dust Suppression	:	Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling. Operators, those exposed directly to such conditions will be provide such protective equipment like mask, ear plug, helmet, gloze etc., as per the Mines Act.
10.7	Plan for Noise Control	:	Quarrying of Rough Stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Five years	:	The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF.



10.9	Proposal for Waste Management	:	There is no waste anticipated in this rough stone quarry operation.
10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	:	In the proposed mining plan 37m (below ground level) 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 37m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.
10.11	Program for Afforestation	:	The 7.5m safety distance along the lease boundary has been identified to be utilized for afforestation. Appropriate native species of Neem/Pungan trees will be planted in the first year. Nearly 4650Sqm area is proposed to use under afforestation by planting 558nos 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.
10.12	Proposed Financial Estimate / Budget for (EMP) Environment Management		
	A. Fixed Asset Cost:		
	1. Land Cost (600000/1Ha)=	:	Rs. 12,39,000
	2. First aid room and accessories	:	Rs.1,00,000
	3. Labour Shed	:	Rs.1,00,000
	4. Sanitary Facility	:	Rs.1,00,000
	Total=		Rs. 15,39,000/-
	B. Operational Cost:		
	1. Machineries	:	Rs.50,00,000-
	2. Fencing cost	:	Rs. 2,00,000
	Total	:	Rs.52,00,000/-



12.0 Any Other Details Intend to Furnish by the Applicant:

- (i) Permission will be obtained from the District Mines Office to extract the Rough Stone from the Boundary barriers and for slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued and 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

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,

Qualified Person

Place : Salem

Date : 10.01.2025

**This Mining Plan is Approved
Subject to the conditions/Stipulation
indicated in the Mining Plan Approval
Letter No. 263/Mines/2024 , Dt: 24.1.2025
office of the Assistant Director of
Geology and Mining, Tiruvannamalai.**

**Joint Director (A/C)
O/o. Assistant Director
Geology and Mining,
Tiruvannamalai.**

**LM
24/01/25**

ந.க.எண்.263/கனிமம்/2024

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை-4.
நாள் 08.01.2025



அறிவிக்கை

கொருள் கனிமங்களும் குவாரிகளுக்கும் சிறுகனிமம் திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம், புல எண்.39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க - குவாரி குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா என்பவர் விண்ணப்பம் செய்தது - பரிந்துரை அறிக்கை வரப்பெற்றது - சுரங்கத் திட்டம் (Mining plan) தயார் செய்து சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை 1. தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, புல எண் 39/4, 40/2A2, & 129/4B1B, காகனம் கிராமம், வெம்பாக்கம் வட்டம் என்பவரின் விண்ணப்ப நாள்.09.08.2024
2. இவ்வலுவலக கடித ந.க.எண்.263/கனிமம்/2024 நாள்.09.08.2024.
3. வெம்பாக்கம் வட்டாட்சியர் அவர்களின் கடித ந.க.ஆ1/1581/2024 நாள்.25.09.2024.
4. சார் ஆட்சியர், செய்யார் அவர்களின் கடித ந.க.ஆ5/4095/2024 நாள்.03.12.2024.
5. உதவி புவியியலாளர் மற்றும் தனி வருவாய் ஆய்வாளர் புவியியல் மற்றும் சுரங்கத்துறை திருவண்ணாமலை அவர்களின் புலத்தணிக்கை நாள்.19.12.2024.
6. தொடர்புடைய ஆவணங்கள்.

திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம், புல எண். 39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவரின் பார்வை 1-ல் காணும் விண்ணப்பம் தொடர்பாக பார்வை 2-ல் காணும் இவ்வலுவலக கடிதம் மூலம் சார் ஆட்சியர், செய்யார் அவர்களின் அறிக்கை கோரப்பட்டது.

அதன்மேல் 3 மற்றும் 4-ல் காட்டும் வெவ்வேறான வட்டாட்சியர் மற்றும் சர்ட் ஆபிஸர், செயலாளர் மற்றும் மாணவ 5-ல் காட்டும் திருவண்ணாமலை மாவட்ட புவியியல் மற்றும் கரங்கத்துறை உதவி புவியியலாளர் மற்றும் துணி வரவாளர் ஆய்வாளர் ஆகியோரின் பரிந்துரை அறிக்கைகள் பரிசீலிக்கப்பட்டது.

மேற்காணும் பரிந்துரை அறிக்கைகளின்படி திருவண்ணாமலை மாவட்டம், வெவ்வேறான வட்டம், கரங்கைக் கிராமம், புல எண் 39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் 5 ஆண்டுகளுக்கு துரிதநாடு சிறுகனிம அலுவலக விதிகள் 1959, விதி 19(1), 20 மற்றும் 22-ன்படி விண்ணப்பதாரர் தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்க பரிந்துரை செய்யப்பட்ட 2.06.5 ஹெக்டேர் பரப்பினை கற்குவாரி செய்ய உகந்த புலம் (Precise Area) என தீர்மானித்து கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு அறிவிப்பு செய்யப்படுகிறது.

நிபந்தனைகள்

1. விண்ணப்ப புலத்தின் மேற்கே வடக்கு-தெற்காக செல்லும் தாழ்வழுத்த மின்கம்பிக்கு 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும் (அல்லது) சம்மந்தப்பட்ட துறை அலுவலரின் எழுத்துப்பூர்வ ஒப்புதலும் அதில் பரிந்துரைக்கப்படும் வழிமுறைகள், கட்டுப்பாடுகள் மற்றும் நிபந்தனைகளுக்கு உட்பட்டு செயல்பட வேண்டும் (அல்லது) தாழ்வழுத்த மின்கம்பிகளை விண்ணப்ப புலத்திலிருந்து 50மீ தொலைவில் மாற்றி அமைக்க வேண்டும்.
2. விண்ணப்ப வடக்கே கிழக்கு-மேற்காக செல்லும் தாழ்வழுத்த மின்கம்பிக்கு 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும் (அல்லது) சம்மந்தப்பட்ட துறை அலுவலரின் எழுத்துப்பூர்வ ஒப்புதலும் அதில் பரிந்துரைக்கப்படும் வழிமுறைகள், கட்டுப்பாடுகள் மற்றும் நிபந்தனைகளுக்கு உட்பட்டு செயல்பட வேண்டும் (அல்லது) தாழ்வழுத்த மின்கம்பிகளை விண்ணப்ப புலத்திலிருந்து 50மீ தொலைவில் மாற்றி அமைக்க வேண்டும்.
3. அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5மீ மற்றும் அரசு நிலங்களுக்கு 10மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக்கூடாது.
5. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியை சுற்றி முன் கம்பிவேலி அமைத்து குவாரிப்பணி தொடங்க வேண்டும்.
6. முறைப்படியும், விஞ்ஞானபூர்வமாகவும் குவாரிப்பணி செய்ய வேண்டும்.
7. சான்றிதழ் பெறப்பட்ட போர்மேன், வெடிப்பாளர் மற்றும் கரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.
8. குவாரிப் பணி தொடங்குவதற்கு முன் கரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.

9 பாதைகளைத் தகர்க்க தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி 36 (1-A)(b)-ல் தெரிவிக்கப்பட்டுள்ள வழிமுறைகளை பின்பற்றி குவாரி பணி செய்ய வேண்டும்.



தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதிகள் 41 மற்றும் 42-ன்படி சாதாரண கற்கள் மற்றும் இதர சிறு கனிமங்களுக்கு குவாரி குத்தகை உரிமம் வழங்கும் முன்பு ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெறப்பட வேண்டும் என வரையறுக்கப்பட்டுள்ளது.

எனவே, தி/ள்.SSS Mines என்ற நிறுவனத்தின் பங்குதாரர் திரு.M.சிவா, என்பவர் ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்றினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் திருவண்ணாமலை மாவட்டம், வெம்பாக்கம் வட்டம், காகனம் கிராமம் பட்டா புல எண்.39/4-ல் 2.06.5 ஹெக்டேர் பரப்பில் 5 ஆண்டுகளுக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி எண் 19(1) மற்றும் 20-ன் கீழ் குத்தகை உரிமம் வழங்க உரிய நடவடிக்கை மேற்கொள்ளப்படும் என்ற விவரம் தெரிவிக்கப்படுகிறது.

மேலும், இவ்வறிப்பு கிடைக்கபெற்ற 90 நாட்களுக்குள் மேற்சொன்ன நிபந்தனைகளையும் குறிக்கும் வகையில் வரைவு சுரங்கத்திட்ட அறிக்கை தயார் செய்து இணை இயக்குநர் (கூ.பொ), புவியியல் மற்றும் சுரங்கத்துறை திருவண்ணாமலை அவர்களிடம் ஒப்புதல் பெற சமர்ப்பிக்குமாறு அறிவுறுத்தப்படுகிறது.

இணை இயக்குநர் (கூ.பொ),
உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை.

பெறுநர்:

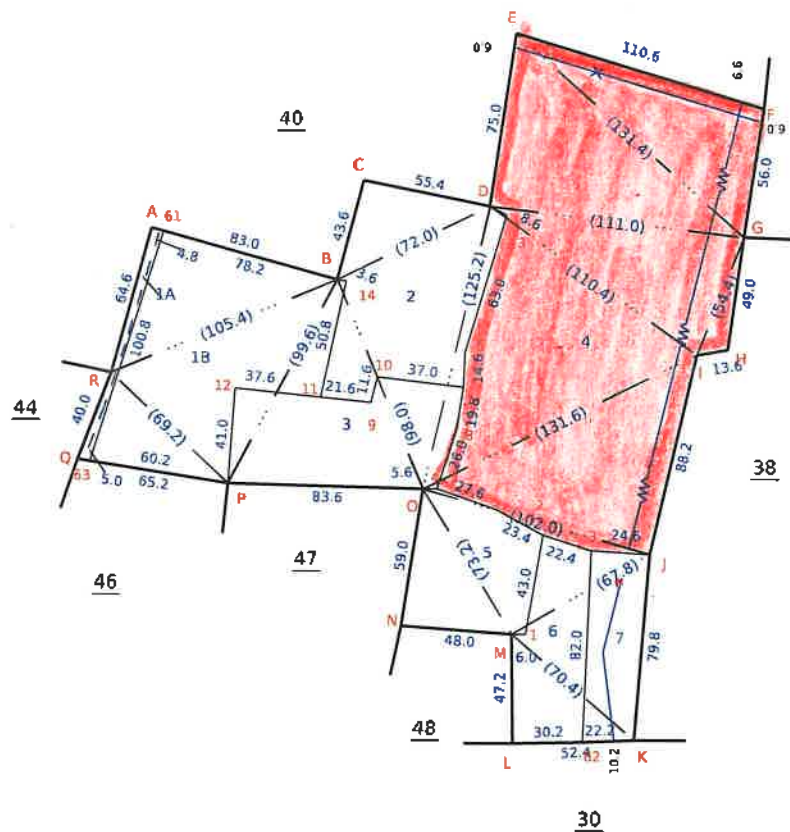
தி/ள்.SSS Mines என்ற நிறுவனத்தின்
பங்குதாரர் திரு.M.சிவா,
புல எண் 39/4, 40/2A2, & 129/4B1B,
காகனம் கிராமம்,
வெம்பாக்கம் வட்டம்,
திருவண்ணாமலை.

8/10/14

[82]



Scale : 1 : 2078



V.NO:81KARANTHI

LEASE APPLIED AREA



Date of Issue: 13-01-2025 11:56:15

Signed By Tahsildar
Name of approver : tahv
Date of Approval : 15-06-2017



தலை: ம் திருவள்ளூர்

அமை: தலைவன்

பெட்டி/பெட்டி 129, 40, 89

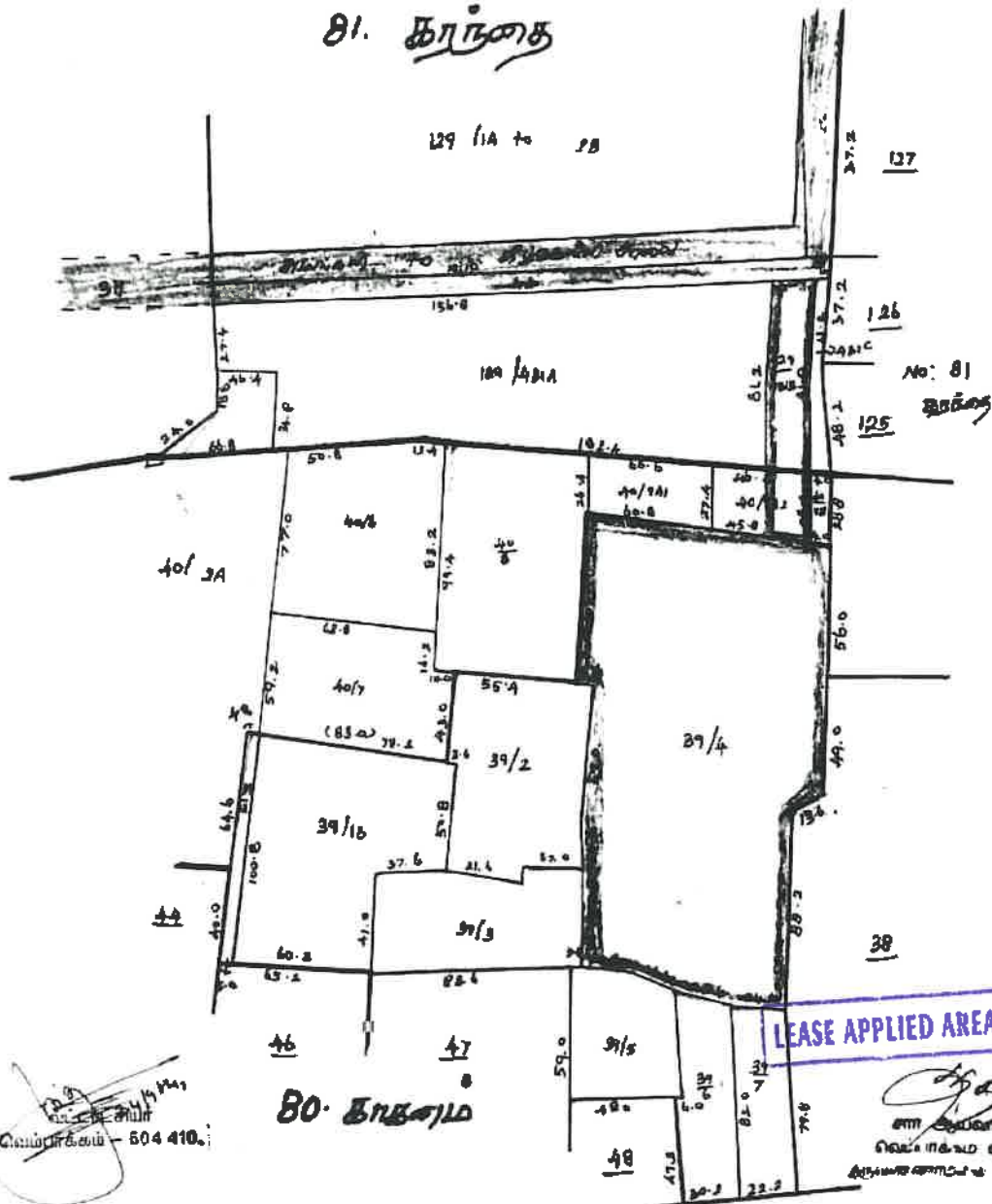
தலை பெட்டி தலைவன்

ANNEXURE



- ☐ 1) தலைவன் தலைவன் தலைவன் தலைவன்
தலைவன் 39/4 பெட்டி 1.065 பெட்டி
- ☐ 2) தலைவன் தலைவன் தலைவன் தலைவன்
தலைவன் 129/40B, 40/9A1
- ☐ 3) தலைவன் தலைவன் தலைவன் தலைவன்

81. தலைவன்



80. தலைவன்

Not to scale



தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருவண்ணாமலை

வட்டம் : வெம்பாக்கம்

வருவாய் பிராமம் : காசனம்

பட்டா எண் : 1358

உரிமையாளர்கள் பெயர்

1. எஸ்.எஸ்.எஸ். எம்.எஸ்.ஸ். நிறுவனம்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
39	4	2 - 6.50	5.41	--	--	--	--	2024/0103/06/426811- .. 02-08-2024
		2 - 6.50	5.41					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 06/10/082/01358/70287 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 05-08-2024 அன்று 03:13:20 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



Kaganam

Scanned by CamScanner

CHETTINAD CEMENT CORPORATION LTD.,

(Regd. Office: RANI SEETHAI HALL BUILDING IV & V FLOORS, 603, ANNA SALAI, MADRAS-600006.)
WORKS OFFICE, PULIYUR.21144
PHONE 22744 KARUR
21745
TELE: GRAM "CEMENT" Puliur C.F.
Telex: 0456-215.
STD Code: 04324All Correspondences to
Kumararajah Muthiah Nagar,
PULIYUR CEMENT FACTORY POST 639114.
(Karur Taluk Trichy Dt.)T.RAJU., B.E.,
MINES MANAGER & DY. GENERAL MANAGER.22nd September, 1987.CERTIFICATE.

This is to certify that Mr.C.Natarajan has been working as a Geologist from 14-12-1979 to till date. He has been incharge of supervision of day to day functions in respect of Exploration, Preparation of Geological Plans & Sections, Preparation of Mines Plans, and Quality control and other allied mining activities in the following Pits of our Seethainagar Limestone Mines in Anna District.

<u>Name of the Pit.</u>	<u>Average Raising/day.</u>
1. Alambadi Pit.	- 1,700 T.
2. Mallapuram Pit.	- 900 T.
3. Karikkali Pit.	- 150 T.
Total.	- 2,750 T.

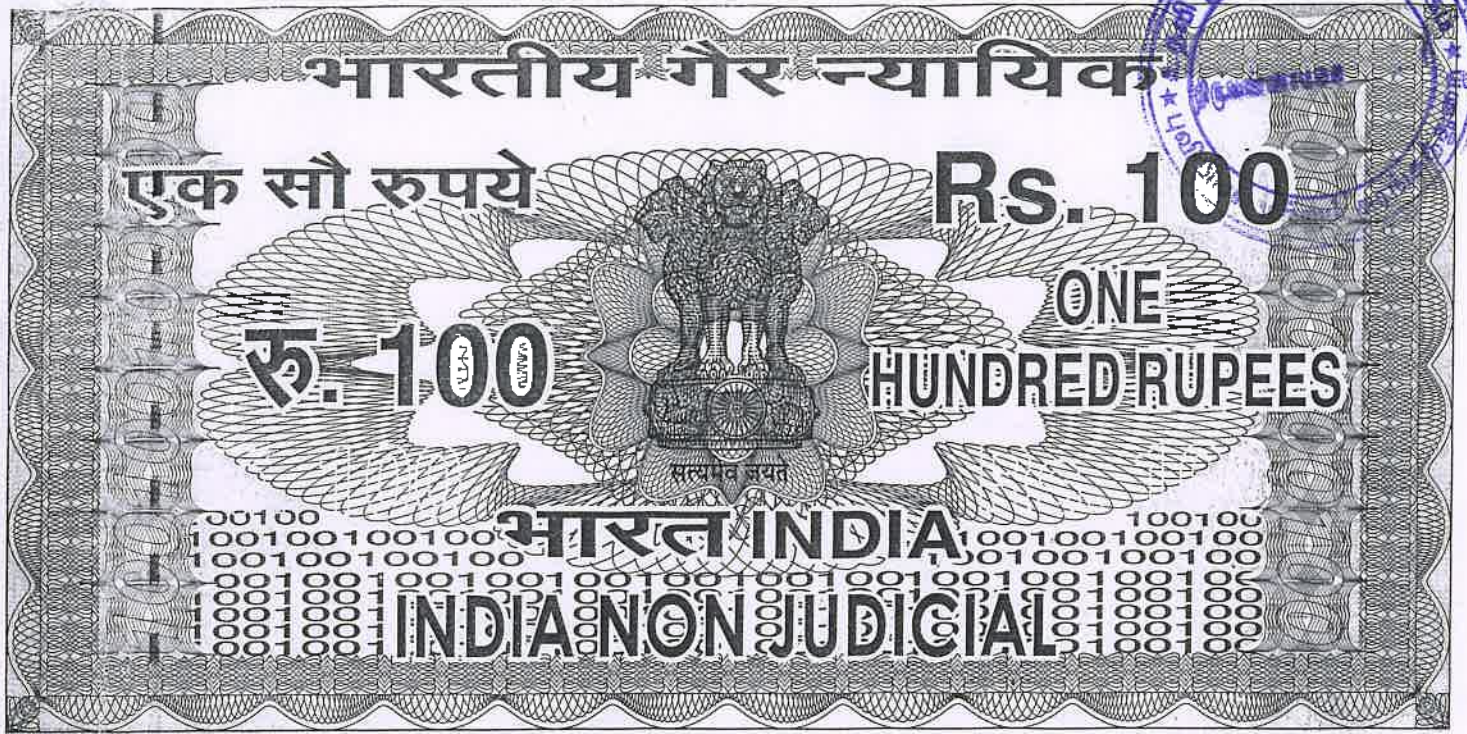
He has got nearly Eight years of total experience in our Mines in the above supervisory capacity.

for CHETTINAD CEMENT CORPORATION LTD.,



(T.RAJU).

Mines Manager & Dy. General Manager.



தமிழ்நாடு தமில்நாடு TAMILNADU

DM 945653

2023

தேதி

SSS mines

Kaganam

13/07/2024

M. இராஜசேகரன்,
முத்திரைதான் விற்பனையாளர்,
உரிமம் எண்: 7294/சி1/92-1.
552, காந்தி ரோடு, காஞ்சிபுரம்-1.

DEED OF PARTNERSHIP
SSS MINES

This deed of partnership is entered into at Kanchipuram on this day the 13th July, 2024 among:

- 1 **Mr. M.Siva** S/o. Mr.Munusamy aged about 43 years residing at No.15, Bagath Sing Street, NGO Nagar, Kanchipuram-631501 , hereinafter called the party of the **First Part** (PAN : DXBPS7055G)
- 2 **Mr. K.Sekar** S/o. Mr.Kuppan aged about 40 years residing at No.290, Pillaiyar Kovil Street, Chellapeumpulimedu, Tiruvannamalai-631701, hereinafter called the party of the **Second Part** (PAN : KLRPS0792H)

Contd..

K. Sekar



தமிழ்நாடு தமில்நாடு TAMILNADU

DM 945654

2023

ச.செதி

SSS mines

Kaganam

13/07/2024

M. இராஜசேகரன்,
முத்திரைத்தாள் விற்பனையாளர்,
உரிமம் எண்: 7294/81/92-1.
552, காந்தி ரோடு, காஞ்சிபுரம்-1.

-2-

Whereas the above parties agreed to enter into partnership to carry on business in the name and style of **SSS MINES** with effect from 12th July 2024 on such terms and conditions which reduced in writing stood as follows;

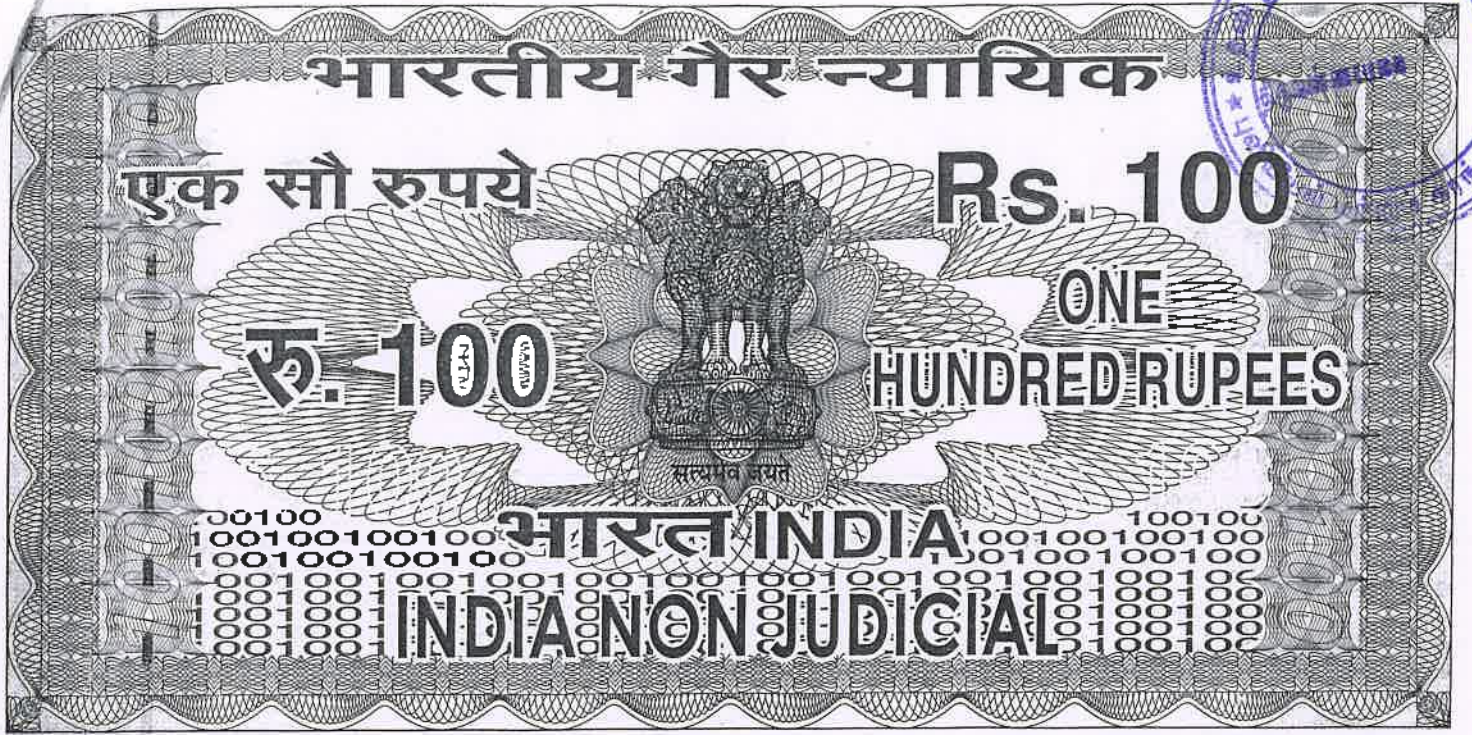
NOW THIS INDENTURE WITNESSETH AS FOLLOW:

- 1 The Name of the Partnership business shall be "**SSS MINES**".
- 2 The Place of business shall be at New Survey No.39/4, 40/9A2 & 129/4B1B, Kaakanam Village, Vembakkam, Tiruvannamalai District-604410.
- 3 The Nature of Business shall be deal with Quarry, Crusher, Blue Metals, Crushed Stones and other related stone material items etc., or such other business or businesses as the partners decides from time to time.

Contd...

M. Sekar

K. Sekar



தமிழ்நாடு தமில்நாடு TAMILNADU

DM 945655

2023 தேதி 359 mines
Kaganam
13/07/2024

M. இராஜசேகரன்,
முத்திரைதாள் விற்பனையாளர்.
உரிமம் எண்: 7294/கி1/92-1.
552, காந்தி ரோடு, காஞ்சிபுரம்-1.

-3-

- 4 The Capital of the partnership shall be Rs.5,00,000/- (Rupees Five Lakh Only) contributed by the partners equally.
- 5 The sums required over and above the may be borrowed from outside, Commercial banks, Finance etc. The amount standing to Credit/debit of partners what ever it may be shall be charged at simple interest rate of 12%pa.
- 6 Bank account shall be opened in the name of Firm and it shall be operated by First and Second Parts to this agreement jointly on behalf of the firm

Contd...

M. Sekar

K. Sekar



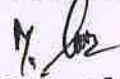
-4-

- 7 All the partners to this agreement shall be a working partners and they shall be remunerated for their contribution towards skill and labour as per book profit computed under section 40(b) of Income tax act equally.
- 8 Proper books of accounts shall be maintained and they shall be closed for each 31st March of the year and profit or loss thus arrived shall be shared by the partners equally.
- 9 The partnership shall be on at will. Death or insolvency of partners shall not affect the firm.
- 10 That all the disputes or differences arising out of it and connected with the Partnership shall be referred to the arbitrator in accordance with the Indian Arbitration Act
- 11 Any Partner desirous of seceding from the firm shall give three month notice and the balances if any on their account shall be settled on the basis of mutual understanding among them.
- 12 For the matters not specifically provided for in this agreement the provisions of the Indian Partnership Act, 1932 shall apply.

IN WITNESS WHEREOF THE ABOVE PARTIES HAVE SET THEIR HANDS ON THE AND YEAR MENTIONED ABOVE

Witness

1. S. Anitha S. Anitha
315, Cross Street
Puvilai Village (TV. Dt)
2 9787650238
- S. Suresh
S. Sureshambornu
17th, Cross Street, 12th Main Street
Kannur, 631302
90033 87318


Party of the First Part

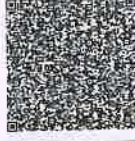
K. Sekar
Party of the Second Part



भारत सरकार
GOVERNMENT OF INDIA



சிவா முனுசாமி
Siva Munusamy
பிறந்த நாள்/DOB: 20/06/1981
ஆண்/ MALE
Mobile No: 9443484200



8935 3059 5183
VID : 9159 2170 1240 7196

எனது ஆதார். எனது அடையாளம்



भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

முனியாமி, 15, பாகத் சிங் தெரு, என் ஜி ஒ நகர்,
காஞ்சிபுரம், காஞ்சிபுரம்,
தமிழ் நாடு - 631501

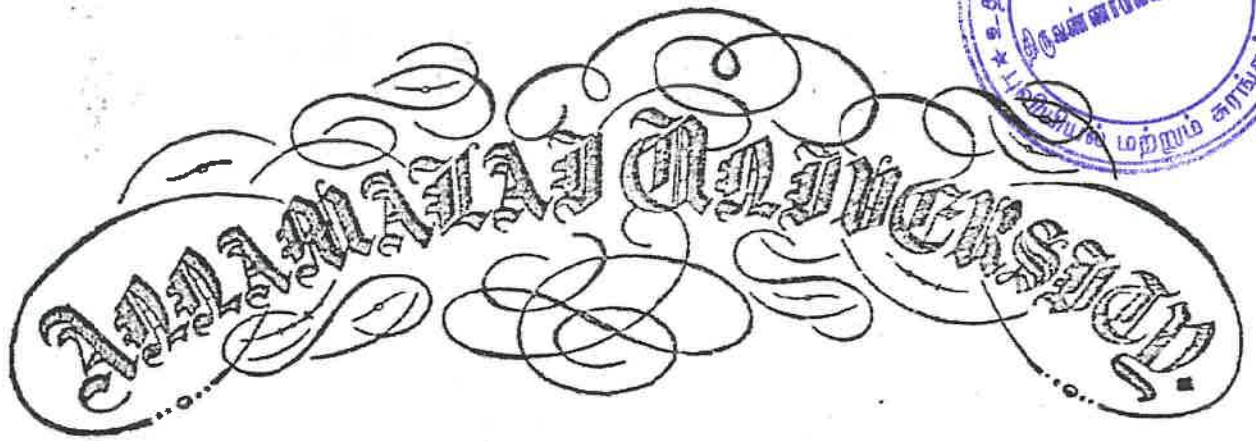
Address :
S/O, Munusamy, 15, Bagath Sing Street, N
G O Nagar, Kancheepuram,
Kancheepuram,
Tamil Nadu - 631501



1947
1800 300 1947

help@uidai.gov.in

www.uidai.gov.in P.O. Box No.1947,
Bengaluru-560 081

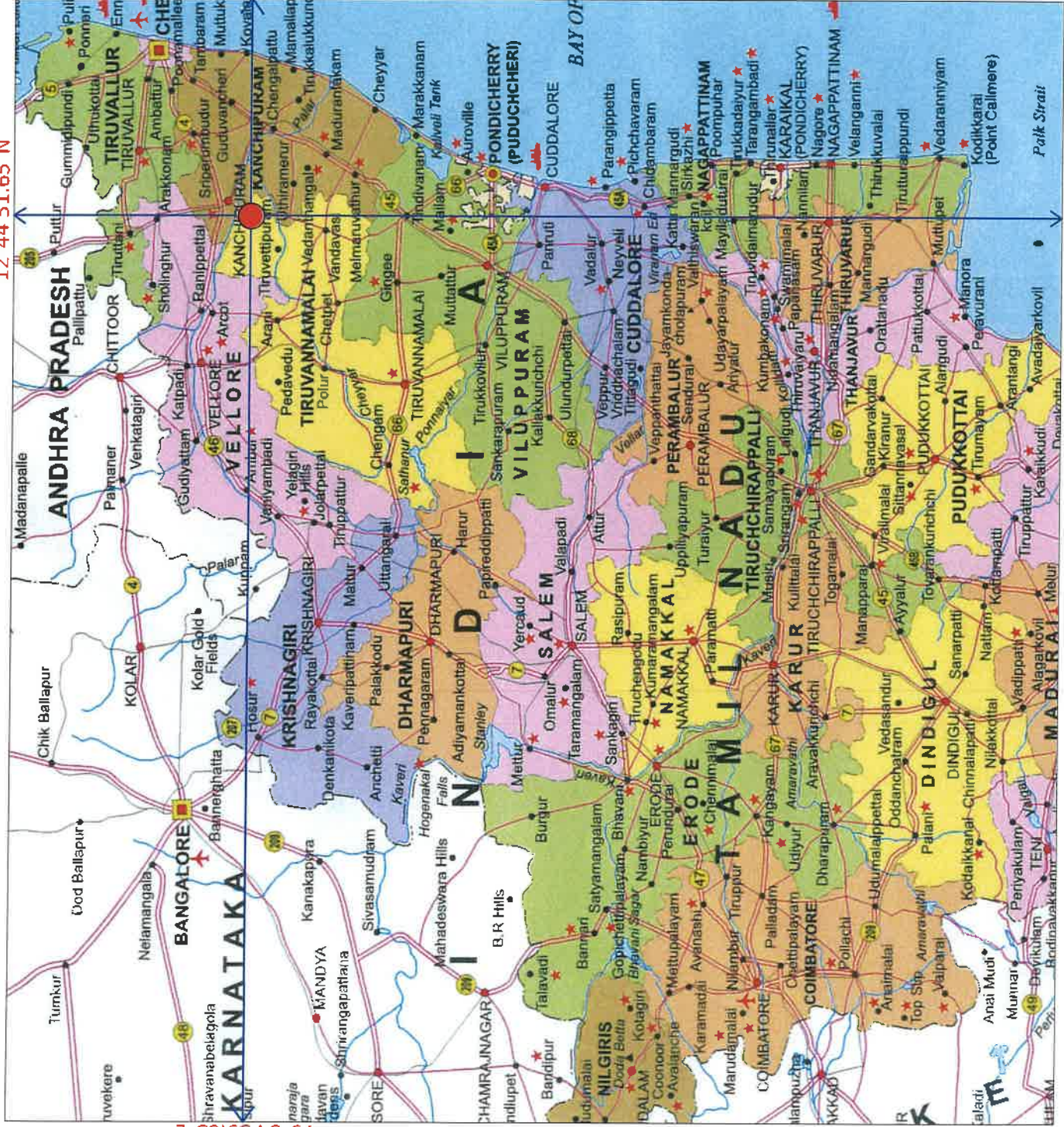


Faculty of Science

The Senate of the Annamalai University hereby makes known that B. Natarajan has been admitted to the Degree of Master of Science (by Examination) in Zoology, he having been certified by duly appointed Examiners at the examination held in April, 1976, to be qualified to receive the same and that he was placed in the First Class.

Given under the seal of the University.

12°44'51.65"N



79°35'03.47"E

12°44'44.41"N

PLATE NO: I

DATE OF SURVEY: 09.01.2025

APPLICANT:

TESS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4.40/2A2&129/4B1B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4

EXTENT : 2.06.5 Ha,

VILLAGE: KAGANAM,

TALUK : VEMBAKKAM,

DISTRICT : TIRUVANNAMALAI.

INDEX

Q. L. APPLIED. AREA

TOPO SHEET NO : 57 P / 10

LATITUDE : 12°44'44.41"N TO 12°44'51.65"N

LONGITUDE : 79°34'59.03"E TO 79°35'03.47"E

LOCATION PLAN

NOT TO SCALE

PREPARED BY :

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

C.NATARAJAN.M.Sc.M.Phil.,
QUALIFIED PERSON



PLATE NO: IA
DATE OF SURVEY : 09.01.2025

APPLICANT:

TVLSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/481B,
KAGANAM VILLAGE,VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4
EXTENT : 2.06.5 Ha.
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

INDEX

TOPO SHEET NO : 57 P/ 10

LATITUDE : 12°44'44.41"N TO 12°44'51.65"N

LONGITUDE : 79°34'59.03"E TO 79°35'03.47"E

Q.L.APPLIED AREA



300M RADIUS



500M RADIUS



1KM RADIUS



APPROACH ROAD



PANCHAYAT ROAD



BARREN LAND



TREES



SEASONAL AGRICULTURE



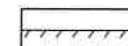
ODAI



TANK



QUARRY PIT



HABITATION



LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	05
TREES	08
BARREN LAND	54
AGRICUTURE LAND	12
HABITATIONS	06
WATER BODIES	15

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

C.NATARAJAN,M.Sc.M.Phil.,
QUALIFIED PERSON

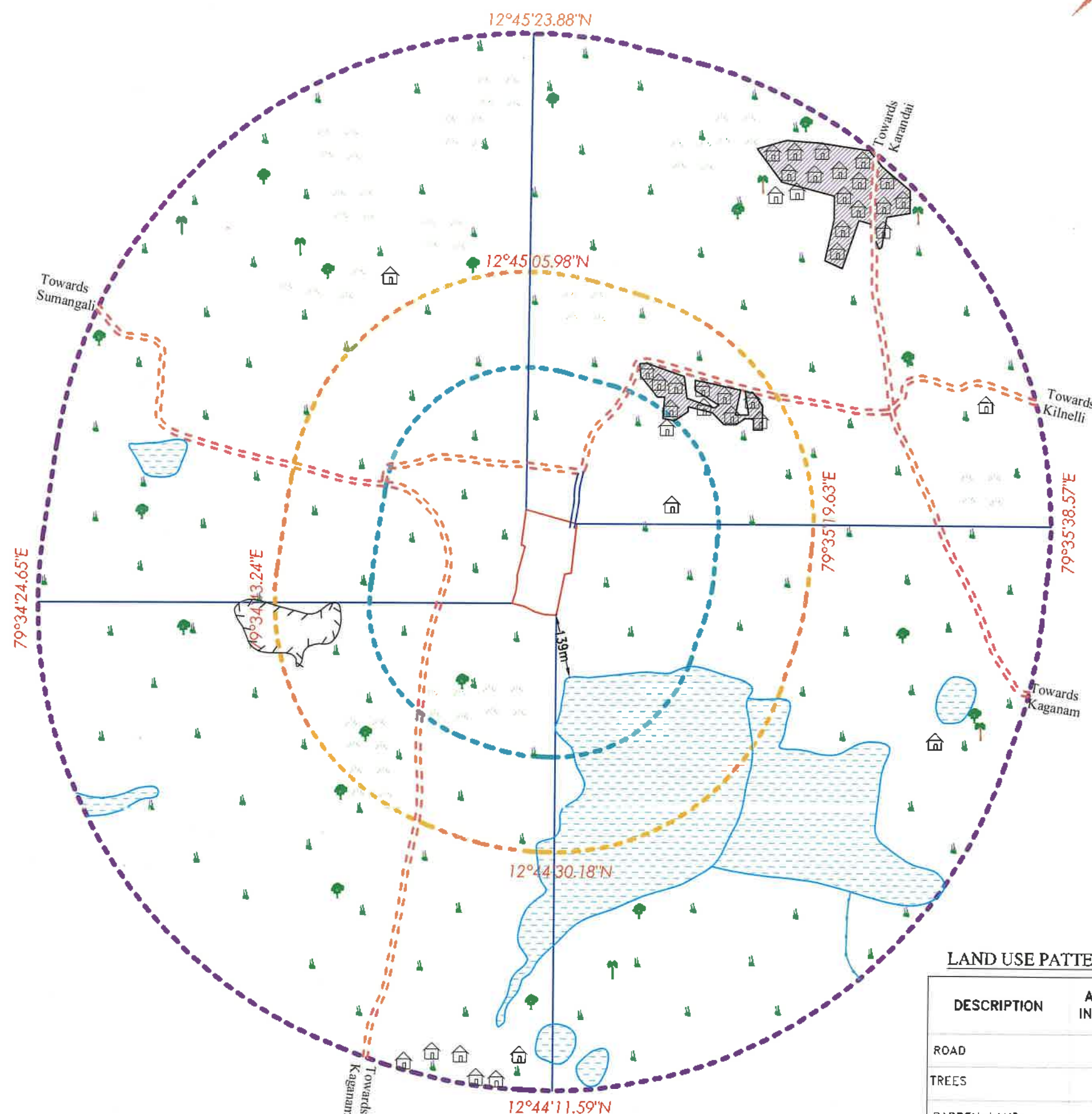




PLATE NO: IB
DATE OF SURVEY : 09.01.2025

APPLICANT:
T.V.S.S MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/481B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

INDEX
TOPO SHEET NO : 57 P / 10
LATITUDE : 12°44'44.41"N TO 12°44'51.65"N
LONGITUDE : 79°34'59.03"E TO 79°35'03.47"E

Q.L.APPLIED AREA	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
PANCHAYAT ROAD	

SATELLITE IMAGERY MAP

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

C.NATARAJAN, M.Sc., M.M.L.,
QUALIFIED PERSON



PLATE NO-I C
DATE OF SURVEY : 09.01.2025

APPLICANT:
TVLSSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4.40/2A2&129/481B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

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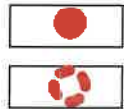
TOPO SHEET NO : 57 P/ 10

LATITUDE : 12°44'44.41"N TO 12°44'51.65"N

LONGITUDE : 79°34'59.03"E TO 79°35'03.47"E

Q.L.APPLIED AREA

10KM RADIUS



CONVENTIONAL SYMBOLS	
Boundaries, roads, railways, etc.	[Symbol]
Water bodies, tanks, etc.	[Symbol]
Buildings, etc.	[Symbol]
Vegetation, etc.	[Symbol]
Contours, etc.	[Symbol]
Spot heights, etc.	[Symbol]
Administrative boundaries, etc.	[Symbol]
Religious places, etc.	[Symbol]
Public buildings, etc.	[Symbol]
Industrial areas, etc.	[Symbol]
Power lines, etc.	[Symbol]
Communication lines, etc.	[Symbol]
Other features, etc.	[Symbol]

TOPO SKETCH OF QUARRY LEASE

APPLIED AREA FOR

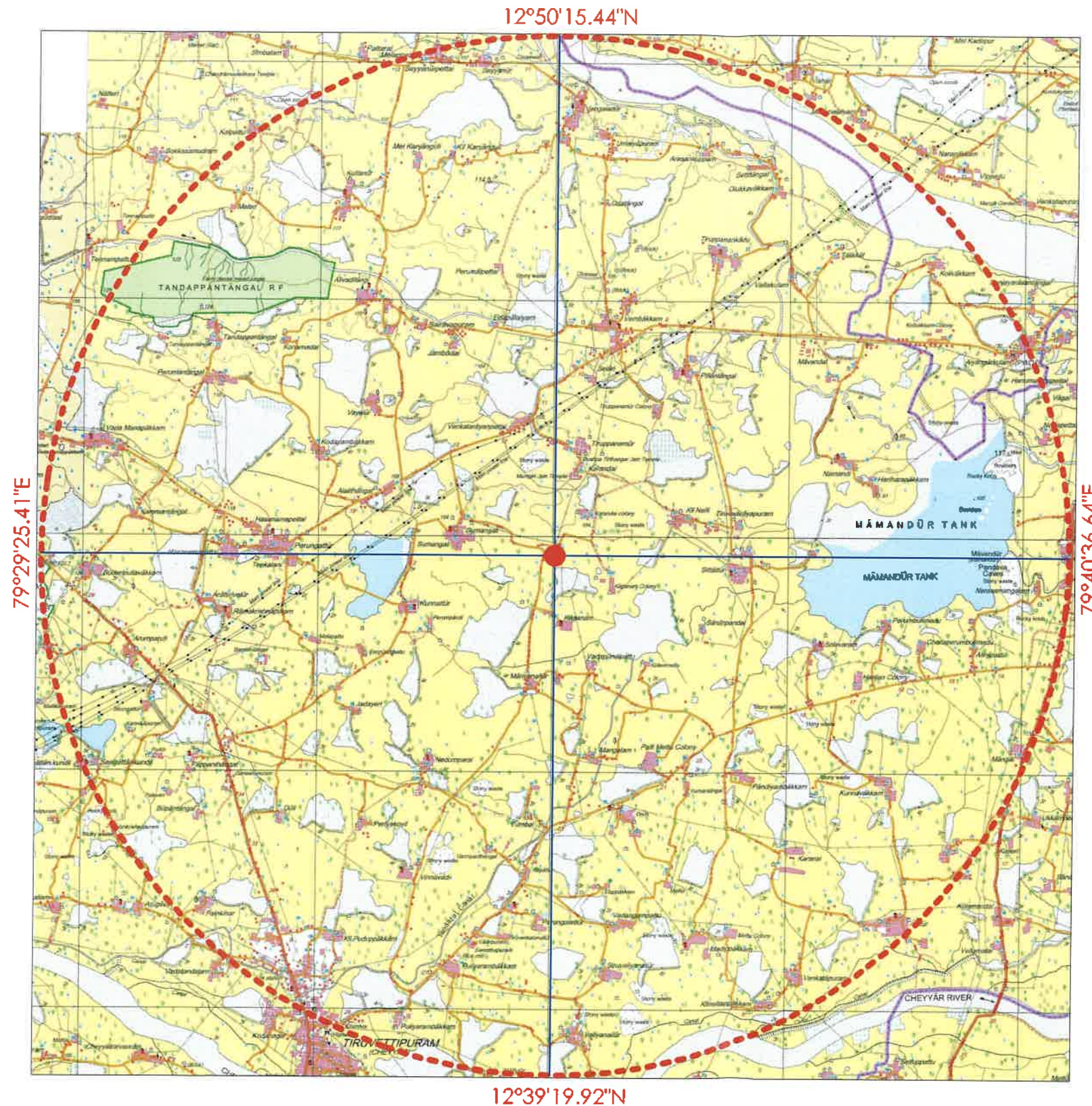
10Km RADIUS

SCALE- 1:100000

PREPARED BY:

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THE BEST OF MY KNOWLEDGE BASED UPON
THE LEASE MAP AUTHENTICATED BY STATE
GOVERNMENT

C. NATARAJAN, M.Sc., M.Phil.,
QUALIFIED PERSON



KEY PLAN

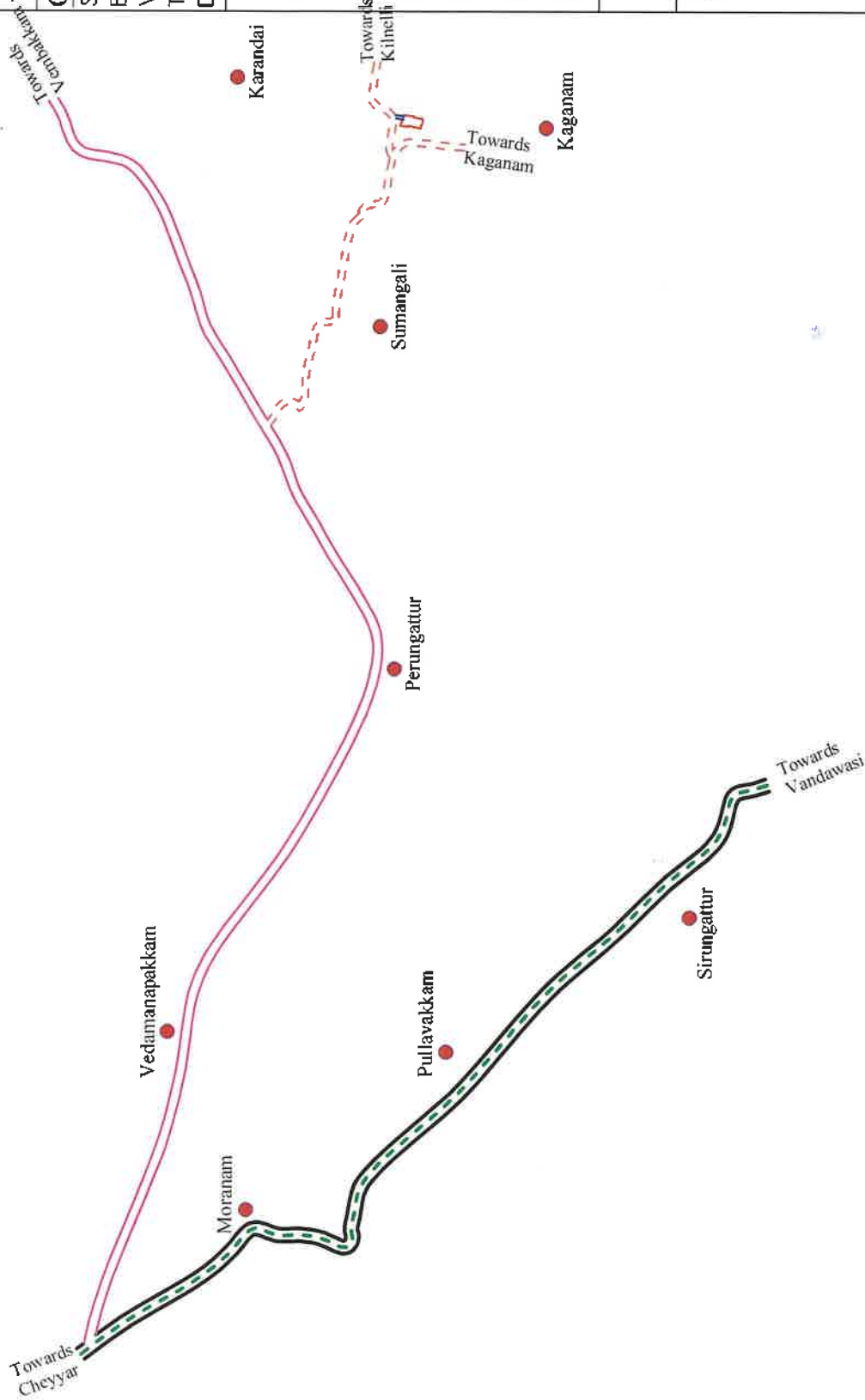


PLATE NO:ID

DATE OF SURVEY :09.01.2025

APPLICANT:

TV.SSS MINES,

PARTNER-THIRU.M.SIVAN

SF NO:39/4,40/2A2&129/4B1P

KAGANAM VILLAGE,VEMBAKKAM TALUK,

TIRUVANNAMALAI DISTRICT

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4

EXTENT : 2.06.5 Ha,

VILLAGE : KAGANAM,

TALUK : VEMBAKKAM,

DISTRICT : TIRUVANNAMALAI.

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Q.L.APPLIED AREA

APPROACH ROAD

PANCHAYAT ROAD

MAJOR DISTRICT ROAD

STATE HIGHWAY

HABITATIONS

KEY PLAN

Not To Scale

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THE LEASE MAP AUTHENTICATED BY STATE

GOVERNMENT

C. NATARAJAN

C.NATARAJAN.M.Sc,M.Phil.,

QUALIFIED PERSON

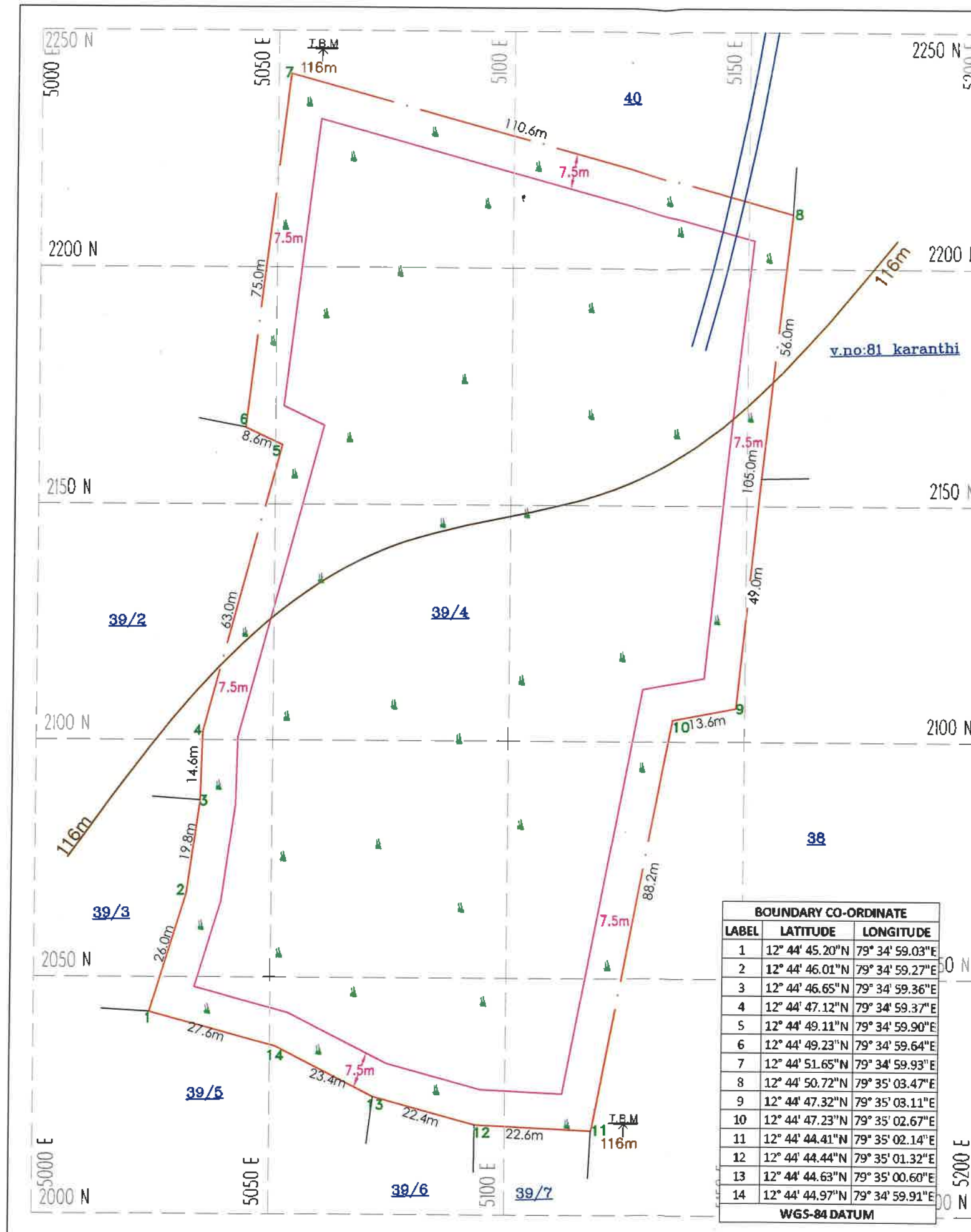


PLATE NO-II

DATE OF SURVEY : 09.01.2025

APPLICANT:

TVL SSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE,VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

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Q.L. APPLIED BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
CONTOUR	
SCRUB	

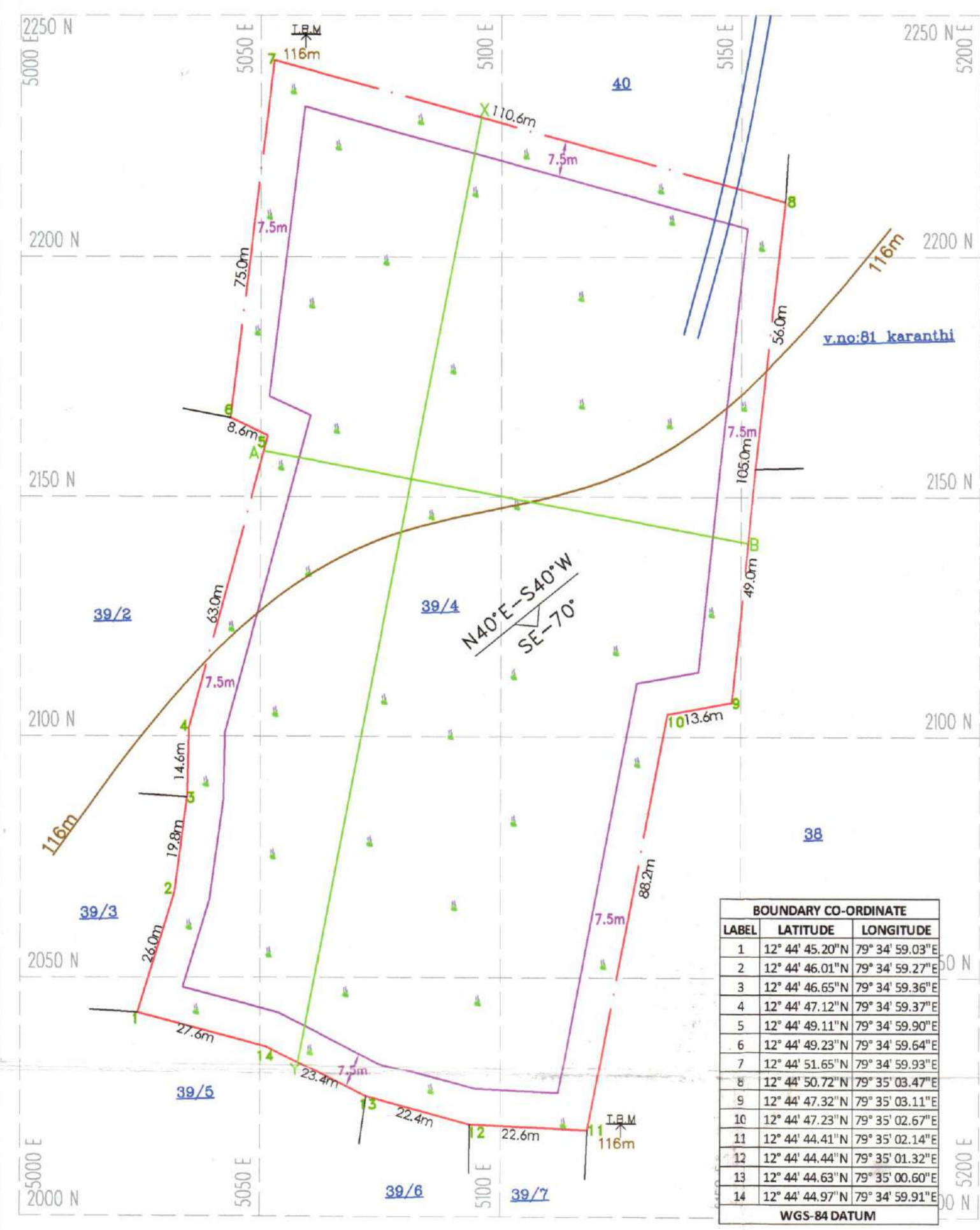
QUARRY LEASE & SURFACE PLAN

SCALE 1 : 1000

PREPARED BY:

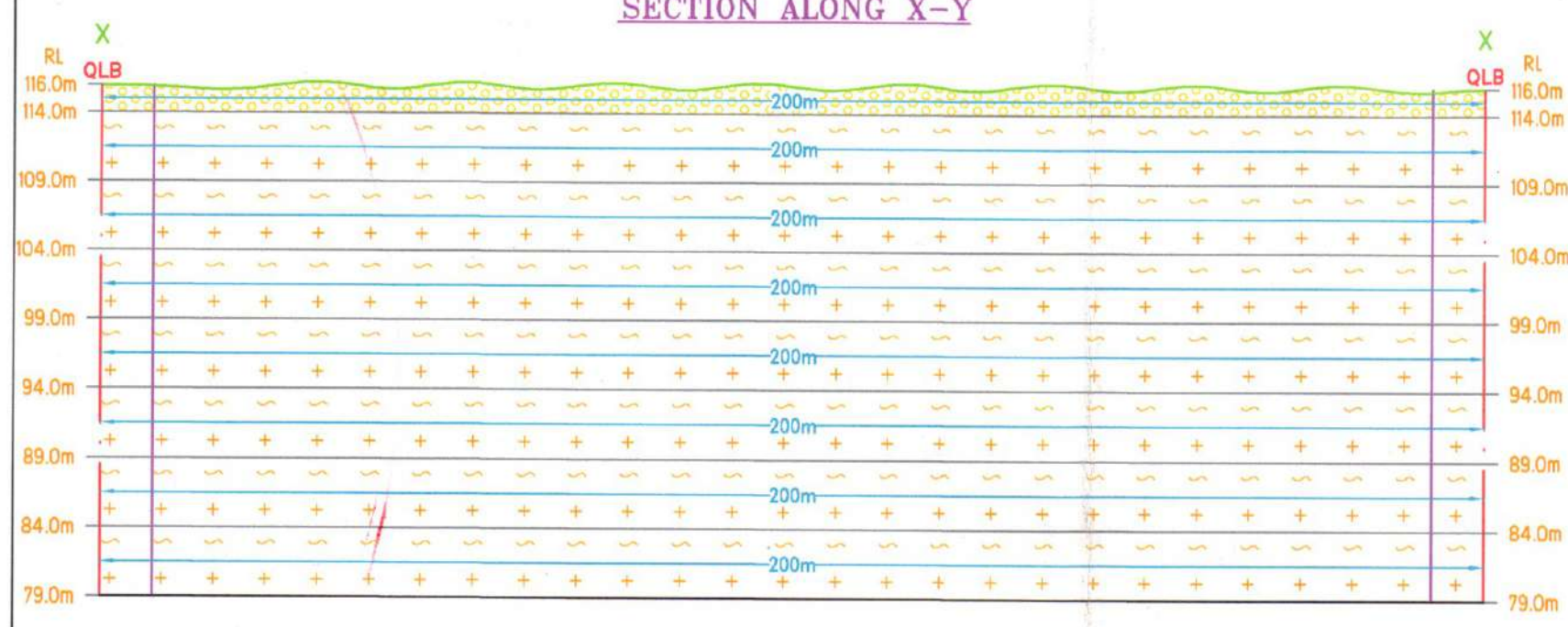
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GOVERNMENT

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON



BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 44' 45.20"N	79° 34' 59.03"E
2	12° 44' 46.01"N	79° 34' 59.27"E
3	12° 44' 46.65"N	79° 34' 59.36"E
4	12° 44' 47.12"N	79° 34' 59.37"E
5	12° 44' 49.11"N	79° 34' 59.90"E
6	12° 44' 49.23"N	79° 34' 59.64"E
7	12° 44' 51.65"N	79° 34' 59.93"E
8	12° 44' 50.72"N	79° 35' 03.47"E
9	12° 44' 47.32"N	79° 35' 03.11"E
10	12° 44' 47.23"N	79° 35' 02.67"E
11	12° 44' 44.41"N	79° 35' 02.14"E
12	12° 44' 44.44"N	79° 35' 01.32"E
13	12° 44' 44.63"N	79° 35' 00.60"E
14	12° 44' 44.97"N	79° 34' 59.91"E
WGS-84 DATUM		

SECTION ALONG X-Y



SECTION ALONG A-B

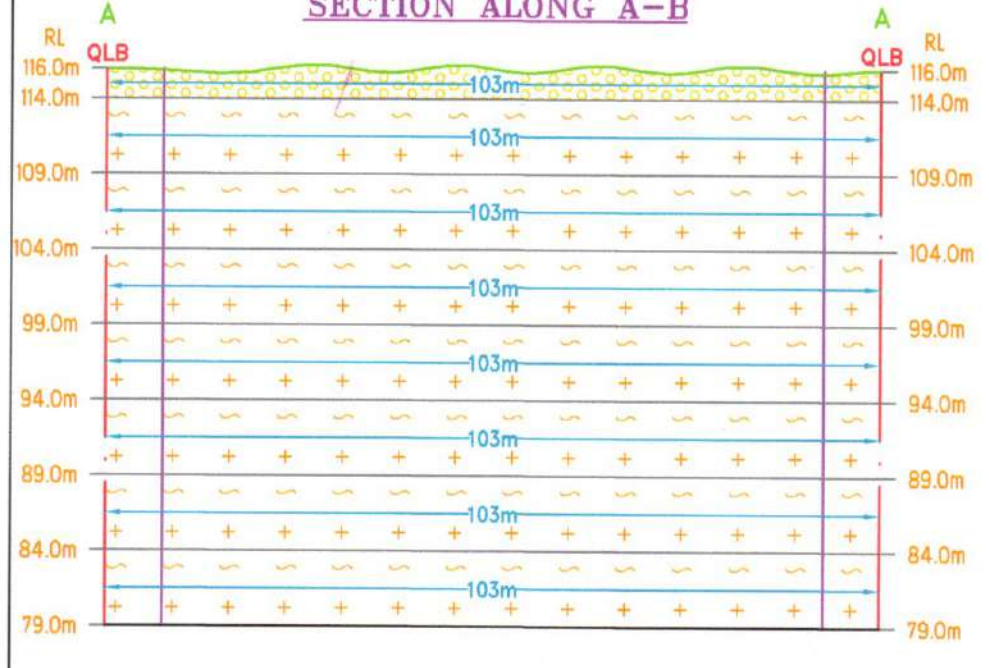


PLATE NO-III
DATE OF SURVEY :09.01.2025

APPLICANT:
T.V.S.S MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE,VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

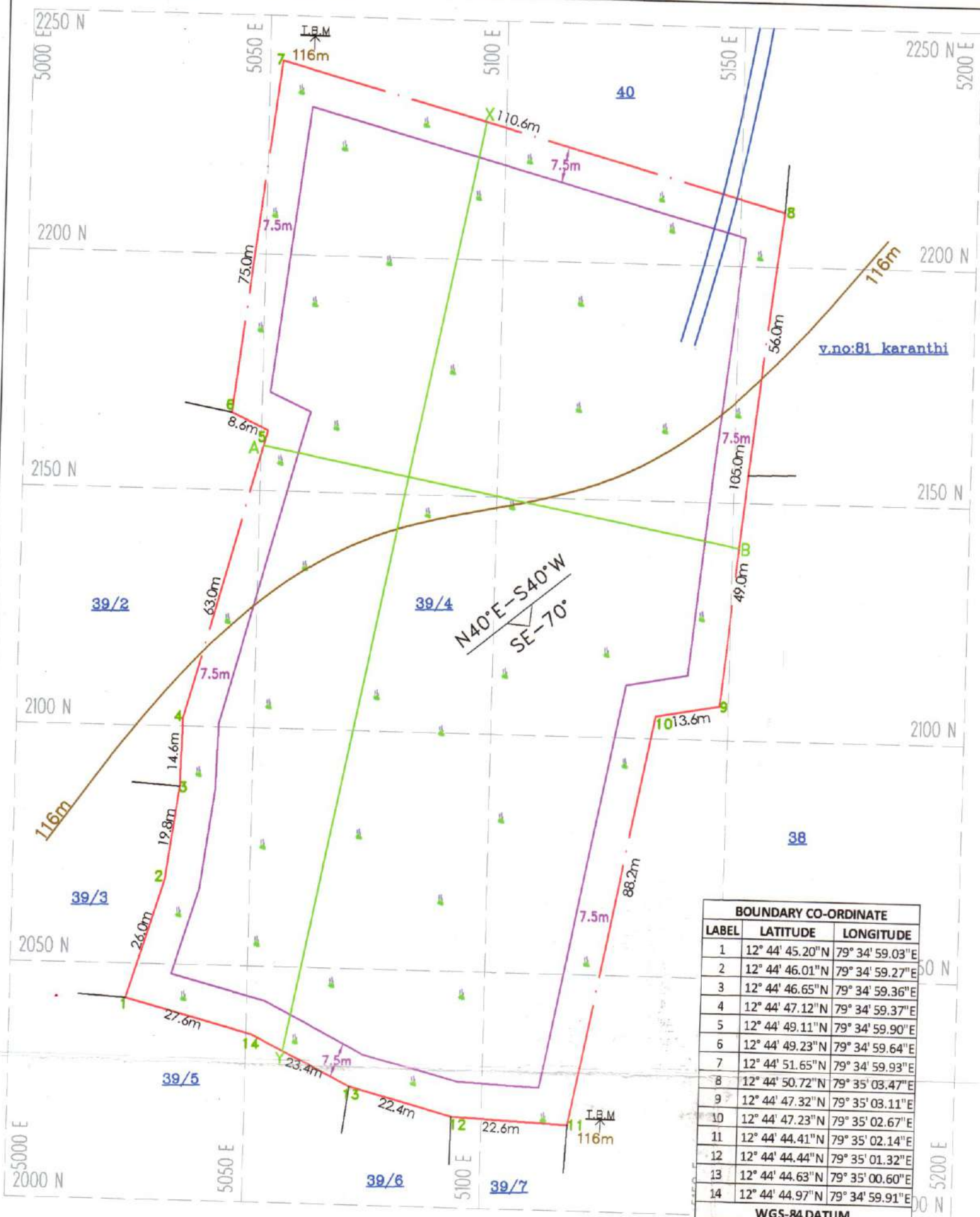
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Q.L. APPLIED BOUNDARY	
7.5m SAFETY DISTANCE	
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APPROACH ROAD	
CONTOUR	
SCRUB	
ROUGH STONE	
GRAVEL	
STRIKE & DIP	

TOPOGRAPHY, GEOLOGICAL PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

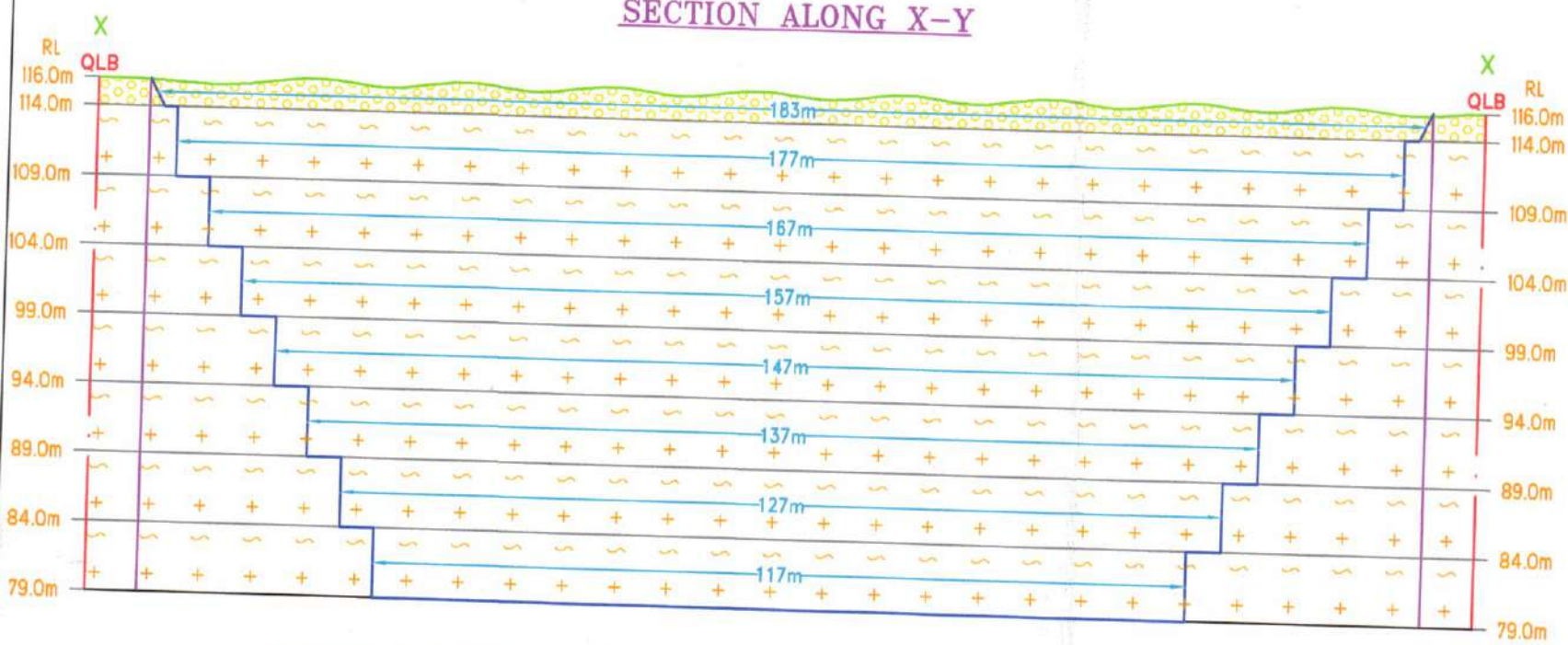
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GOVERNMENT

C.NATARAJAN,M.Sc,M.168,
QUALIFIED PERSON



BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 44' 45.20"N	79° 34' 59.03"E
2	12° 44' 46.01"N	79° 34' 59.27"E
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14	12° 44' 44.97"N	79° 34' 59.91"E
WGS-84 DATUM		

SECTION ALONG X-Y



SECTION ALONG A-B

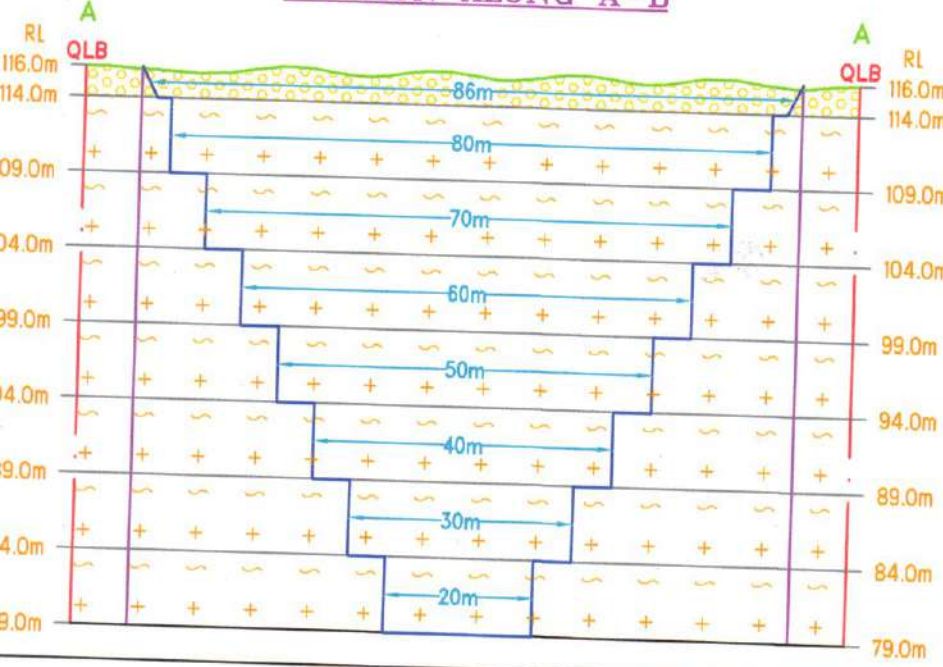


PLATE NO-IV

DATE OF SURVEY :09.01.2025

APPLICANT:

TVL.SSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

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- ROUGH STONE
- GRAVEL
- STRIKE & DIP

MINEABLE PLAN & SECTIONS

SCALE 1 : 1000

SECTIONS HOR 1:1000, VER 1:500

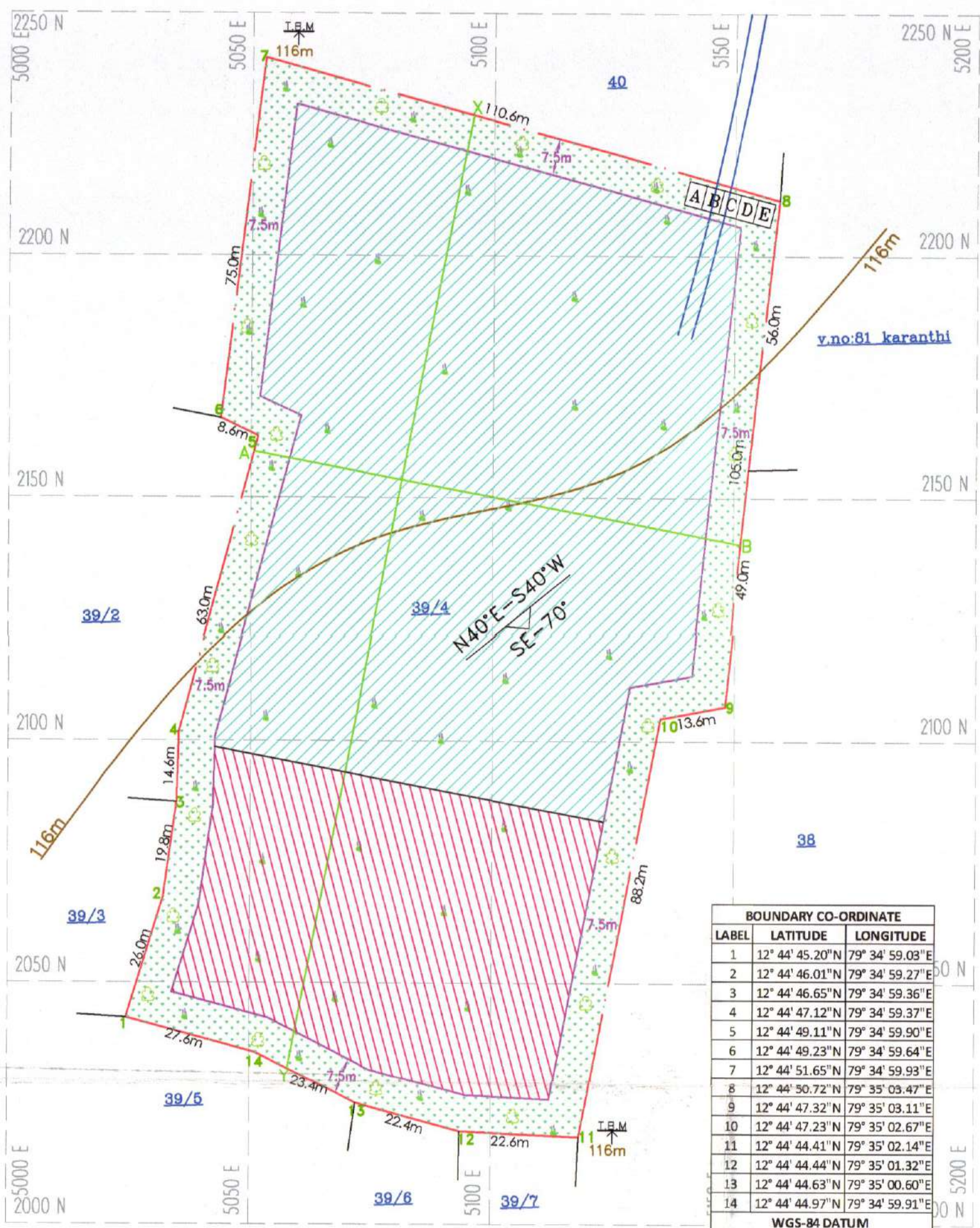
PREPARED BY:

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GOVERNMENT

C.NATARAJAN, M.Sc, M.Phil.,
QUALIFIED PERSON

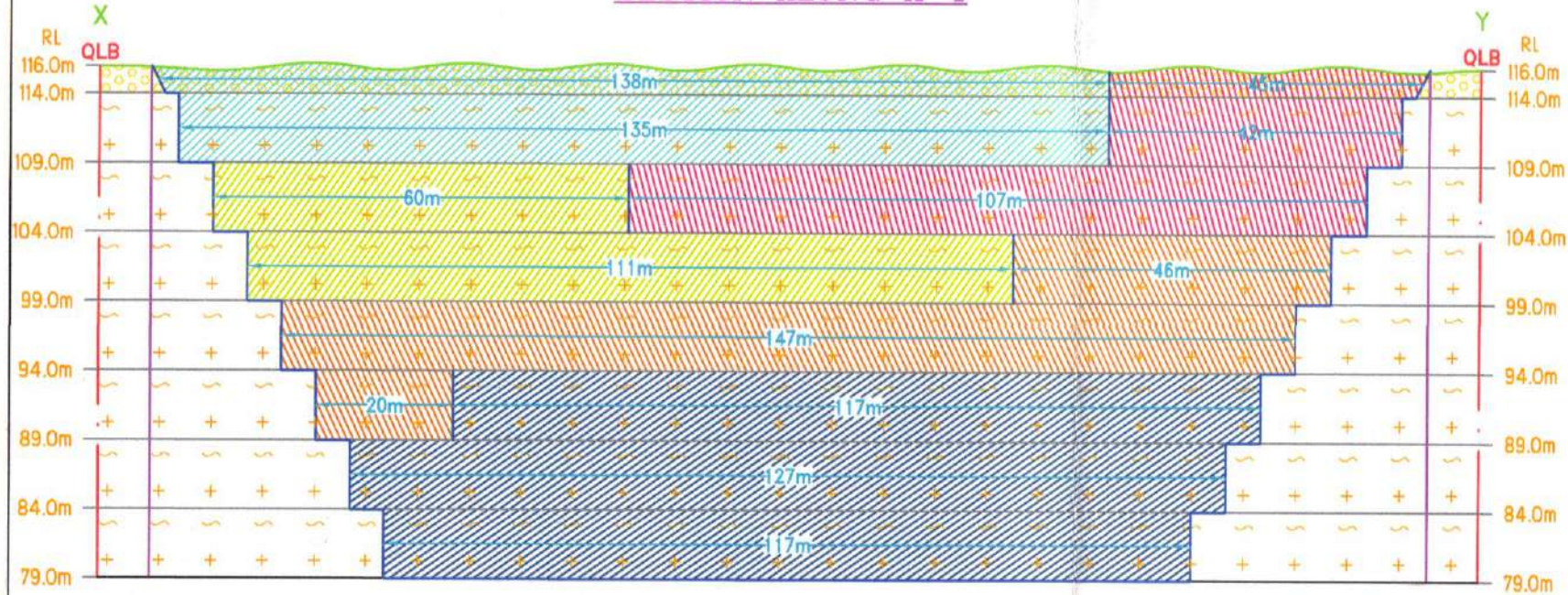


- PROPOSED SITE SERVICES**
- A - OFFICE
 - B - STORE ROOM
 - C - FIRST AID ROOM
 - D - REST SHELTER
 - E - TOILET

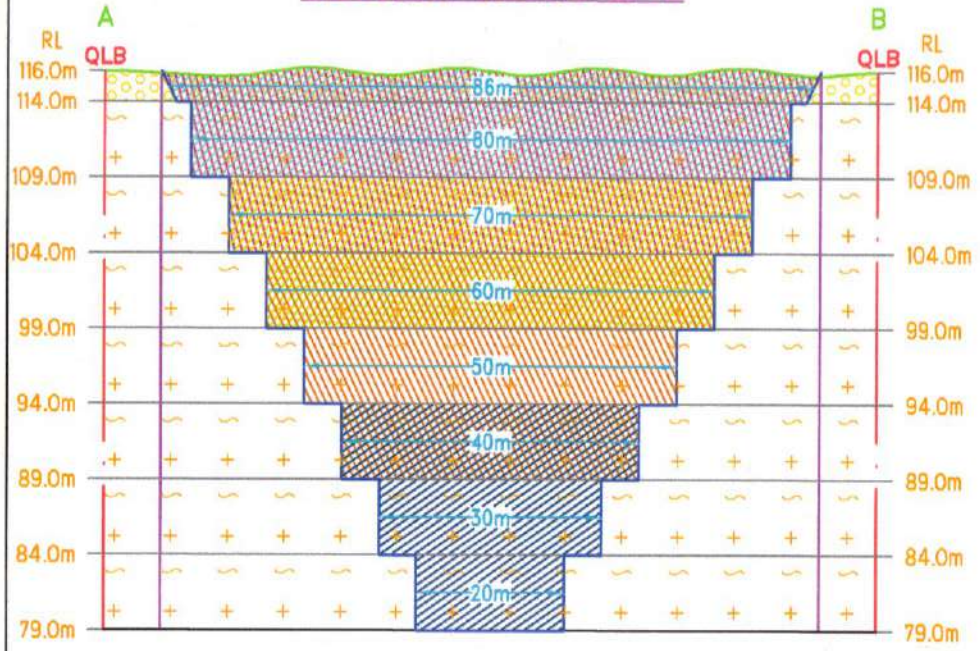


BOUNDARY CO-ORDINATE		
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14	12° 44' 44.97"N	79° 34' 59.91"E
WGS-84 DATUM		

SECTION ALONG X-Y



SECTION ALONG A-B



- Proposed area to be Planted**
- 1st yr Proposed area to be Quarried
 - 2nd yr Proposed area to be Quarried
 - 3rd yr Proposed area to be Quarried
 - 4th yr Proposed area to be Quarried
 - 5th yr Proposed area to be Quarried

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	NII	1.58.0
INFRASTRUCTURE	NII	0.01.0
ROADS	NII	0.01.0
GREEN BELT	NII	0.46.5
UN-UTILIZED AREA	2.06.5	NII
GRAND TOTAL	2.06.5	2.06.5

PLATE NO-V
DATE OF SURVEY :09.01.2025

APPLICANT:
TVLSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

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- APPROACH ROAD
- CONTOUR
- SCRUB
- ROUGH STONE
- GRAVEL
- STRIKE & DIP

YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:
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THE LEASE MAP AUTHENTICATED BY STATE
GOVERNMENT

C. Natarajan
C.NATARAJAN, M.Sc., 1701,
QUALIFIED PERSON



PROPOSED SITE SERVICES

- A - OFFICE
- B - STORE ROOM
- C - FIRST AID ROOM
- D - REST SHELTER
- E - TOILET

PLATE NO-VI

DATE OF SURVEY :09.01.2025

APPLICANT:

TVLSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE,VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

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- CONTOUR
- SCRUB
- ROUGH STONE
- GRAVEL
- STRIKE & DIP
- PROPOSED QUARRY PIT

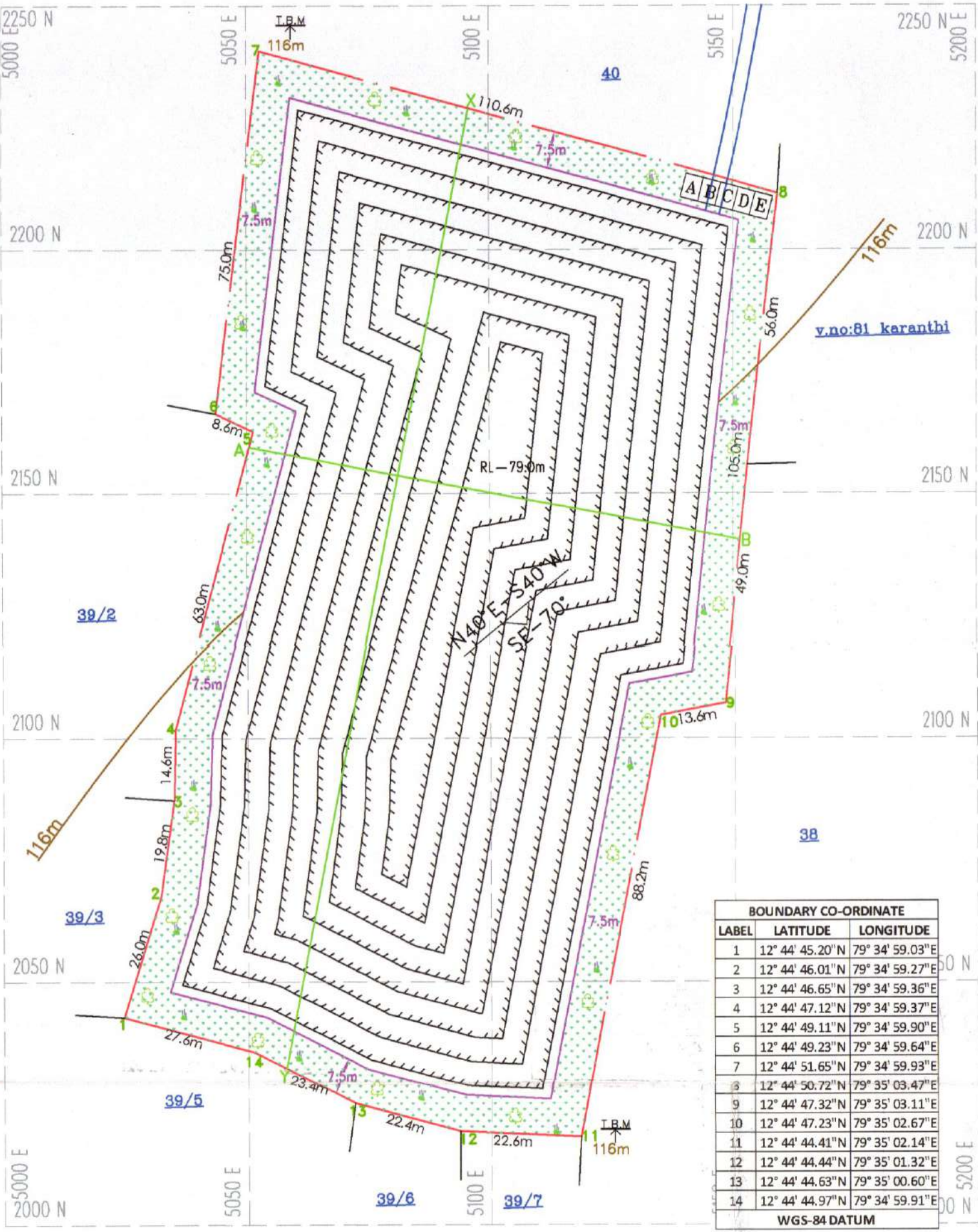
CONCEPTUAL & SECTIONS

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SECTIONS HOR 1:1000, VER 1:500

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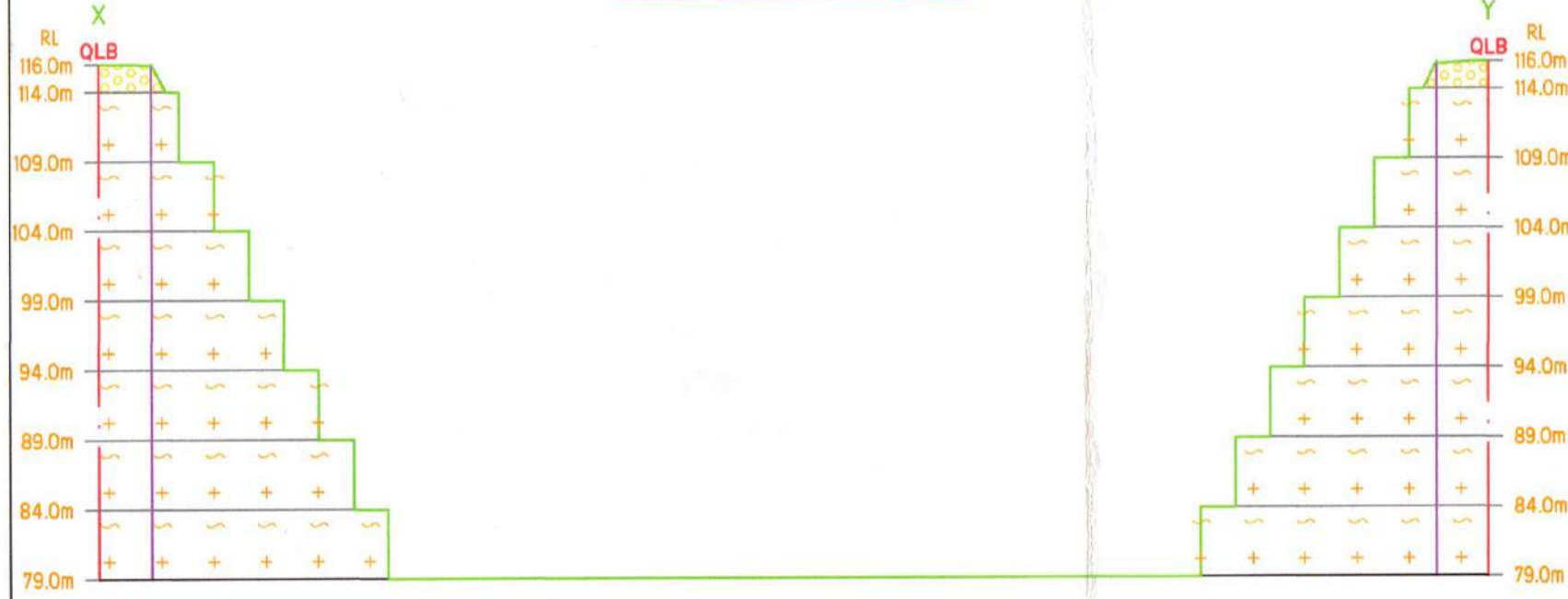
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QUALIFIED PERSON

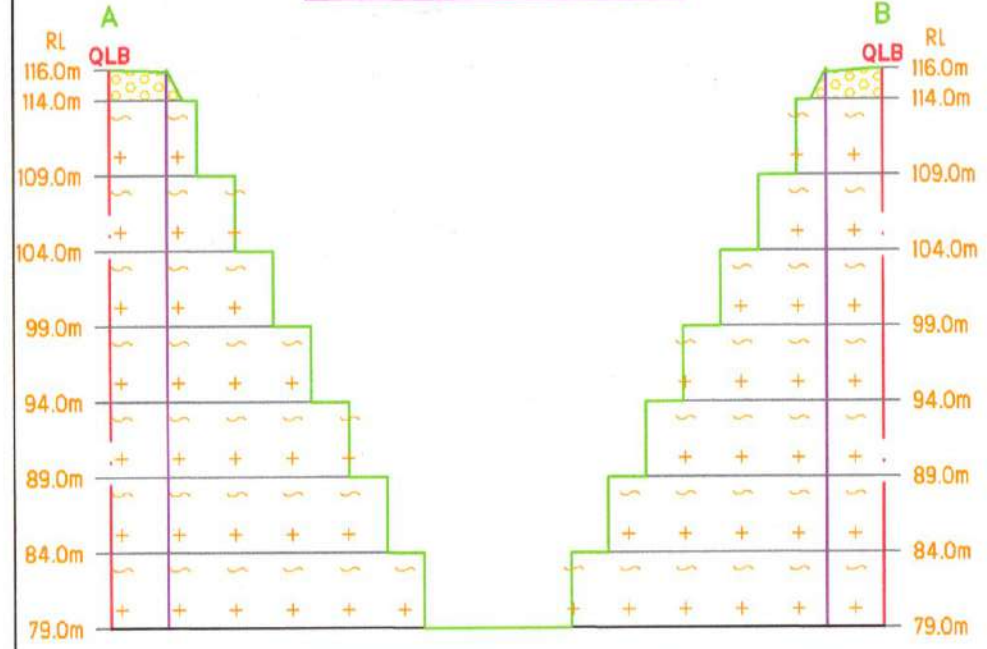


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13	12° 44' 44.63"N	79° 35' 00.60"E
14	12° 44' 44.97"N	79° 34' 59.91"E
WGS-84 DATUM		

SECTION ALONG X-Y



SECTION ALONG A-B



Proposed area to be Planted

ULTIMATE PIT DIMENSION OF END
OF THE QUARRY LEASE PERIOD
L183m(Max)XW86m(Avg)XD37m(Max)



ANNEXURE-4

From
Thiru.A.Arumuganainar, M.Sc.,
Joint Director (Addl., Ch.),
O/o. Assistant Director,
Geology and Mining,
Tiruvannamalai - 4.

To
Tvl.SSS Mines,
Partner Thiru.M.Siva,
S.F.No.39/4, 40/2A2 & 129/4B1B,
Kaganam Village,
Vembakkam Taluk,
Tiruvannamalai District.

Rc.No.263/Kanimam/2024, dated:24.01.2025.

Sir,

Sub: Quarries and Minerals – Minor Mineral - Rough stone and Gravel - Tiruvannamalai District – Vembakkam Taluk – Kaganam village Patta Land in SF.Nos.39/4 over an extent of 2.06.5 hecsts., – Application preferred by **Tvl.SSS Mines, Partner Thiru.M.Siva** - **Precise area communicated – Submission of three copies of draft Mining Plan for approval** - Approval accorded - regarding.

- Ref: 1. Application from Tvl.SSS Mines, Partner Thiru.M.Siva, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District dated:09.08.2024.
2. Precise Area Communication Notice Rc.No.263/ Kanimam/2024, dated 08.01.2025.
3. Mining Plan submitted by Tvl.SSS Mines, Partner Thiru.M.Siva, Tiruvannamalai District dated.21.01.2025

Tvl.SSS Mines, Partner Thiru.M.Siva, has preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 2.06.5 hecsts., of Patta land in SF.No.39/4 of Kaganam Village, Vembakkam Taluk, Tiruvannamalai District for a period of 5 years vide the reference 1st cited and the precise area has been communicated to the applicant vide the reference 2nd cited with a direction to submit the approved mining plan and Environmental Clearance.

2. As directed, the applicant has submitted three copies of mining plan for approval vide the reference 3rd cited. The Mining Plan has been verified in detail and found that it has been prepared in

accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

i) The reserves estimated in the mining plan is

Depth in Mts.	37m (2m Gravel + 35m Rough Stone)
Geological Resources	Rough Stone : 7,21,000
	Gravel : 41,200
Mineable Reserve	Rough Stone : 2,71,250
	Gravel : 31,476

3. Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, the mining plan is hereby approved, subject to the following conditions:

- i. The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- ii. This approval of the mining plan does not in any way convey the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iii. The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- iv. The validity of the mining plan is co-terminus with the lease period.
- v. Quarrying shall be done in accordance with the approved Mining Plan.
- vi. If anything is found to be concealed in the contents of the mining plan which are required by the mines act or if any proposed for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- vii. The applicant should leave 50m safety distance for low tension power line passing on Western side of lease area in

North-South direction or with the previous written permission of the officers authorised by the State Government in this behalf and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.

- viii. The applicant should leave 50m safety distance for low tension power line passing on Northern side of lease area in East-West direction or with the previous written permission of the officers authorised by the State Government in this behalf and subjected to the instruction, restriction and condition prescribed therein or Low tension power line should be shifted 50m away from the lease applied area.
- ix. The safety distance of 7.5m to the adjacent patta lands and 10m to the Government lands should be provided.
- x. The applicant should not cause any hindrance to adjacent lands and public while quarrying operation.
- xi. Barbed wire fencing should be erected all along the boundary of the lease granted area before quarrying operation.
- xii. The quarry operation should be carried out by systematic and scientific manner.
- xiii. The quarry operation should be carried out with the certified Mine Manager, Foreman and Blaster.
- xiv. The applicant should inform to the Director of Mine Safety, Chennai before commencement of quarry operation vide opening notice.
- xv. The applicant should follow the guidelines under Rules 36(1-A)(b) of Tamil Nadu Minor Mineral Concession Rules, 1959 for removing the Rocks.

4. Further, other quarries situated within 500m radial distance are as follows.

i) Existing Quarries

Sl. No.	Name of the Owner	Village & S.F. Nos.	Extent in Hects.	Lease Period	Remarks
1.	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram.	Kaganam 58/1A ,1B,2A , 2B , 3 , 6 , 7 , 8A , 8B, 59/2A , 61/1B, 2A , 2B, 3 , 4A , 5A & 6	4.42.0	10-06-2024 to 09-06-2029	Rough Stone quarry

2	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	Kaganam 38/1, 2, 39/5, 6, 7 48/17,18, 19, 20, 426/2 & 426/3	4.18.0	20-09-2021 to 19-09-2031	Rough Stone quarry

ii) Abandoned quarries

Sl. No.	Name of the Owner	Village & S.F. Nos.	Extent in Hects.	Lease Period	Remarks
1	Thiru.S.SRIDHAR, S/o. T. Sivaprakasam, Managing Director,' SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram- 635 501.	Kaganam 44/11,58/7,5A,60 /2,58/5B,59/1A,1 B,2B,60/3,5,6 & 7	3.96.5	17-09-2018 to 16-09-2023	Rough Stone Expired quarry

iii) Present Proposed Quarries

Sl. No	Name of the Owner	Village & S.F. Nos.	Extent in Hects.
1	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.	Kaganam 39/4	2.06.5
2.	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	Kaganam 44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/4B1, 61/4B2, 61/5B, 61/7, 62, 63/1 & 63/2	4.85.5

Encl: 2 Copies of Approved Mining Plan.

Joint Director (Addl. Ch.),
Geology and Mining,
Tiruvannamalai.

Copy submitted to:

1. The Chairman, SEIAA,
Tamil Nadu, 3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet, Chennai-15.
2. The Commissioner of Geology and Mining, Chennai-32.
3. The District Collector, Tiruvannamalai.



ANNEXURE-5

TOPOGRAPHICAL VIEW KAKANAM ROGH

STONE QUARRY



NAME OF THE APPLICANT : M.SIVA (PARTNER)

DISTRICT : TIRUVANNAMALAI

TALUK : VEMBAKKAM

VILLAGE : KAKANAM

S.F.NO : 39/4

EXTENT : 2.06Ha 2.06.5 Ha

PLACE:

DATE:

VAO SIG & SEAL
கிராம நிர்வாக அலுவலர்,
38, காகனம் கிராமம்,
39, கரந்தை கிராமம்,
வெம்பாக்கம் வட்டம், தி.மலை. மாவட்டம்.

M. Siva

திருவள்ளூர் மாவட்டம், திருவள்ளூர் தாலுகா,

த. 38. திருவள்ளூர் தாலுகா, திருவள்ளூர் - 38/4 -

2.06.5 திருவள்ளூர் (1358) மதுவாசல - புதிய

தாலுகா தலைவரின் திருவள்ளூர் தாலுகா தாலுகா

திருவள்ளூர் தாலுகா திருவள்ளூர் (1358) தாலுகா தாலுகா,

திருவள்ளூர் தாலுகா, திருவள்ளூர் தாலுகா, திருவள்ளூர் தாலுகா

திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா

திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா

திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா

திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா

திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா

திருவள்ளூர்
திருவள்ளூர் தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா தாலுகா
38, காகனம் திருவள்ளூர்,
39, கரந்தை திருவள்ளூர்,
வெம்பாக்கம் வட்டம், திருவள்ளூர், மாவட்டம்.

M. S.



ANNEXURE-6

District : Tiruvannamalai

Taluk : Vembakkam

Village : Kaganam

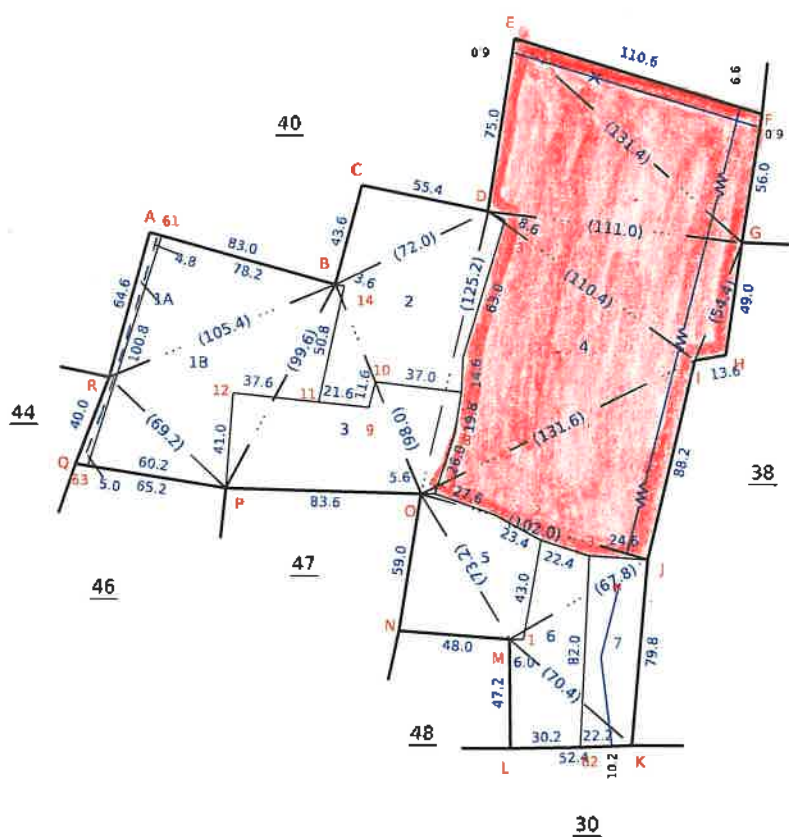
[82]



Survey No : 39

Area : Hect 04 Ares 45.50

Scale : 1 : 2078



V.NO:81KARANTHI

LEASE APPLIED AREA



Date of Issue: 13-01-2025 11:56:15

Signed By Tahsildar
 Name of approver : tahv
 Date of Approval : 15-06-2017



தலை: ம் திருவள்ளூர்

அமை: தலைவன்

பெட்டி/பெட்டி 129, 40, 89

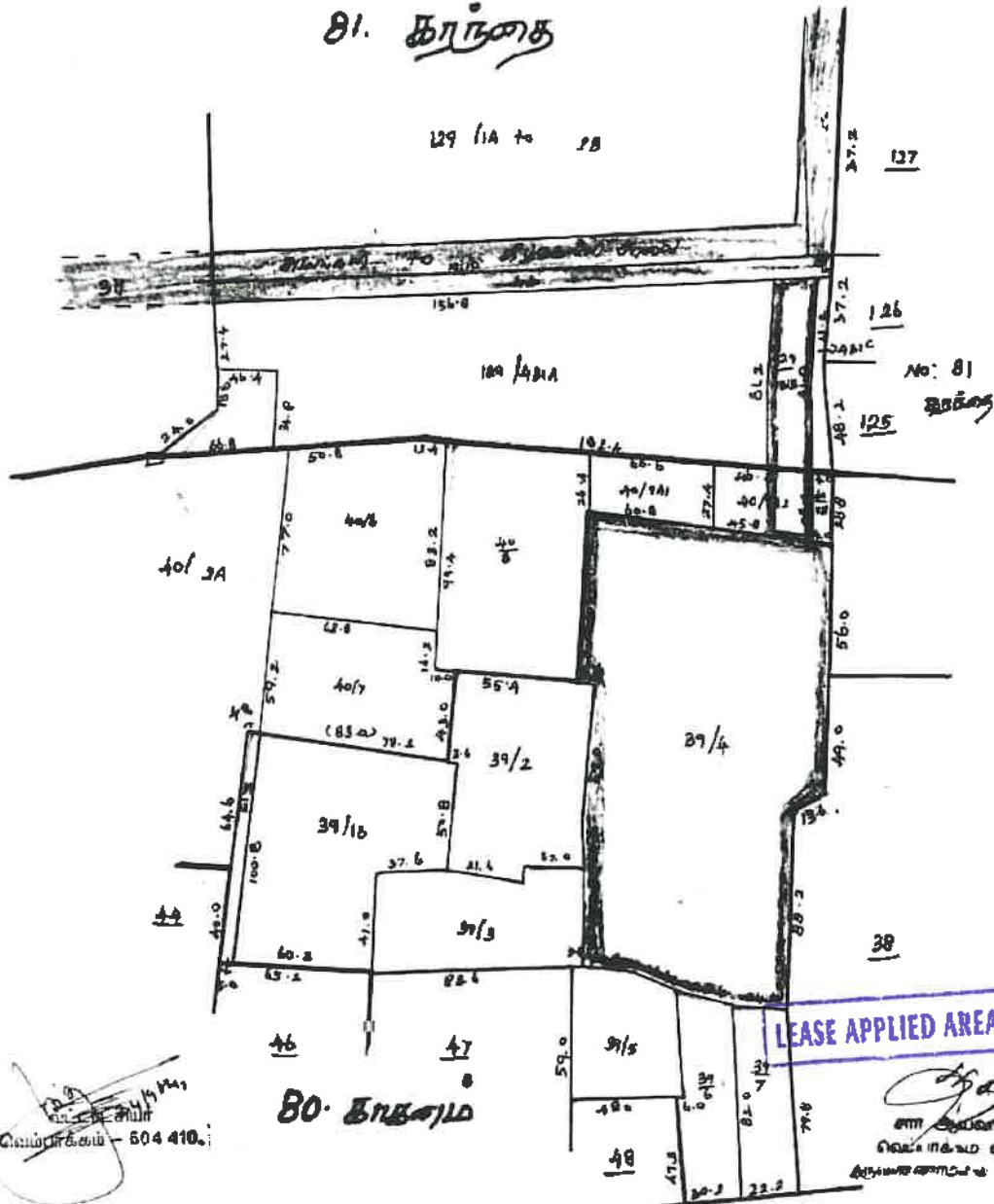
தலை பெட்டி தலைவன்

ANNEXURE



- ☐ 1) தலைவன் தலைவன் தலைவன் தலைவன்
தலைவன் 39/4 பெட்டி 1.065 பெட்டி
- ☐ 2) தலைவன் தலைவன் தலைவன் தலைவன்
தலைவன் 129/40B, 40/9A1
- ☐ 3) தலைவன் தலைவன் தலைவன் தலைவன்

81. தலைவன்



80. தலைவன்

Not to scale



தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருவண்ணாமலை

வட்டம் : வெம்பாக்கம்

வருவாய் பிராமம் : காசனம்

பட்டா எண் : 1358

உரிமையாளர்கள் பெயர்

1. ... எஸ்எஸ்எஸ் எம்என்ஸ் நிறுவனம்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
39	4	2 - 6.50	5.41	--	--	--	--	2024/0103/06/426811- .. 02-08-2024
		2 - 6.50	5.41					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து
- பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 06/10/082/01358/70287 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
 - இத் தகவல்கள் 05-08-2024 அன்று 03:13:20 PM நேரத்தில் அச்சடிக்கப்பட்டது.
 - கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



● 附錄 1 附錄 2

Village

Kaganam



மொத்தம்	15.50



ANNEXURE-7



Shrient Analytical and Research Labs Pvt. Ltd

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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4975	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4975	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	03.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT

Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 1 of 14



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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4976	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

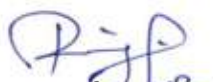
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4976	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	03.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/24/4977	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

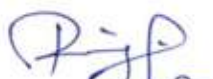
Sample Location	A1- WITHIN MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4977	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	04.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.6\	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/4978	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4978	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	04.12.2024	Test Completed on	16.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
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TEST REPORT

Report No.	SARL/24/4979	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

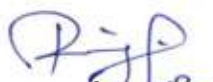
Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4979	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	05.12.2024	Test Completed on	16.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/4980	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4980	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	05.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/4981	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4981	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	06.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/4982	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4982	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	06.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/4983	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4983	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/4984	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4984	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/4985	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4985	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/4986	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4986	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/4987	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4987	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/4988	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4988	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5029	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5029	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/5030	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5031	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5031	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5031	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5032	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

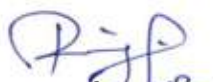
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5032	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5033	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5033	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/5034	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5034	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

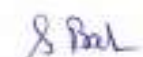
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/24/5035	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

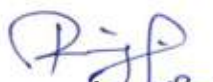
Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5035	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	12.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5036	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

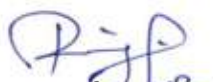
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5036	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	12.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/5037	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5037	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	13.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

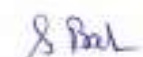
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


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TEST REPORT

Report No.	SARL/24/5038	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5038	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	13.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/5039	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5039	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	14.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5040	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5040	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	14.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5041	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5041	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	15.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

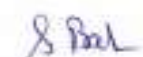
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/5042	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

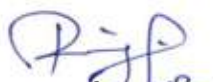
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5042	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	15.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5084	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5084	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	17.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

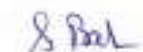
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R



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TEST REPORT

Report No.	SARL/24/5085	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

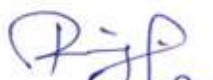
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5085	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	17.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5086	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5086	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	18.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5087	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5087	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	18.12.2024	Test Completed on	30.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/24/5088	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

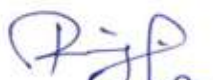
Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5088	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	19.12.2024	Test Completed on	30.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/24/5089	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5089	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	19.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5090	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5090	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	20.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5091	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5091	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	20.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5092	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

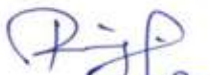
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5092	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

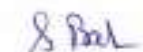
S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/24/5093	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5093	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5094	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5094	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5095	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5095	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/24/5096	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5096	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
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TEST REPORT

Report No.	SARL/24/5097	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5097	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	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/m ³	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0292	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0292	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0293	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0293	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0294	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0294	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0295	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

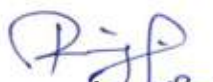
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0295	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0296	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0296	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0297	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0297	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0298	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0298	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	26.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0299	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0299	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	26.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	38.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	17.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0300	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0300	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	27.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0301	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

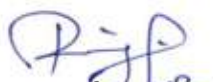
Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0301	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	27.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	40.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0302	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0302	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	28.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0303	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0303	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	28.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0304	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0304	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	29.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	67.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0305	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

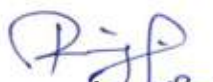
Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0305	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	29.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0360	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0360	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	31.12.2024	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0361	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0361	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	31.12.2024	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

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TEST REPORT

Report No.	SARL/25/0362	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0362	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	01.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0363	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0363	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	01.01.2025	Test Completed on	13.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AA YCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0364	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0364	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	02.01.2025	Test Completed on	13.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0365	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0365	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	02.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0366	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-00366	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	03.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0367	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0367	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	03.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

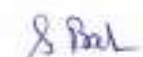
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

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TEST REPORT

Report No.	SARL/25/0368	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0368	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0369	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0369	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0370	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0370	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/25/0371	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

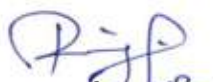
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0371	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0372	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0372	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0373	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0373	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0414	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0414	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0415	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0415	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0416	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0416	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

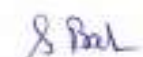
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0417	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0417	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0418	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0418	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0419	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0419	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT

Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/25/0420	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0420	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	09.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0421	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

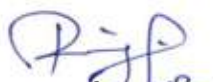
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0421	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	09.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0422	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0422	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	10.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0423	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

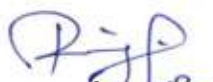
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0423	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	10.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0424	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0424	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	11.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0425	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0425	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	11.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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



END OF THE REPORT

Authorized Signatory
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TEST REPORT

Report No.	SARL/25/0426	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0426	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	12.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0427	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0427	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	12.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0468	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0468	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	14.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0469	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

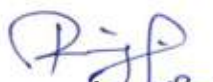
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0469	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	14.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0470	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0470	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	15.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	61.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0471	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0471	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	15.01.2025	Test Completed on	27.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0472

Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

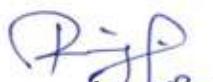
Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0472	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	16.01.2025	Test Completed on	27.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0473	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0473	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	16.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

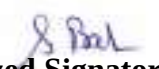
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0474	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0474	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	17.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0475	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0475	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	17.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0476	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0476	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0477	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0477	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0478	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0478	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0479	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0479	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0480	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0480	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0481	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0481	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0522	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0522	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0523	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0523	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0524	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0524	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	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/m ³	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

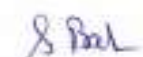
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


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S. BALAMURUGAN
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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0525	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

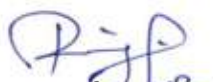
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0525	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/25/0526	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0526	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0527	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0527	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0528	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0528	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	23.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0529	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

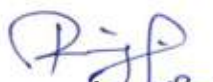
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0529	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	23.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.3	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/m ³	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0530	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0530	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	24.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0531	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

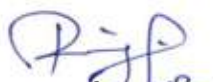
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0531	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	24.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
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TEST REPORT

Report No.	SARL/25/0532	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0532	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	25.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0533	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0533	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	25.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0534	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0534	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	27.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

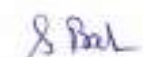
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0535	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

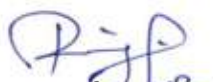
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0535	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	27.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0576	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0576	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	28.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0577	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0577	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	28.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0578	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0578	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	29.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0579	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0579	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	29.01.2025	Test Completed on	10.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

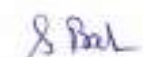
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0580	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0580	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	30.01.2025	Test Completed on	10.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0581	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0581	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	30.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0582	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0582	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	31.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0583	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0583	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	31.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0584	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0584	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0585	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0585	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0586	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0586	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

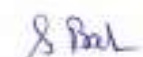
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0587	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0587	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0588	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0588	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0589	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0589	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0630	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0630	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.4	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/m ³	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0631	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0631	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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416/15, Dhargas Road, West Tambaram, Chennai- 600045

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TEST REPORT

Report No.	SARL/25/0632	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0632	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0633	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

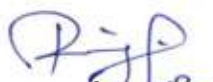
Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0633	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0634	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0634	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

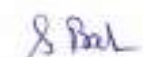
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

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TEST REPORT

Report No.	SARL/25/0635	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0635	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0636	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0636	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	06.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	40.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0637	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

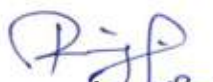
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0637	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	06.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0638	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0638	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	07.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0639	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0639	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	07.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0640	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

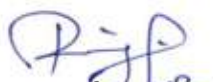
Sample Location	A1-Within Mine Lease Area
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0640	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	08.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0641	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0641	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	08.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

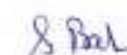
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0642	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0642	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	09.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0643	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0643	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	09.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0684	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0684	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	11.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0685	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

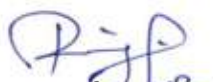
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0685	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	11.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0686	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0686	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	12.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0687	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0687	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	12.02.2025	Test Completed on	24.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0688	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

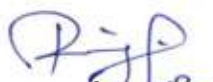
Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0688	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	13.02.2025	Test Completed on	24.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	40.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0689	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0689	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	13.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0690	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0690	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	14.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0691	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0691	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	14.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0692	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0692	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0693	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0693	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0694	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0694	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0695	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0695	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0696	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0696	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0697	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0697	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

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TEST REPORT

Report No.	SARL/25/0770	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0770	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



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TEST REPORT

Report No.	SARL/25/0771	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0771	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0772	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0772	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0773	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Kelneli Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0773	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0774	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Mariyanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0774	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0775	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Perumpandi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0775	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0776	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0776	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	20.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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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S. BALAMURUGAN
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TEST REPORT

Report No.	SARL/25/0777	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0746	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	20.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0778	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Sumangali Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0778	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	21.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0779	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

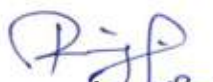
Sample Location	A4-Karandai Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0779	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	21.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0780	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0780	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	22.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	61.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0781	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0781	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	22.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0782	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
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	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0782	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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/25/0783	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

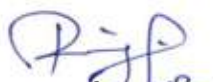
Sample Location	A2-Vadapoondipattu Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0783	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	-

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
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0784

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W1-Within Mine Lease Area

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0784	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.59	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	783.2	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	470	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	293	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	62.0	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	32.9	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	155	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	137	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	279	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	96.9	1000



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TEST REPORT

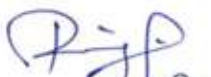
Report No.	SARL/25/0784

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
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 SO ₄ ²⁻ E: 2023	mg/L	64.5	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	2.75	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.35	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0785

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W2-Vadapoondipattu Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0785	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.32	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1208	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	726	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	426	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	36.2	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	275	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	151	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	256	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	212	1000



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TEST REPORT

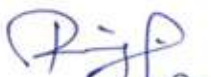
Report No.	SARL/25/0785

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	169	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.07	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.11	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.58	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0786

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W3-Sumangali Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0786	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.42	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	2106	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1265	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	315	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	72.0	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	32.4	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	180	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	135	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	289	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	534	1000



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TEST REPORT

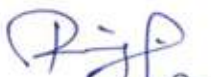
Report No.	SARL/25/0786

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissible
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 SO ₄ ²⁻ E: 2023	mg/L	342	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	3.45	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.42	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/25/0787

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W4-Karandai Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0787	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.22	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1248	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	750	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	498	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	129	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	42.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	323	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	175	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	286	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	230	1000



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TEST REPORT

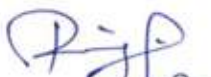
Report No.	SARL/25/0787

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	152	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.06	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.78	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: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0788

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W5-Kelneli Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0788	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.66	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	922.6	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	555	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	319	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	79.6	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	28.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	199	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	120	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	261	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	76.5	1000



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TEST REPORT

Report No.	SARL/25/0788

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	76.5	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.02	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.47	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

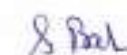
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0789

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W6-Mariyanallur Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0789	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.54	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	2006	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1210	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	231	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	30.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	37.2	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	76.0	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	155	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	531	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	370	1000



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TEST REPORT

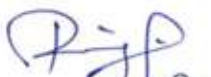
Report No.	SARL/25/0789

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	320	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.07	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	5.90	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.64	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0790

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	W7-Perumpandi Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0790	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	Physical parameters				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.27	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1123	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	676	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	402	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	57.2	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	62.2	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	143	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	259	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	329	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	186	1000



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TEST REPORT

Report No.	SARL/25/0790

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	138	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.03	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	5.64	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.55	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0791	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	SW1-Palar River

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0791	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.	Physical parameters			
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	110
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.68
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	821.5
B.	Chemical parameters			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	492
6	Total hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	410
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	74.8
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	53.5
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	187
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	223
11	Total alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	230
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	51.2



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TEST REPORT

Report No.	SARL/25/0791

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	156
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.14
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	5.89
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.62
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL(D.L-0.05)
19	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	105
20	Bio Chemical Oxygen Demand 3 Days at 27°C	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	31.5
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	5.80

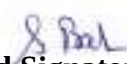
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0792	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	SW2-Thirupanmoor

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0792	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.	Physical parameters			
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	110
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	8.12
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	223.3
B.	Chemical parameters			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	136
6	Total hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	58.0
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	16.8
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	3.84
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	42.0
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	16.0
11	Total alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	67.0
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	51.2



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TEST REPORT

Report No.	SARL/25/0792

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	11.6
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.02
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.12
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.42
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL(D.L-0.05)
19	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	BDL (D.L – 4.0)
20	Bio Chemical Oxygen Demand 3 Days at 27°C	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	BDL (D.L – 2.0)
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.30

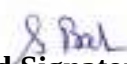
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0793	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	WATER
Sample Mark	SW3-Mamandur Lake

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0793	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.	Physical parameters			
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	8.05
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	725.2
B.	Chemical parameters			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	436
6	Total hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	211
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	32.0
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	31.4
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	80.0
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	131
11	Total alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	166
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	192



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TEST REPORT

Report No.	SARL/25/0793

Report Date.	10.03.2025

Sl. No	Parameters	Protocol	Unit	Result
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	49.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.12
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.79
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.54
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL(D.L-0.05)
19	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	84.0
20	Bio Chemical Oxygen Demand 3 Days at 27°C	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	25.2
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.20

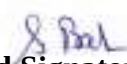
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0795	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District		
Sample Description	SOIL		
Sample Mark	S1- Within Mine Lease Area		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0795	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.20
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	66.69
3	Dry matter content	IS 15106: 2002	%	91.60
4	Water Content	IS 15106: 2002	%	8.40
5	Organic Matter	IS 2720: Part 22: 1972	%	0.65
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	120
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	8.98
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	34.48
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	56.54
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.06
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	109
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	247
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	%	23
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	38.0

BDL – Below Detectable limit (DL - Detectable limit).

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Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0796	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	SOIL
Sample Mark	S2- Vadapoondipattu Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0796	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.86
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	184.3
3	Dry matter content	IS 15106: 2002	%	91.90
4	Water Content	IS 15106: 2002	%	8.11
5	Organic Matter	IS 2720: Part 22: 1972	%	0.76
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	79
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	11.16
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	40.30
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.54
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.92
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	261
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	927
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	%	25
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	39.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0797	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District		
Sample Description	SOIL		
Sample Mark	S3- Sumangali Village		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0797	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	5.26
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	209.2
3	Dry matter content	IS 15106: 2002	%	97.60
4	Water Content	IS 15106: 2002	%	2.14
5	Organic Matter	IS 2720: Part 22: 1972	%	0.36
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	240
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SITY CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	7.52
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.00
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	43.58
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.76
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	181
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	368
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	%	27
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	40.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0798	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District		
Sample Description	SOIL		
Sample Mark	S4- Karandai Village		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0798	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.67
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	220.9
3	Dry matter content	IS 15106: 2002	%	86.40
4	Water Content	IS 15106: 2002	%	13.60
5	Organic Matter	IS 2720: Part 22: 1972	%	0.54
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	156
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	8.80
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	36.57
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	54.63
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.32
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	578
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	772
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	%	22
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	36.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0799	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	SOIL
Sample Mark	S5- Kelneli Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0799	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.24
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	334.4
3	Dry matter content	IS 15106: 2002	%	90.00
4	Water Content	IS 15106: 2002	%	10.00
5	Organic Matter	IS 2720: Part 22: 1972	%	7.24
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	142
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SITY CLAY LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	9.91
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.21
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	41.89
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.15
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	140
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	338
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	%	30
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	38.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified



Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

Please Contact:

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

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www.shrientanalytical.com

TEST REPORT

Report No.	SARL/25/0800	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District		
Sample Description	SOIL		
Sample Mark	S6- Mariyanallur Village		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0800	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.76
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	993.2
3	Dry matter content	IS 15106: 2002	%	85.70
4	Water Content	IS 15106: 2002	%	14.30
5	Organic Matter	IS 2720: Part 22: 1972	%	0.47
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	56
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	5.96
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	54.31
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	39.73
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.67
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	132
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	2065
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	%	22
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	40.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0801	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District		
Sample Description	SOIL		
Sample Mark	S7- Perumpandi Village		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0801	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.98
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	1327.0
3	Dry matter content	IS 15106: 2002	%	85.80
4	Water Content	IS 15106: 2002	%	14.20
5	Organic Matter	IS 2720: Part 22: 1972	%	0.24
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	112
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	9.40
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.34
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	42.25
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.79
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	421
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	812
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
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	42.0

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified



Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/25/0802

Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.Tvl. SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2a2 & 129/4b1b, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/NO/CHE-0802	Date of Monitoring	22.02.2025/ 23.02.2025
Sample Collected by	LABORATORY		

Time in hrs	N1	N2	N3	N4	N5	N6	N7
06.00	41.9	38.5	40.2	40.7	38.4	39.2	39.6
07.00	44.0	45.9	42.8	48.6	40.7	46.5	42.2
08.00	46.2	49.9	45.7	47.4	46.9	50.6	45.1
09.00	47.7	51.3	47.6	49.0	50.5	51.9	47.0
10.00	49.0	48.6	48.8	41.3	52.3	49.2	48.2
11.00	45.3	51.6	47.7	44.6	49.5	52.2	47.1
12.00	47.2	45.8	48.6	45.7	48.6	46.4	48.0
13.00	45.7	46.6	49.2	43.9	48.0	47.2	48.6
14.00	45.9	49.6	47.3	46.8	51.4	50.2	46.7
15.00	44.3	48.7	44.6	43.0	51.7	49.3	44.0
16.00	45.7	48.5	47.7	45.2	51.0	48.7	47.1
17.00	43.3	43.6	43.9	46.7	50.0	44.2	43.3
18.00	42.0	41.5	44.3	45.6	47.4	42.3	43.7
19.00	39.8	40.8	45.7	43.2	45.9	41.4	45.1
20.00	38.7	39.6	41.4	40.7	43.7	40.2	40.8
21.00	40.3	41.5	42.5	38.7	42.7	42.7	41.9
22.00	39.5	37.7	40.6	36.8	39.2	38.3	40.0
23.00	39.9	36.3	39.7	37.3	38.6	36.9	39.1
24.00	36.5	38.5	38.2	38.0	37.7	39.4	37.6
01.00	37.0	36.9	38.6	36.9	36.9	37.5	38.0
02.00	35.7	37.7	38.0	38.3	38.7	38.3	37.4
03.00	36.3	39.0	38.7	37.4	39.3	39.6	38.1
04.00	37.0	36.9	39.5	37.6	39.8	37.5	38.9
05.00	38.8	40.6	38.5	38.4	39.3	41.2	37.9

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/0802

Report Date.	10.03.2025

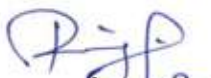
	N1	N2	N3	N4	N5	N6	N7
DAY EQUIVALENT	45.1	47.4	46.3	45.3	48.8	48.0	45.7
NIGHT EQUIVALENT	37.8	38.2	39.1	37.6	38.8	38.8	38.5
DAY & NIGHT EQUIVALENT	43.7	45.9	44.9	43.9	47.3	46.5	44.3

Remarks:

LOCATIONS:

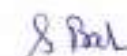
- N1-Within Mine Lease Area
- N2-Vadapoondipattu Village
- N3-Sumangali Village
- N4-Karandai Village
- N5-Kelneli Village
- N6-Mariyanallur Village
- N7-Perumpandi Village

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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ANNEXURE-8



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

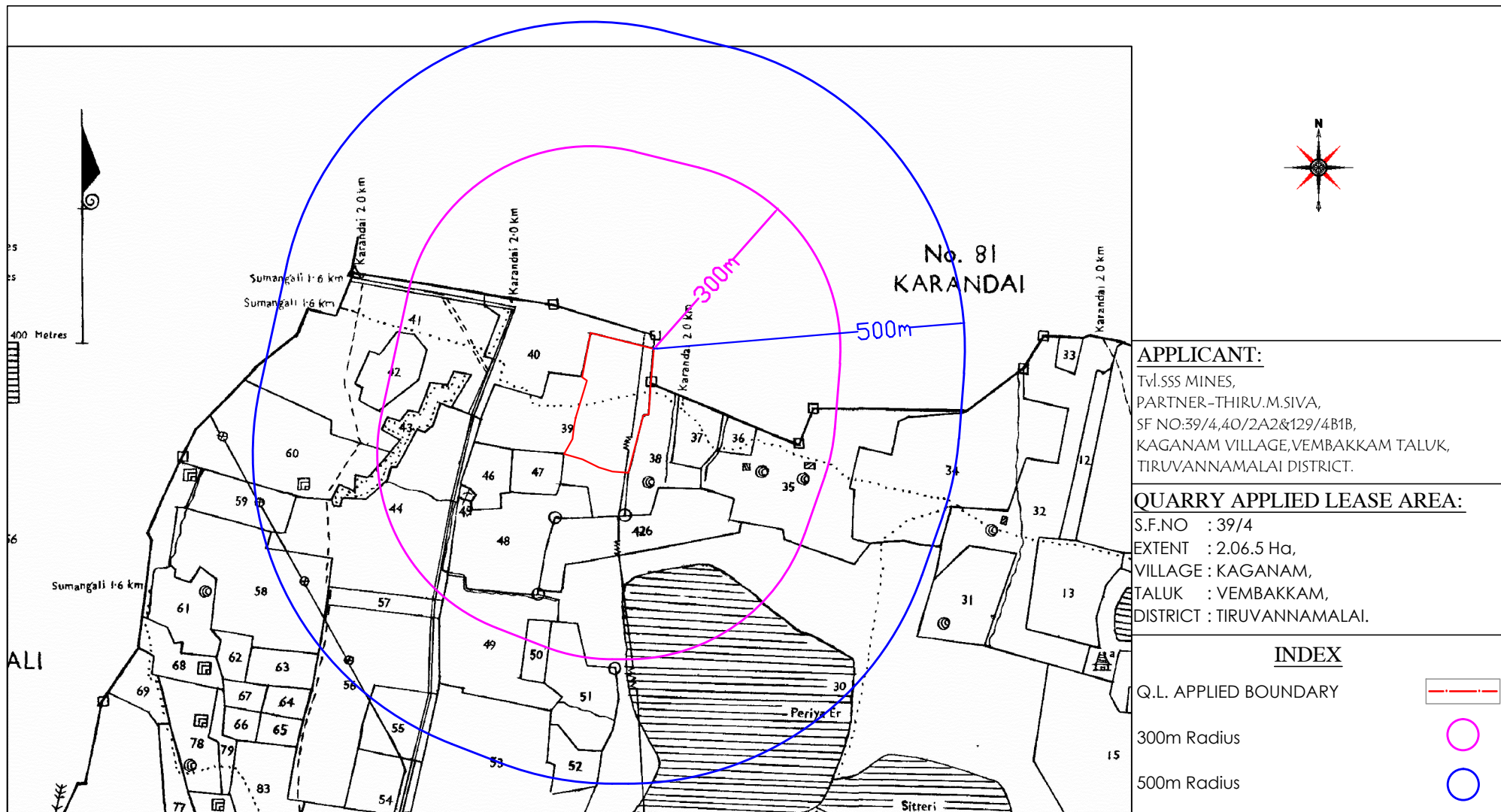
Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer



ANNEXURE-9



APPLICANT:

Tvl.SSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE,VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

INDEX

Q.L. APPLIED BOUNDARY



300m Radius



500m Radius





ANNEXURE-10

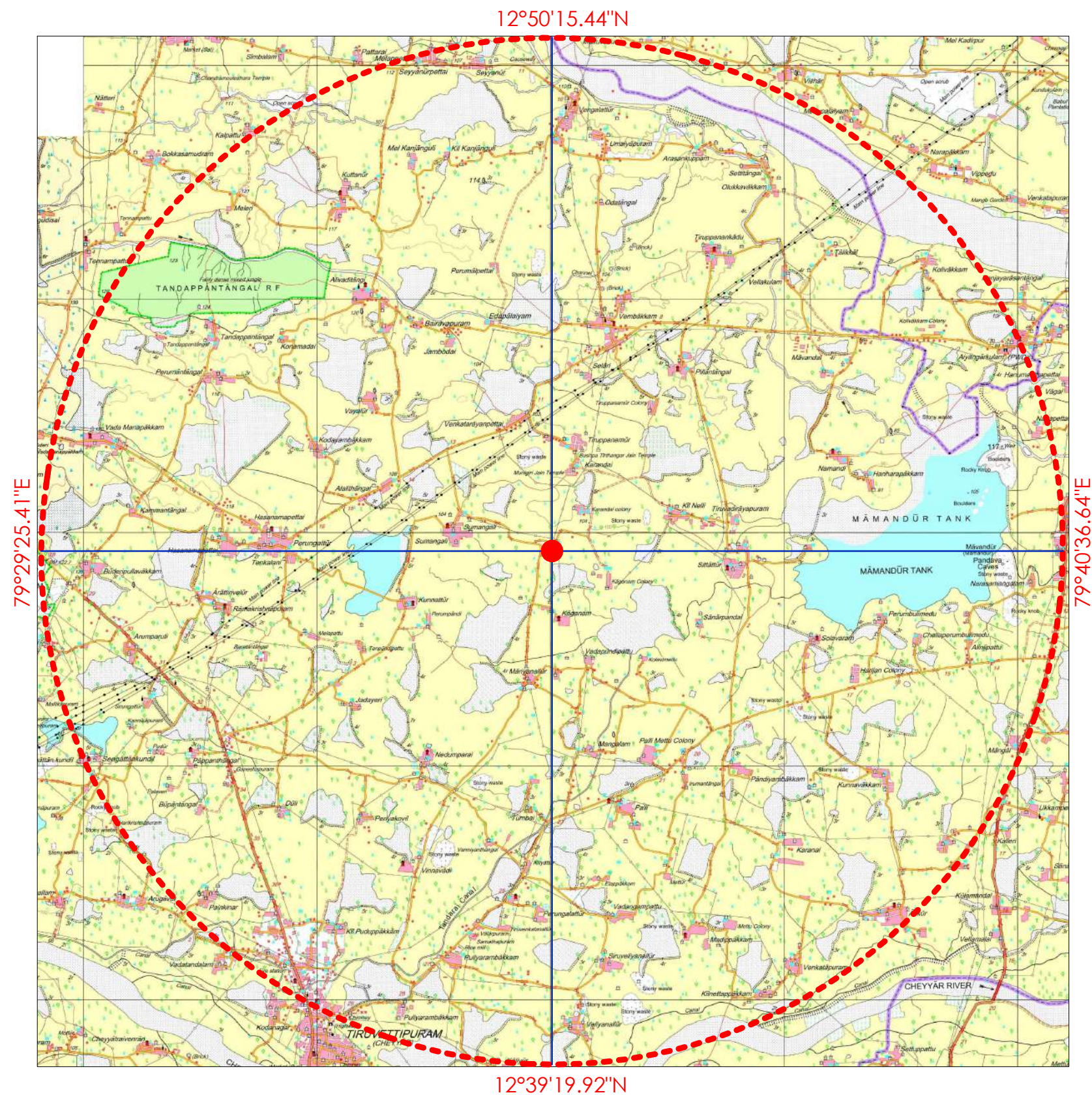


PLATE NO-I C
DATE OF SURVEY : 09.01.2025

APPLICANT:
Tvl.SSS MINES,
PARTNER-THIRU.M.SIVA,
SF NO:39/4,40/2A2&129/4B1B,
KAGANAM VILLAGE, VEMBAKKAM TALUK,
TIRUVANNAMALAI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 39/4
EXTENT : 2.06.5 Ha,
VILLAGE : KAGANAM,
TALUK : VEMBAKKAM,
DISTRICT : TIRUVANNAMALAI.

INDEX
TOPO SHEET NO : 57 P/ 10
LATITUDE : 12°44'44.41"N TO 12°44'51.65"N
LONGITUDE : 79°34'59.03"E TO 79°35'03.47"E

Q.L.APPLIED AREA
10KM RADIUS



TOPO SKETCH OF QUARRY LEASE

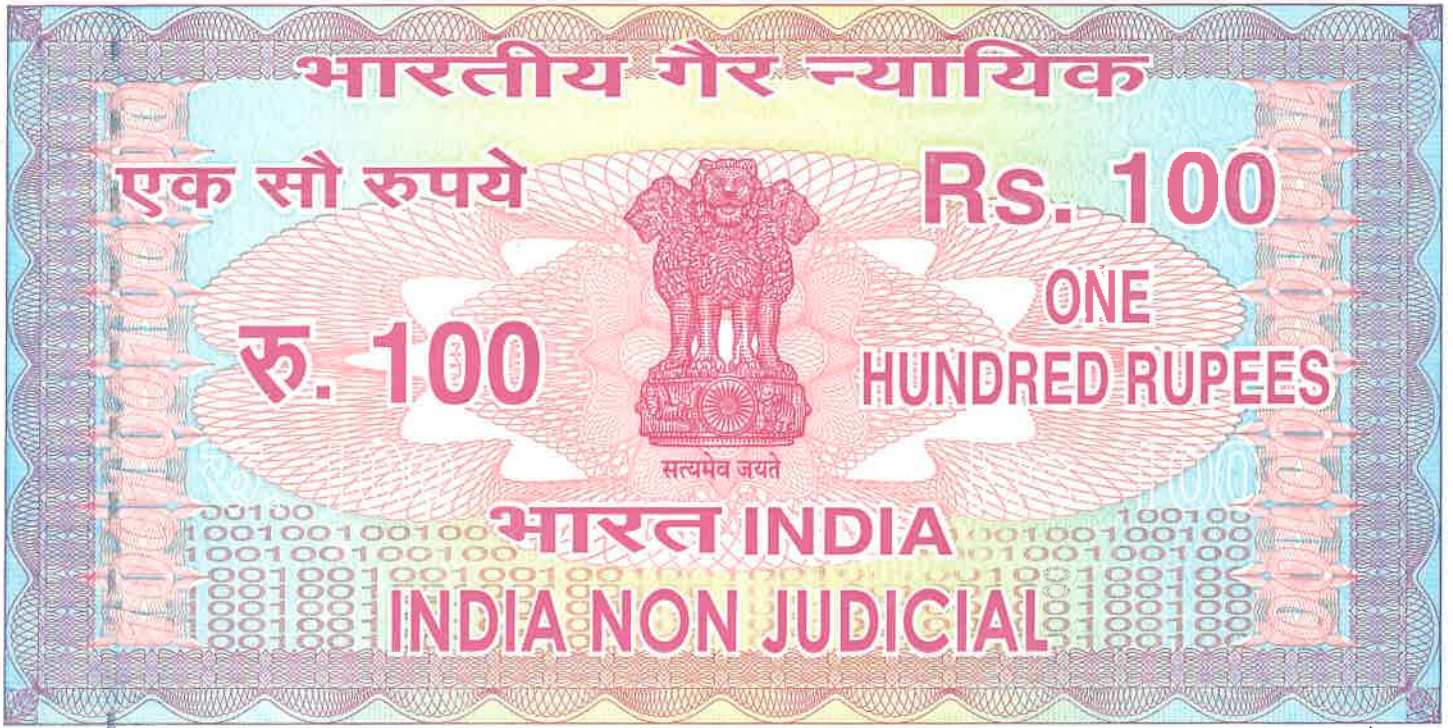
APPLIED AREA FOR
10Km RADIUS
SCALE- 1:100000

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON



ANNEXURE-11



தமிழ்நாடு தமில்நாடு TAMILNADU

26.02.2025

Rs. 100/-
EK 061836

SSS Mines

M. J. J.

Tiruvannamalai

க. கோபி (அ) துரிதாதி. கு. கு. கு.
ப.பி.பி. எண்: 6208-14/91
கச்சேரி வீதி, குமாரா
சேலம் மாவட்டம்

AFFIDAVIT TO SEIAA, TAMIL NADU

We, Tvl. SSS Mines, (Thiru.M.Siva, Partner) office at S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, have applied for getting Environmental Clearance to SEIAA, Tamil Nadu for quarry lease of Rough Stone and Gravel quarry over an extent of 2.06.5 Ha., of Patta land in S.F.No.39/4, 40/2A2 & 129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu State, do hereby solemnly declare and sincerely affirm that;

1. None of the following features are located within a 10 km radius of the proposed quarry site;
 - a. Protected areas notified under the Wildlife (Protection) Act, 1972 (NBWL).
 - b. Wild Life Sanctuary
 - c. Critically polluted areas as notified by the central pollution control board constituted under the Water (Prevention and Control of Pollution) Act 1974.
2. The proposal for Corporate Environment Responsibility (CER) activities is given as



K.P. SURESH, B.A., B.L.
ADVOCATE & NOTARY
Enroll No: 1771/2007
Near Taluk Office, Omalur (Po) & (Tk),
Salem (Dt)-636 455
Cell: 77082 93067

M. J. J.

follows;

Sl. No.	PROPOSED CER ACTIVITIES	COST IN LAKHS.
1	Plantation	5.0
2	Space for playground and Installation of RO system, Providing tables, benches, projector and sports equipment's, Providing books for the library	
3	Maintenance of the toilet for the entire lease period	
Total		5.0

The above proposed CER cost will be spent on Panchayat Union Primary School, Kaganam Village and we assure you that the proposed CER activities will be completed before the commencement of quarrying operations.

3. The proposal for an Environment Management Plan and its cost is given as follows;

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.21	0.21
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	8.00	0.50
	Muffle blasting - To control fly rocks during blasting	0.00	0.05
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	0.75	0.08
	No overloading of trucks/tippers/tractors	0.00	0.07
	Stone carrying trucks will be covered by tarpaulin	0.00	0.10
	Enforcing speed limits of 20 km/hr within ML area	0.15	0.02
	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	0.41
	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		9.61	1.68



M. Suresh

K.P. Suresh
K.P. SURESH, B.A., B.L.
ADVOCATE & NOTARY
 Enroll No: 1771/2007
 Near Taluk Office, Omalur (Po) & (Tk),
 Salem (Dt)-638 455
 Call: 77083 83957

Noise Environment	Provision for Portable blaster shed	0.50	0.02
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	0.00	6.82
Sub-Total (B)		0.50	6.84
Waste Management	Provision for domestic waste collection and disposal through authorized agency	0.25	0.02
	Installation of dust bins	0.05	0.22
Sub-Total (C)		0.30	0.22
Mine Closure	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0.21	0.05
	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	4.13	0.10
	Plantation inside ML area (390 Nos.)	1.28	0.19
	Plantation outside ML area (640 Nos.)	1.17	0.12
Sub-Total (D)		6.79	0.46
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	0.10	0.01
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	0.00	0.50
	Workers will be provided with Personal Protective Equipment's	1.08	0.27
	Health checkup for workers will be provisioned	0.00	0.27
	First Aid facility Provision	0.00	0.04
	Signage & boards for safety precautions	0.10	0.02
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles / HEMMs. Flaggers will be deployed for traffic management	1.03	0.10
	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
	Implementation as per Mining Plan and ensure safe quarry working (Statutory)	0.00	10.80



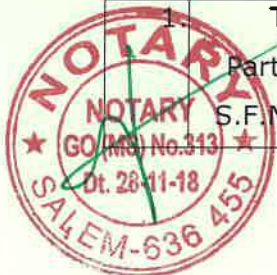
P. SURESH, B.A., B.L.
ADVOCATE & NOTARY
 Enroll No: 1771/2007
 Near Taluk Office, Omalur (Po) & (Tk)
 Salem (Dt)-636 455
 Call: 77083 83957

M. Suresh

	Slope Stability Analysis	2.00	0.00
	Sub-Total (E)	4.61	12.06
	Grant Total (A+B+C+D+E)	21.81	21.26
Total EMP Cost for 5 years is 139.28 lakhs i.e., Rs.21.81 Lakhs of Capital Cost + Rs.117.47 Lakhs of Recurring Cost (For 5 Years)			

4. Details of quarry within a 500m radius of the applied area

S.No	Name of the Quarry Owner	S.F. Nos & Village	Lease Period	Area
a. Abandoned Quarry				
1.	Thiru.S.Sridhar, S/o. T.Sivaprakasam, Managing Director, SKT MINES, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram 635 501.	S. F.Nos.44/11,58/ 7,5A.60/2,58/58,5 9/1A,1B,2B,60/3,5, 6 & 7 Kaganam Village	(17-09-2018 to 16-09-2023)	3.96.5 Ha
b. Existing Quarry				
1.	Thiru.R.Kathirvelu, No.19C, Villakkadi Koil Thoppu Street, Kancheepuram	S.F.Nos.58/1A,1B, 2A, 2B, 3,6 , 7 , 8A. , 8B, 59/2A, 61/1B, 2A, 2B, 3, 4A, 5A & 6 Kaganam Village	(06-2024 to 09-06-2029)	4.42.0 Ha
2.	Thiru.S.Vadivel, S/o. Subramani, No.1 Amman kula st, Sumangali village & Post, Vembakkam	S. F.Nos.38/1, 2, 39/5, 6, 7, 48/17,18, 19, 20, 426/2 & 426/3 Kaganam Village	(20-09-2021 to 19-09-2031)	4.18.0 Ha
c. Proposed Quarry				
1.	Tvl.SSS Mines, Partner Thiru.M.Siva, S.F.No.39/4, 40/2A2 &	S.F.Nos.39/4 Kaganam Village	Proposed for five years from the execution of the lease deed	2.06.5 Ha



M. Suresh

K.P. Suresh
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ADVOCATE & NOTARY
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Near Taluk Office, Omalur (Po) & (Tk.)
Salem (Dt)-636 455
CeH: 77083 83957

	129/4B1B, Kaganam Village, Vembakkam Taluk, Tiruvannamalai District.			
2.	Tvl.SKT Mines, Partner of Thiru.G.Dhamotharan, No.333, Guberan Street, Neervallur, Kancheepuram District.	S.F.Nos.44/13A, 56/1A, 56/2A, 56/2B, 56/3, 56/4, 56/5, 56/6, 56/7, 57/1, 58/9, 58/10, 61/481, 61/482, 61/58, 61/7, 62, 63/1 & 63/2 Kaganam Village	-	4.85.5 Ha
Total Area of Cluster				15.52.0 Ha

The total lease area within the 500m radius works out to 15.52.0 Ha including this proposed lease area (2.06.5 Ha). **As such, cluster situation is applicable and Environmental Clearance for this project is applied under B1 Category.**

5. There will not be any hindrance or disturbance to the people living no uprooted/ nearby our quarry site while transporting the minerals and due to quarrying activities.
6. There is no approved habitation within a 250m radius from the periphery of our quarry.
7. We swear that afforestation will be carried out during the course of the quarrying operation and maintained.
8. The required insurance will be taken in the name of the laborers working in our quarry site.
9. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Rough Stone and Gravel.
10. We will not engage in any child labor in our quarry site and we aware that engaging in child labor is punishable under the law.
11. All types of safety / protective equipment will be provided to all the laborers working in our quarry.

12. No temples and schools are located within a 500m radius of the periphery of our quarry.

13. We will erect fencing around the quarry lease before commencement of mining



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activities.

14. We will carry out systematic and scientific mining employing a qualified mine manager, blaster.
15. We will inform DGMS before commencement of mining activities.
16. We will ensure that all the EMP measures are followed for the entire lease period.
17. We ensure to do the social and environmental commitment as mentioned in the mining plan to the best of our knowledge.
18. We will ensure that all EMP measures are followed throughout the entire lease period.

Notary Sign & Seal



K.P. Suresh 28/2/2025
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Quarry owner sign & Seal

M. Siva
For Tvl.SSS Mines
Partner Thiru.M.Siva

M. Siva