

**DRAFT EIA / EMP FOR
PROPOSED ROUGH STONE AND GRAVEL QUARRY
CATEGORY B1**

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

ToR Identification No. TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025)

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	244/1
VILLAGE	PAVALI
TALUK	VIRUDHUNAGAR
DISTRICT	VIRUDHUNAGAR
EXTENT	4.61.50 Ha
PROPOSED PRODUCTION FOR TEN YEARS	8,89,905 M ³ OF ROUGH STONE & 1,87,500 M ³ OF GRAVEL
PROPOSED PRODUCTION FOR FIRST FIVE YEARS	7,89,215m ³ of Rough Stone, 1,87,500m ³ of gravel
PROPOSED PRODUCTION FOR SECOND FIVE YEARS	1,00,690m ³ of Rough Stone
LAND	PATTA LAND

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

Category of the Project: B1 Cluster Mining, Total Cluster Area – 10.33.5 Ha
Baseline Monitoring Period – October to December 2024

APPLICANT

**THIRU. P.K.SANKAR RAJ
S/o. PERIYA KENGAIYA,
No:4/328, CHANDRAGIRIPURAM, PAVALI,
VIRUDHUNAGAR – 600 056**

ORGANIZATION

**M/s. GLOBAL MINING SOLUTIONS
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)
PLOT NO.6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATY,
KOTTAMETTUPATY, OMALUR, SALEM, TAMIL NADU – 636 455
NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110
CONTACT: 97502 23535, 94446 54520**

Email: infoglobalmining@gmail.com, globalminingsolutionssalem@gmail.com

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						
3						
4						
5						
6						
7						
8						
9						
10						

ACKNOWLEDGEMENT

M/s. Global Mining Solutions, Salem is very much thankful to Thiru.P.K.Sankar Raj, (Lessee) for the confidence and trust placed on our organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone and Gravel Quarry over a lease extent of 4.61.50 Ha & a cluster extent of 10.33.50 Ha at Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu and formulating the Environmental Management Plan (EMP). We also gratefully acknowledge the cooperation and assistance provided by concerned government authorities for collection of secondary information for the preparation of EIA/EMP report. Our sincere thanks to the local people of Pavali Village and the nearby villages for their whole hearted cooperation and constant involvement during the entire field study without which the study would not have been possible.

For: M/s. Global Mining Solutions



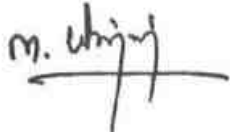
(M.Prabhu)

Managing Director

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 4.61.50 Ha & a cluster extent of 10.33.50 Ha at Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu.

For M/s. Global Mining Solutions



Name: Manikandan Manickam

EIA Coordinator – Mining of Minerals

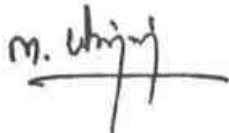
Global Mining Solutions

UNDERTAKING

In Line with MOEF OM no. J-11013/41/2006-IA.II (1) dated 4th Aug 2009 and its Amendments, we hereby confirm that all Terms of Reference issued by Ministry of Environment, Forest and Climate Change vide Letter No: TO24B0108TN5972965N, dated: 11.01.2025 for preparation of EIA/EMP report for the proposed Rough Stone and Gravel Quarry over a lease extent of 4.61.50 Ha & a cluster extent of 10.33.50 Ha at Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu, for the production of 8,89,905 m³ of Rough Stone and gravel 1,87,500 m³ from the proposed lease area and the details has been complied in the EIA/EMP report is factually correct.

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

For M/s. Global Mining Solutions



Name: Manikandan Manickam

EIA Coordinator – Mining of Minerals

Global Mining Solutions

**QUALITY COUNCIL
OF INDIA**
Creating an Ecosystem for Quality



**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-B** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations, Version 3: for preparing EIA-EMP reports in the following Sectors –

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

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

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


Sr. Director, NABET
Date: March 31, 2023

Certificate No.
NABET/EIA/2326/IA 0110

Valid up to
January 4, 2026

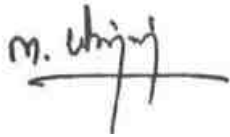
For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to the QCI-NABET website.

Declaration by Experts

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over a lease extent of 4.61.50 Ha & a cluster extent of 10.33.50 Ha at Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu.

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

EIA Coordinator Name: M. Manikandan Manickam



Signature & Date

Period of involvement: October 2024 to December 2024.

Contact information:

M/s Global Mining Solutions

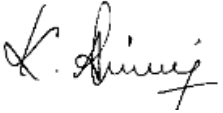
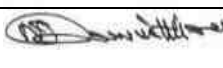
Plot No.6, SF No. 13/2, A2, VS City, RC Chettypatty,

Kottamettupatty, Omalur,

Salem, Tamil Nadu – 636 455

S. No.	Functional areas	Name of the 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.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

			<u>Period: October 2024 to December 2024.</u>	
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: October 2024 to December 2024.</u>	
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October 2024 to December 2024.</u>	
4	SE	Sarasvathy K	Baseline SE study. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. <u>Period: October 2024 to December 2024.</u>	
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: October 2024 to December 2024.</u>	
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

			<i>water depth and impact of project on ground water of the area.</i> <u>Period: October 2024 to December 2024.</u>	
7	AQ	<i>Srilatha Thiruveedhula</i>	<i>Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.</i> <u>Period: October 2024 to December 2024.</u>	<i>T. Srilatha</i>
8	NV	<i>Dhanalakshmi Ramanathan</i>	<i>Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.</i> <u>Period: October 2024 to December 2024.</u>	<i>R. Dhanak</i>
9	LU	<i>Srilatha Thiruveedhula</i>	<i>Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment.</i> <u>Period: October 2024 to</u>	<i>T. Srilatha</i>

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

			<u>December 2024.</u>	
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: October 2024 to December 2024.</u>	<i>S.V. Prashant</i>
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of Gravel. <u>Period: October 2024 to December 2024.</u>	<i>Shisupal Sing</i>
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: October 2024 to December 2024.</u>	<i>Valliappan</i>

TABLE OF CONTENT

CHAPTER NO	TITLE	PAGE NO
1.0	INTRODUCTION	51
1.1	PURPOSE OF THE Report	51
1.2	IDENTIFICATION OF PROJECT AND PROJECT PROPONENT	53
1.3	BRIEF DESCRIPTION OF THE PROJECT	53
1.4	IMPORTANCE OF THE PROJECT TO THE REGION	55
1.5	REGULATORY COMPLIANCES	55
1.6	NEED AND JUSTIFICATION OF THE PROJECT	58
1.7	STRUCTURE OF THE REPORT	59
2.0	PROJECT DESCRIPTION	61
2.1	TYPE OF THE PROJECT	61
2.2	NEED FOR THE PROJECT	61
2.3	LOCATION OF THE PROJECT	61
2.4	LAND USE PATTERN OF THE PROJECT AREA	66
2.5	SIZE AND MAGNITUDE OF THE OPERATION	66
2.6	TOPOGRAPHY AND DRAINAGE	66
2.7	GEOLOGY	67
2.8	RESOURCES AND RESERVES	68
2.9	PROCESS DESCRIPTION AND TECHNOLOGY	69
2.10	CONCEPTUAL MINING PLAN / FINAL MINE CLOSURE PLAN	74
2.11	PROJECT REQUIREMENT	76
3.0	DESCRIPTION OF THE ENVIRONMENT	78
3.1	INTRODUCTION	78
3.2	STUDY AREA	78
3.3	STUDY PERIOD	79
3.4	MONITORING LAB	79
3.5	ENUMERATION OF THE STRUCTURES LOCATED WITHIN 300 M	79

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	RADIUS FROM THE PROPOSED QUARRY SITE	
3.6	ENVIRONMENTAL SETTINGS OF THE PROJECT	82
3.7	EXISTING ENVIRONMENTAL SCENARIO	85
4.0	ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	117
4.1	GENERAL	117
4.2	PROJECT SPECIFIC IMPACTS AND MITIGATION MEASURES	117
4.3	BIOLOGICAL ENVIRONMENT	133
4.4	MITIGATION MEASURES	137
5.0	ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)	142
5.1	ALTERNATE TECHNOLOGY	142
5.2	ALTERNATE SITE	142
6.0	ENVIRONMENTAL MONITORING PROGRAMME	143
6.1	GENERAL	143
6.2	MONITORING MECHANISM	143
6.3	ENVIRONMENTAL MONITORING SCHEDULE AND FREQUENCY	143
6.4	BUDGET FOR IMPLEMENTATION	144
6.5	SUBMISSION OF PERIODICAL REPORTS	144
6.6	DETAILED BUDGET AND PROCUREMENT SCHEDULES	144
7.0	ADDITIONAL STUDIES	146
7.1	PUBLIC CONSULTATION	146
7.2	RISK ASSESSMENT	146
7.3	DISASTER MANAGEMENT PLAN	149
7.4	CUMULATIVE IMPACT STUDY	151
8.0	PROJECT BENEFITS	159
9.0	ENVIRONMENTAL COST BENEFIT ANALYSIS	160
10.0	ENVIRONMENTAL MANAGEMENT PLAN	161
10.1	ENVIRONMENTAL POLICY	161
10.2	ENVIRONMENTAL MANAGEMENT PLAN	162
10.3	ADMINISTRATION AND TECHNICAL SETUP	164
10.4	OCCUPATIONAL SAFETY & HEALTH MANAGEMENT	166
10.5	BUDGETARY PROVISION FOR ENVIRONMENTAL MANAGEMENT	166
10.6	CONCLUSION	169
11.0	SUMMARY AND CONCLUSION	170
11.1	INTRODUCTION	170
11.2	PROJECT DESCRIPTION	170

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

11.3	DESCRIPTION OF THE ENVIRONMENT	172
11.4	ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	175
11.5	ANALYSIS OF ALTERNATIVES	181
11.6	ENVIRONMENTAL MONITORING PROGRAM	182
11.7	ADDITIONAL STUDIES	182
11.8	PROJECT BENEFITS	184
11.9	CONCLUSION	184
12.0	DISCLOSURE OF CONSULTANTS	185

List of Tables	
Description	Page No.
Table – 1.1 Cluster Mines Details	51
Table -1.2 Project Identification	53
Table -1.3- Details of Project Proponent	53
Table 1.4 Brief Description of the project	53
<i>Table 1.5 Present Legal Status</i>	56
<i>Table 2.1 Boundary Coordinates of the Project</i>	62
<i>Table 2.2 Mine Lease Area and its Ownership</i>	62
<i>Table 2.3 Site Connectivity</i>	62
Table 2.4 Land use pattern of the <i>Project</i> area	66
Table 2.5 Available Geological Resources	68
Table 2.6 – Available Mineable Reserves	69
Table 2.7 – Machinery Details	71
Table 2.8 – Drilling and blasting	72
Table 2.9(a) – Yearwise Production for First Five Years	73
Table 2.9(b) – Yearwise Production for Second Five Years	74
Table 2.9 - Ultimate Pit Dimension	74
Table 2.10 Details of Water requirement	76
Table 2.11 <i>Employment Generation</i>	76
Table 3.1 Structures within 300 m radius	79
Table 3.2 Environmental Settings of the Study Area – 10 km radius	82
Table 3.3 Rainfall Data	85
Table 3.4 Meteorological Data Recorded at Site	86
Table 3.5 Methodology for Air Quality Monitoring	88
Table 3.6 – Ambient Air Quality Monitoring Locations	89
Table 3.7 Ambient Air Quality Data	91
Table 3.8 Water Sampling Locations	94
<i>Table 3.9 – Ground Water Analysis Results</i>	96
Table 3.10-Noise Monitoring Locations	98
Table 3.11 Noise Monitoring Result	98
Table 3.12– Soil Sampling Locations	101
Table 3.14 - Soil Testing Result	103
Table 3.15 Land use pattern of the project site	104
Table 3.16 Land use pattern of the Study area of 10 km radius	105
Table 3.17 List of Flora	107
Table 3.18 List of Fauna	108
Table 3.19 - Population Profile of the Study Area	113
Table 3.20 – Population Profile - Pavali Village	114
Table 4.1- Land use pattern of the project site	118
Table 4.2 – Rainwater Harvesting Plan	123
Table 4.3 Mitigative Measures for Air Environment	125
TABLE 4.4 Types of Source for Air Pollution in Mining	126
TABLE 4.5 Emission Factors for Mining Activities	126
TABLE 4.6 Pm ₁₀ And Pm _{2.5} Emission From Mining Activities	127
Table 4.7 - Area Emissions – Total Material handling	127
Table 4.8 - Line Source – Transport of Rough Stone from Pit to Boundary	128
Table4.9: Concentrations of PM _{2.5} after Project Implementation	129
Table4.10: Concentrations of PM ₁₀ after Project Implementation	130
Table 4.11- The likely noise level in the lease area	131
Table 4.12 Ecological Impact Assessments and Its Mitigations -Part	133

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

1	
Table 4.13 Ecological Impact Assessments and Its Mitigations -Part 2	133
Table – 4.14 greenbelt development plan	137
Table 6.1 Environmental Monitoring Schedule	144
Table 6.2 Environmental Management Plan budget	145
Table 7.1 Risk Assessment and Control Measures	147
Table 7.2 Details of Quarries within 500m radius	152
Table 7. 3 Salient Features of Existing & Proposed Quarries	153
Table 7. 8 Incremental & Resultant GLC within cluster for PM2.5	154
Table 7. 9 Incremental & Resultant GLC within cluster for PM10	154
Table 7.8 Cumulative Impact On Socio-Economic Environment	157
Table 10.1 Environmental Management Plan	162
Table 10.2 Environmental Management Plan Budget	166
Table 10.3 Environmental Management Plan Budget	168
Table 11.1 Salient Features of the Project	170
Table - 11.2 Land use Pattern of the study area	173

List of Figures	
Descriptions	Page No
Figure 1.1 Satellite Image showing cluster quarries	52
Figure 2.1 Location Map	63
Figure 2.2 Google image showing Corner Coordinates of the project site	63
Figure 2.3 Lease Plan	64
Figure 2.4 Village Map	64
Figure 2.5 Site Photographs	65
Figure 2.6 Process Flow Diagram	70
Figure 2.7 Geological Production Plan and Sections	71
Figure 2.8 Conceptual Plan and Sections	75
Figure 3.1 Google Image showing structures located within 300 m radius	80
Figure 3.2 Photographs of the structures located within 300 m radius	81
Figure 3.3 Satellite Image of the Study Area	83
Figure 3.4 Topo map Showing Study Area	84
Figure 3.5 Google Image Showing 1 km radius	84
Figure 3.6 Wind Rose Diagram – Blowing From (October – December 2024)	87
Figure 3.7 Ambient Air Quality Monitoring Locations	90
Figure 3.8 Graphical Representation of Air Quality Data	92
Figure 3.9 Ground Water Sampling Locations	95
Figure 3.10 Ground Water – Monitoring Results	97
Figure 3.11 Noise Monitoring Location	99
Figure 3.12 Noise Monitoring Results	100
Figure 3.13 - Soil Sampling Stations	102
Figure 3.14 Land use map of the study area	105
Figure 3.15 Drainage map of the study area	110
Figure 3.16 Geology map of the study area	111
Figure 3.17 Geomorphology map of the study area	111
Figure 3.18 Village Map of the Study Area	112
Figure 3.19 Gender wise Population Distribution	115
Figure 3.20 Gender wise Literacy Distribution	115
Figure 3.21 Occupational Structure within Buffer Zone	116
Figure 4.1 Water Balance Diagram	122
Figure 4.2 Isopleth of GLC Prediction for PM _{2.5}	128
Figure 4.3 - Isopleth of GLC Prediction for PM ₁₀	129
Figure 7.1 Cluster Isopleth of GLC Prediction for PM _{2.5}	155
Figure 7.2 - Cluster Isopleth of GLC Prediction for PM ₁₀	156
Figure 10.1 Organization Chart	165

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

List of Annexures

Annexure No.– 1	Terms of Reference (TOR)
Annexure No – 2	Precise Area Communication Letter
Annexure No – 3	Mine Plan Approval Letter Copy, approval book with annexures
Annexure No – 4	Details of other leases within AD MINES 300m radius Letter
Annexure No –5	VAO Letter for features within 500 m radius
Annexure No –6	Land Documents
Annexure No –7	Monitoring Report
Annexure No –8	Lab NABL Certificate
Annexure No –9	Lab Agreement
Annexure No –10	The Copy of Blasting Agreement
Annexure No –11	Structures Located within 500m Radius of the Project
Annexure No –12	The Copy of CER Letter
Annexure No –13	Affidavit

COMPLIANCE TO **TERMS OF REFERENCE**

POINT WISE COMPLIANCE OF TOR CONDITIONS

S.NO	POINT WISE TOR	REPLY	PG NO
Specific Terms of Reference for (Mining Of Minerals)			
A. SEIAA SPECIFIC CONDITIONS			
1.	The PP shall carry out the studies assessing the impact of mining on drainage pattern and agricultural activities and submit the study report and the mitigation measures along with the EIA Report.	A detailed studies assessing the impact of mining on drainage pattern and agricultural activities are discussed in section 3.7.9.	
2.	It was noted from the KML, agricultural activity is carried out around the proposed site. Hence the PP is requested to furnish the No Objection Certificate (NOC) from the competent Authority of Agricultural Department and submit along with the EIA Report.	There is no agricultural land within the lease area.	
B. 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: - Copy of the agreement forming CMC. - The Organization chart of the Committee with defining the role of the members - The 'Standard Operating Procedures' (SoP) executing the planned activities.	The proponent will take the initiative to form a cluster management committee once environmental clearance is obtained for this quarry.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

2.	The PP shall erect the DGPS reference pillars painted with blue & white colour indicating the safety barrier of 7.5 m to be left under the Rule 13 (1) of MCDR, 1988 within the lease boundary and protective bunds and submit the photographic/videographic evidence along with the EIA report.	The work is in process.	
3.	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.	A Site survey has been conducted to identify and list structures located within a 500 m radius from the proposed Quarry and structures located within 500 m radius are given in section 3.5 of Chapter 3.	
4.	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The fencing and greenbelt development work is in progress. As per precise area communication letter, A safety distance of 7.5 & 10 m provided for adjoining patta land. • There is no water bodies passing on the project area. • A seasonal odai passing on southern side of the project is 290m away from the area. • There is urani situated on northwestern side of the area and is 325m away from the area. • There is kuttai situated on southwestern side of the area and is 365m away from the area.	
5.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	Bio diversity study will be incorporated in the Final EIA/EMP Report.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

6.	The PP shall carry out the scientific studies to assess the existing hydrogeological conditions and impacts of the quarrying operation on the agricultural activities present in the core zone, by involving any one of the reputed Research and Academic Institutions such as TN Agricultural university, etc and the report shall be furnished with the mitigation measures proposed during the quarrying operation.	A detailed study will be done and will be incorporated in final EIA/EMP Report .	
7.	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP is planned for the entire life of the mine. The affidavit will be incorporated in the Final EIA/EMP Report.	
8.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Complied. The details are described in the chapter 3	
9	The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	This is a fresh quarry. Conceptual working plan with all details will be furnished.	

C. 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: 1. Original pit dimension 2. Quantity achieved Vs EC Approved Quantity 3. Balance Quantity as per Mineable Reserve calculated. 4. Mined out Depth as on date vs EC Permitted depth 5. Details of illegal/illicit mining 6. Violation in the quarry during the past working.	This is a proposed project. No mining has been carried out in this lease area so far.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	7. Quantity of material mined out outside the mine lease area 8. Condition of Safety zone/benches 9. 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.	There is no habitation around the lease area . VAO certificate copy enclosed as Annexure 5.	
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.	A Site survey has been conducted to identify and list structures located within a 500 m radius from the proposed Quarry and structures located within 500 m radius are given in section 3.5 of Chapter 3.	120
4.	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	A detailed hydro-geological report of the proposed project will be incorporated in the Final EIA/EMP Report.	
5.	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Bio diversity study will be incorporated in the Final EIA/EMP 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.	DFO Letter will be incorporated in the Final EIA/EMP Report.	
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	This is a proposed project. No mining has been carried out in this lease area so far.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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.	The depth proposed for this quarry is 50 m. However, measures to ensure slope stability is given in Chapter 7.	214
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.	Affidavit will be incorporated in the Final EIA/EMP Report.	
10.	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Controlled blasting techniques using delay detonators and optimum charge per delay will be implemented in this quarry.	
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 PP has not carried out any quarrying operation before this project.	
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,	Not applicable. This is a fresh quarry project.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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 – 3.4 in Chapter – 3. The geology and geomorphology map are provided in Figure No.3.19, 3.20, Chapter 3. The Soil map is provided under Figure No. 3.15, Chapter-3. The 10km Radius Index plan showing buffer zone is given in Figure No.3.5 in Chapter – 3.	126, 161 – 163 & 150, 127
16.	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	Fresh lease. It will be complied after commencement of the mining operation.	
17.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety	Photographs of the site are provided in Figure 2.5 of	106

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Chapter-2. As per Precise Order condition No. 1, PP have provided safety distance of 7.5 m & 10m to the adjoining patta land. Green belt will be developed over an area of 0.84.50 hectares. The work of the same is under process.	
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.	All details are furnished in chapter 2 section 2.8.1.	
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.	Complied. Please refer figure 10.1 of Chapter 10.	222
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.	A detailed hydro-geological report of the proposed project will be incorporated in the Final EIA/EMP Report.	-

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

21.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The baseline data were collected for the environmental components including land, soil, water, air, noise, biology, socio-economy, and traffic and the results have been discussed in Chapter 3.	119
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.	Cumulative impact study due to mining operations in cluster are given in Section 7.4 of Chapter 7. EMP are detailed in Chapter 10.	206 & 218
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 section 4.2.3.4 of chapter 4. Water balance is shown in Figure 4.1.	175 & 174
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.	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 has been discussed in Section 3.7.6.2, of Chapter 3. details of surrounding ecological sensitive features have been provided in Table 3.2 under Chapter 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Table 2.4 under Chapter 2.	107, 124, 152

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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. No dumps have been proposed outside the lease area. The overburden in the form of Gravel will be utilized for afforestation purpose.	
26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not applicable. This is a fresh quarry project.	
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided	The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. Rain water harvesting plan is given in section 4.2.3.4 of Chapter 4.	
28.	Impact on local transport infrastructure due to the Project should be indicated.	Not applicable. This is a fresh quarry project.	
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.	The details are given in section 3.7.7 of Chapter 3.	153

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

30.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	Accepted. It will be done.	
31.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Detailed mine closure plan is given in section 7.5 of Chapter 7. Post mining land use pattern is shown in section 2.10 of Chapter 2.	115 & 214
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.	Detailed greenbelt development plan has been provided in Section 4.4.5.4 under Chapter 4.	191
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	The FAE of ecology and biodiversity has advised the project proponent that saplings of one year old raised in the ecofriendly bags should be purchased and planted with the spacing of 3 m between each plant around the proposed project area as per the advice of local forest authorities/botanist.	
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 for the project has been provided in Section 7.3 under Chapter 7.	204
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.	A risk assessment plan for the project has been provided in Section 7.2 under Chapter 7.	201

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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 have been discussed in detail in Section 4.4.7 of Chapter 4.	194
37.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Details of the socio economic survey conducted in the buffer zone has been provided in section 3.7.13, Chapter-3. Public health facilities will be further aimed to be developed through CER activities wherein periodic health checkups, medical camps for the locals will be conducted.	163
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.	Details of the socio economic survey conducted in the buffer zone has been provided in section 3.7.13, Chapter-3. No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 30 people directly.	163
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 in any court against this project.	-
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.	216

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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/TNPCCB.	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.	The EMP is planned for the entire life of the mine. The affidavit for the same will be included in the Final EIA/EMP Report.	-
43.	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Agreed	-

STANDARD TERMS OF REFERENCE (MINING OF MINERALS)

1.	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	This is a proposed project. No mining has been carried out in this lease area so far by the proponent.	
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Precise area communication letter was obtained from the Assistant Director, Department of Geology and Mining, Virudhunagar, vide Rc.No. KV1/683/2024, dated 04.10.2024. (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.	The production capacity, quantity of waste, its management and mining technology in mine plan and EIA, etc., are compatible with one another.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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).	Project coordinates superimposed in lease plan and in a High Resolution Imagery are given as Figure No - 2.2 in Chapter - II & Figure No - 3.1 in Chapter - III. The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter - III.	
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.	The 10km Radius Index plan in survey of India Toposheet showing features is given in Figure No.3.1, Chapter - III. The Geomorphology map (Figure No.3.17), Geology of the study area (Figure No.3.18), Lithology (Figure No.3.19), Soil map (Figure No.3.20) are provided in Chapter-III.	
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	Not Applicable.	
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of	In this proposed project, appropriate environmental monitoring programme are framed. Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area. The Mines Manager/Mine Incharge will undertake effective monitoring and	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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.	implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. Its details are provided in para 6.1, Chapter VI.	
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	Various risks likely to arise due to mining activities and the safeguard measures are detailed in para 7.4 of Chapter 7. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.4.2, Chapter-4.	
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	The study area chosen for collecting existing environmental status covers 10 km radial distance from the project periphery (Figure No - 3.1). Data given in the report is for the life of the mine.	
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use 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 has been discussed in Section 3.7.6.2, of Chapter 3. details of surrounding ecological sensitive features have been provided in Table 3.2 under Chapter 3. Land use plan of the project area	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

		showing pre-operational, operational and post-operational phases are discussed in Table 2.4 under Chapter 2.	
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilised. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	
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.	There is no forest land in the lease area.	
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.	
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.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Detailed floral list of the study area is given in para 3.5.1 of Chapter – III.	
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required. should be worked out with cost implications and submitted.	The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/ Elephant Reserves within 10 km Radius from the periphery of the project area.	
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area. the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	A study of flora and fauna composition in the core and buffer zone of the project has been made and the details are furnished in section 3.7.7, Chapter III.	153

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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.	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 w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable	
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shilling of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	The mining activities will be carried out within the mine lease area only. The entire mine lease area of 4.61.50 Ha is a patta land. There is no population within the ML area. Hence, the question of R& R does not arise.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	Baseline Data were collected for One Season (Post Monsoon) October – December 2024 as per CPCB Notification and MoEF & CC Guidelines and Detailed in Chapter -. 3.	119
23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view and Detailed in Section 4.2.4.3. Air Quality Modelling for Cluster are detailed in section 7.4.2.1 of Chapter 7.	179 & 211
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The total water requirement for the project is 5.0 KLD. The required water will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose. Water Balance diagram is presented in Figure No – 4.1.	174

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not applicable Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis.	-
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Rain water will be diverted into working area by constructing drains to store and use for dust suppression and greenbelt development. Details are presented in section 4.2.3.4. The total water requirement for the project will be 5.0 KLD comprising Drinking 1.0 KLD, Dust suppression 2.0 KLD, Greenbelt 2.0 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.1.	174&175
27	Impact of the Project on the water quality, both surface and groundwater. should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Section 4.2.3.	173
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 quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 50 m BGL and water table is found at a depth of 63-66 m BGL.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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.	● A seasonal odai passing on southern side of the project is 290m away from the area. ● There is urani situated on northwestern side of the area and is 325m away from the area. ● There is kuttai situated on southwestern side of the area and is 365m away from the area. . There is no proposal to discharge any effluent into these water body.							
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.	<table><tr><td>Altitude of the area</td><td>133m from MSL</td></tr><tr><td>Ultimate Depth</td><td>50 m BGL</td></tr><tr><td>Ground water</td><td>63-66 m BGL.</td></tr></table>	Altitude of the area	133m from MSL	Ultimate Depth	50 m BGL	Ground water	63-66 m BGL.	
Altitude of the area	133m from MSL								
Ultimate Depth	50 m BGL								
Ground water	63-66 m BGL.								
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the. Project. Phasc-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for	Greenbelt Development Plan & Recommended Species proposed for Greenbelt Development are detailed in Section 4.4.5.4. 0.84.50 hectares of land are allotted for greenbelt development.							

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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.	From this proposed quarry the entire output will be transported to the consumers like crusher units for producing stone aggregates of different sizes. The number of trips per hour works out to 17 trips/day. The existing road can absorb this additional traffic due to this project. Details of the same are provided in Para 4.9, Chapter-IV.	
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Temporary Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in Section 2.11.5 of Chapter 2.	118
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.	At the conceptual stage the quarried-out land will be fenced and lower benches will be allowed to collect rain water to act as a temporary reservoir and Greenbelt development will be carried out on the top bench, unutilized areas and haul roads. Mine closure plan is detailed in Section 2.10 of Chapter 2.	115
35	Occupational Health impacts of the Project should be anticipated and	Details of occupational health and safety aspects	194 &

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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.	are given under the Section 4.4.7 & Section 10.4.	223
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 Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter No. 8.	216
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 30 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR 5.0 Lakh is allocated. Based on the demand of the people during public hearing, further funds will be allocated, if necessary.	
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Detailed Environmental Management plan and its implementation, etc., are furnished in Chapter X.	218
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.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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.	Project Cost is Rs.724.67 lakhs EMP Cost is 546.84Lakhs Capital Cost is Rs. 51.405 Lakhs Recurring Cost is Rs. 495.43 Lakhs for Ten years.	
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management plan are provided under section 7.3 of Chapter-7.	204
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.	Detailed in Chapter 8	216
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.	Yes, Complied	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	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		

SEIAA STANDARD CONDITIONS:

CLUSTER MANAGEMENT COMMITTEE			
1.	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	There are one existing quarry and this present proposed quarry (2 Existing + 1 Proposed), 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.	
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. It 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 three quarries proposed in the cluster area.	
5.	The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Risk management 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	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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.	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.	
AGRICULTURE & AGRO-BIODIVERSITY			
9.	Impact on surrounding agricultural fields around the proposed mining Area.	Agreed. It is described in the point no. 12 (e) of this ToR Compliance Annexure-1	
10.	Impact on soil flora & vegetation around the project site.	The chemical and physical characteristics of the soil is given in section 3.7.5 of Chapter 3. The anticipated impact and its mitigation measures for soil environment and biological environment are detailed in section 4.2.2 & 4.4.5 of Chapter 4 respectively.	148,172 & 187
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	There is no standing trees or vegetation within the mine lease area.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

12.	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	The ecological details have been provided in Section 3.7.7 under Chapter 3 and measures have been provided in Section 4.4.5 under Chapter 4.	153&187
13.	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	All the essential environmental protective measures will be followed by the proponent to manage the surrounding environment and restore the ecosystem, as discussed in Chapter 4.	169
14.	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The impact of project on the land environment has been discussed in Section 4.2.1 under Chapter 4.	170
FORESTS			
15.	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife.	Not Applicable.	
16.	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The impacts of the project on ecology and biodiversity have been discussed in Section 4.4.5 under Chapter 4.	
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.	
18.	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Not Applicable.	

WATER ENVIRONMRNT

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.	A detailed hydrogeological report will be included in the final EIA/EMP report.	
20.	Erosion Control measures.	There is no waste generation (OB) in this quarry has been envisaged. However, there may be erosion due the rainy season and that is limited within quarry area. The control measures are explained in Chapter 4.	172
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.	Complied. The study details are incorporated in Chapter 3. Anticipated impacts and its mitigation measures are detailed in Chapter 4.	119, 169
22.	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	There is no wastewater generation from this Quarry, so this is not applicable.	
23.	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Section 2.10, Chapter 2, provides the land-use pattern at present and at the end of the quarrying period. The post mining land use plan showing afforestation and water body is shown in Figure No- 2.8.	115

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

24.	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	The Flora and Fauna study covering 10 km radius are detailed in section 3.7.7 of chapter 3. The impacts anticipated with respect to the environment of the project area is very negligible and it will be minimized within the project area. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area.	
25.	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact of mining on soil environment has been discussed in Section 4.2.2 under Chapter 4.	172
26.	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	The anticipated impact and its mitigation measures for Water Environment are detailed in section 4.2.3 of Chapter 4.	173
27.	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including environmental stress. c) Sediment geochemistry in the surface streams.	Not applicable	
ENERGY			
28.	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	The measures taken to control noise, air, water, and dust have been given under Chapter 4.	169

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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.	Only the best equipment will be used, and it will be properly and regularly maintained. Regular vehicular emission tests will be conducted on the transport vehicles to ensure minimal carbon emissions. To further reduce carbon emissions, a good greenbelt plan has been planned.	-
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.		-

MINE CLOSURE PLAN

32.	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Detailed mine closure plan is given in section 7.5 of Chapter 7. Post mining land use pattern is shown in section 2.10 of Chapter 2.	115&214

EMP

33.	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Complied. The details are described in Chapter 10.	218
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.	Capital Cost is Rs. 51.405 Lakhs Recurring Cost is Rs. 495.43 Lakhs for Ten years. The breakup of the same is given in Table 10.2 of Chapter 10.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

RISK ASSESSMENT

35.	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Risk assessment and Management plan are detailed in section 7.2, chapter 7.	201

DISASTER MANAGEMENT PLAN

36.	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster Management plan are detailed in section 7.3, Chapter 7.	204

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.	There are no historical places, schools, cemeteries, temples, bird sanctuaries, and wildlife sanctuaries within 500 meters of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Pavali village, The letter copy enclosed as Annexure – 5.	
38.	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	The concerns raised during the public consultation and all the activities proposed will be updated in the final EIA report.	
39.	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro	The concerns raised during the public consultation and all the activities proposed will be updated in the final EIA report.	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	plastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Complied. The PP has framed detail solid waste management system for the project are and the same will be executed by proper awareness and sign boards. The sign boards will be in two language i.e., Vernacular language (Tamil) and common language (English). 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.	

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

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

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

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

Thiru. P.K.Sankar Raj proposes to operate Rough Stone & Gravel Quarry over an extent of 4.61.50 Ha. patta land in S.F. No.244/ of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu and ToR obtained vide TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025.

This proposed project is categorized under category "B1" Activity 1(a) (mining lease area in cluster situation). This cluster includes the one existing Quarry and this proposed Quarry. The existing and proposed quarries located within 500m radius are detailed in below Table.

Table – 1.1 Cluster Mines Details

Sl. No	Extent	Proponent	Status of lease
1	3.13.50 Ha	Thiru. P.K.Muthuraj	Existing
2	2.58.50 Ha	Thiru.R.Ramar	Existing
3	4.61.50 Ha	Thiru.P.K.Sankar Raj	Proposed
Total extent is 10.33.50 Ha including this proposed project			

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

As such Common EIA for the 2 projects falling in the cluster with assessment of impacts and EMP separately is carried out. Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016. Satellite image of Quarries in Cluster is shown in Fig 1.1.

As per MoEF&CC OM: F.No.L-11011/175/2018-IA-II(M), dated 12.12.2018, the common EIA/EMP report has to be prepared for the cluster area based on ToR recommended by SEIAA. Therefore, the applicant applied for ToR through Parivesh website vide online proposal no. SIA/TN/MIN/428657/2024 Dated 09.05.2024. The ToR proposal was placed in 390th SEAC meeting, dt 07.07.2024 and 640th SEIAA meeting, dated 19.07.2024. Then ToR has been issued by the SEIAA vide TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025 to prepare the draft EIA report as per the recommended ToR for conducting Public hearing and obtaining Environmental Clearance from the SEIAA.

Figure1.1 Satellite Image showing cluster quarries



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1 IDENTIFICATION OF PROJECT

Table -1.2 Project Identification

Name of the Project	Thiru.P.K.Sankar Raj Rough stone & Gravel Quarry
S.F No.	244/1
Location of the Project	Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Extent	4.61.50 Ha.
Type of Land	Patta Land

1.2.2 IDENTIFICATION OF PROJECT PROPONENT

Table -1.3- Details of Project Proponent

Name of the Project Proponent	Thiru.P.K.Sankar Raj
Communication address	S/o. Periya Kengaiya No-4/328, Chandragiripuram, Pavali, Virudhunagar – 626103.
	pksankarraj1970@gmail.com
Mobile No.	7373713581

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 NATURE AND SIZE OF THE PROJECT

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining Method by jack hammer drilling, slurry blasting by forming 5.0 m bench height and 5.0 m bench width. Excavator and tippers are proposed for Loading and transportation.

Table – 1.4 Brief Descriptions of the Project

Name of the Quarry	Thiru. P.K.Sankar Raj Rough Stone & Gravel Quarry
Toposheet No	58G/14
Latitude between	09°35'43.22"N to 09°35'52.58"N
Longitude between	77°54'08.06"E to 77°54'15.19"E
The altitude of the area	133 m (MSL)
Proposed Depth of Mining	50m (BGL)

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Geological Resources	Rough Stone	Gravel
	20,26,080 m ³	2,25,120 m ³
Mineable Reserves	8,89,905 m ³	1,87,500 m ³
Proposed Production	8,89,905 m ³	1,87,500 m ³
Production For First Five Years	7,89,215m ³	1,87,500 m ³
Production For Second Five Years	1,00,690m ³	-
Ultimate pit Dimension	50 m BGL	
Water Level in the area	66 m BGL	
Method of Mining	Opencast method of mechanized	
Topography	The area applied for quarry lease is exhibits almost plain covered by Gravel formation. The massive Granitic Gneiss formation is noticed below 5m (Avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 133m (maximum) from MSL. Water table is found at a depth of 66m in summer and 63m in rainy seasons. Temperature of the area is reported to be 18 ⁰ C to a maximum of 42 ⁰ C during summer. Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons.	
Machinery Proposed	Jack Hammer	10 Nos
	Compressor	3 Nos
	Excavator with bucket and rock breaker	2Nos
	Tipper (5/10 T)	5 Nos
Proposed Manpower Development	34 Nos	
Water Requirement	5 KLD	
Greenbelt Development	The safety zone of 0.84.50 ha will be developed with about 1100 nos of plantation.	
Project Cost	Rs. 724.67lakhs	
EMP Cost	Total EMP Cost for 10 years is 546.84 lakhs i.e., Rs.51.405 Lakhs of Capital + Recurring cost Rs. 495.43 lakhs for Ten years	
CER Cost	Rs.8.0 Lakhs will be spent as CER Cost.	

1.3.2 NATURE OF THE PROJECT

S. NO	DESCRIPTION	DETAILS
1.	Sector	1(a), Non-Coal Mining
2.	Type	Fresh Quarry
3.	Category	B1
4.	Mineral to be Mined	Rough Stone and Gravel
5.	Major/Minor Mineral	Minor

1.3.3 LOCATION OF PROJECT

The proposed Quarry lease area is situated at S.F.No. 244/1, Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu. The area lies in the north latitude of 09°35'43.22"N to 09°35'52.58"N and eastern longitude of 77°54'08.06"E to 77°54'15.19"E. Location of the proposed project is shown in Figure 2.1 and the satellite imagery of the project site is shown in Figure 2.2.

1.4 IMPORTANCE OF THE PROJECT TO THE REGION

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

1.5 REGULATORY COMPLIANCES

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

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

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

1.5.1 PRESENT LEGAL STATUS

Table 1.5 – Present Legal Status

Description	Issuing Authority	Status	Letter number	Date	Reference
Precise Area Communication	Assistant Director, Department of Geology and Mining, Virudhunagar	Received	Rc.No. KV1/683/2024	04.10.2024	Annexure - 2
Mine Plan Approval Letter	Assistant Director, Department of Geology and Mining, Virudhunagar	Approved	Rc.No. KV1/683/2024	24.10.2024	Annexure-3
District Survey Report	Collector, Dept. of Geology and Mining, Virudhunagar	Authenticated	As per S.O. 3611(E) dated 25.07.2018	19.03.2019	Link: https://cdn.s3waas.gov.in/s3c86a7ee3d8ef0b551ed58e354a836f2b/uploads/2019/06/2019061311.pdf
500m radius Cluster Letter	Assistant Director, Department of Geology and Mining, Virudhunagar	Obtained	Rc.No. KV1/683/2024	25.10.2024	Annexure-4
VAO NOC for features within 300m radius	Village Administrative Officer, Pavali village	obtained	-	22.02.2024	Annexure-5

1.5.2 SCREENING

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

1.5.3 SCOPE OF THE STUDY

In line with the prescribed Terms of Reference (TOR), the area comprising 10 km radius around the proposed mine lease boundary is considered as the study area. The EIA/EMP report has been prepared following the generic structure specified in the EIA Notification 2006. The detailed studies have been conducted as per prescribed Standard TOR issued by SEIAA, Tamil Nadu TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025. The point wise compliance for the ToR has been incorporated in this EIA/EMP report.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for this applied project area. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the Period of October to December 2024 for various environmental components so as to assess the anticipated impacts due the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to this proposed project.

The scope of study broadly covered as below,

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

1.6 NEED AND JUSTIFICATION OF THE PROJECT

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

1.7 STRUCTURE OF THE REPORT

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

1. Introduction

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

2. Project Description

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

3. Description of the Environment

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

4. Anticipated Environmental Impacts & Mitigation Measures

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

5. Analysis of Alternatives (Site And Technology)

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

6. Environmental Monitoring Program

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

7. Additional Studies

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

8. Project Benefits

This chapter presents the benefits from this project

9. Environmental Management Plan

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

10. Summary and Conclusion

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

11. Disclosure of Consultant

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

2.0 PROJECT DESCRIPTION

2.1 TYPE OF THE PROJECT

The proposed activity is the extraction of Rough Stone by open cast mechanized mining method.

This project proposed to produce 8,89,905 m³ of Rough Stone and 1,87,500m³ of gravel and for the period of 10 years with ultimate depth up to 50 m.

2.2 NEED FOR THE PROJECT

Rough stone is one of the important materials for the building construction. The rough stone is used as both as coarse aggregate and fine aggregate after the proper sizing of stone. The coarse and fine aggregate are essential for preparing concrete which is used in foundation, beam, column, roof slab work of the buildings. The infrastructure is the sign of development of nation. So it is very need to excavate the rough stone for economic and infrastructure development of our Nation.

2.3 LOCATION OF THE PROJECT

This is a Rough Stone and Gravel Quarry located in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State. The area lies in the north latitude of 09°35'43.22"N to 09°35'52.58" and eastern longitude of 77°54'08.06"E to 77°54'15.19"E and Toposheet number 58G/14. Location of the proposed project is shown in Figure 2.1 the satellite imagery of the project site is shown in Figure 2.2.

This proposed project area is Patta land & does not fall within 10 km radius of any Eco – sensitive zone, Wild life Sanctuary, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves. The M.L area details are presented in below Table.

Table 2.1 Boundary Coordinates of the Project

Corners	Co- ordinates	
	Latitude	Longitude
1	09°35'43.90"N	77°54'08.06"E
2	09°35'49.12"N	77°54'09.04"E
3	09°35'52.58"N	77°54'09.87"E
4	09°35'51.47"N	77°54'15.19"E
5	09°35'43.22"N	77°54'13.37"E
6	09°35'43.39"N	77°54'11.70"E

Table 2.2 Mine Lease Area and its Ownership

Location	S.F. No	Area in Ha	Name of the owner	Patta land
Pavali Village, Virudhunagar Taluk, Virudhunagar	244/1	4.61.50	Thiru. P.K.Sankar Raj	Patta no. 2537,
Total		4.61.50		

Table 2.3 Site Connectivity

Nearest Roadway	There is an existing road from the area leads to Pavali- Moolipatti village road on north side of the area. The National Highway (NH-44) Salem – Tirunelveli is about 4.1km on Eastern side of the area. The State Highway (SH-182) Alagapuri - Virudhunagar 0.9m on northeastern side of the area.
Nearest Village	Pavali – 1.4 km – NE Kunthalpatti – 2.2 km - NW Kumaralingapuram– 1.2 km – SE Amathur – 4.9 km - SW
Nearest Railway	Virudhunagar– 5.0Km - E The Nearest Railway line is Virudhunagar to Sivakasi 5.4Km on southern side of the area.
Nearest Airport	Madurai Airport – 32.0km - NE

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Figure 2.1 Location Map

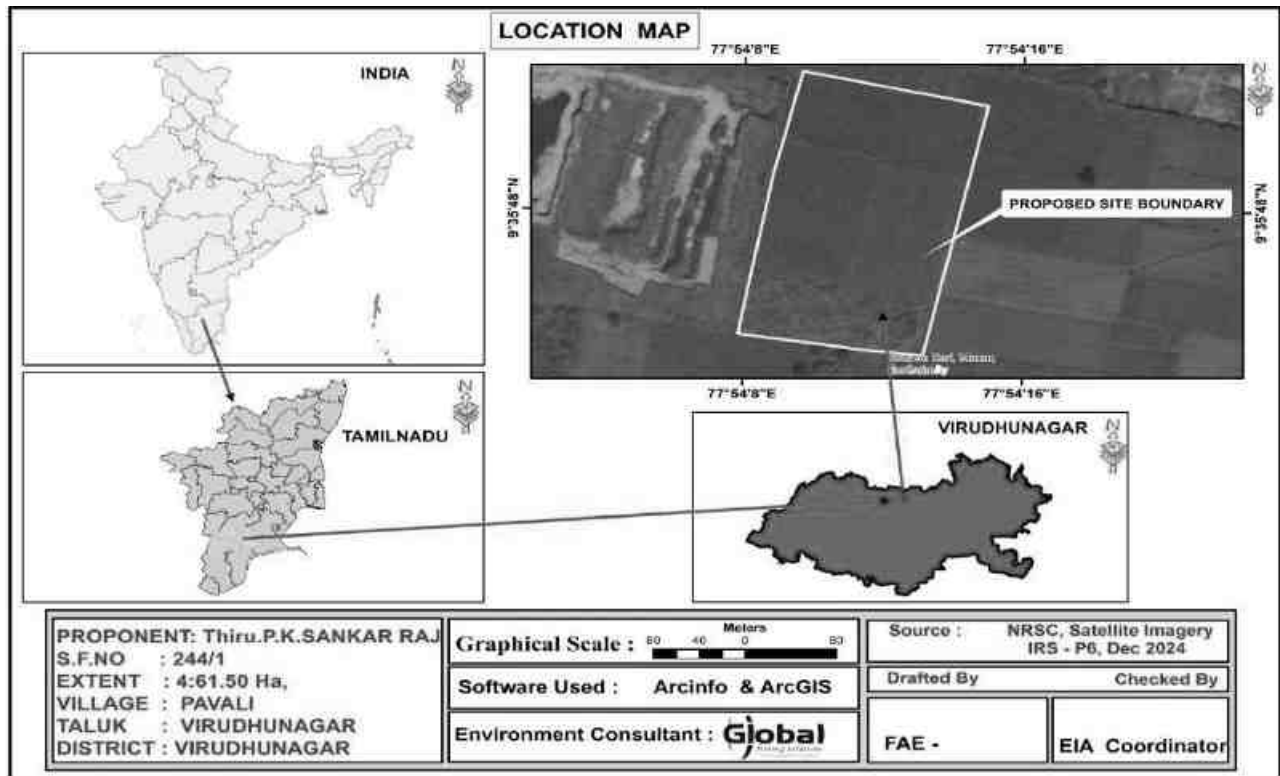
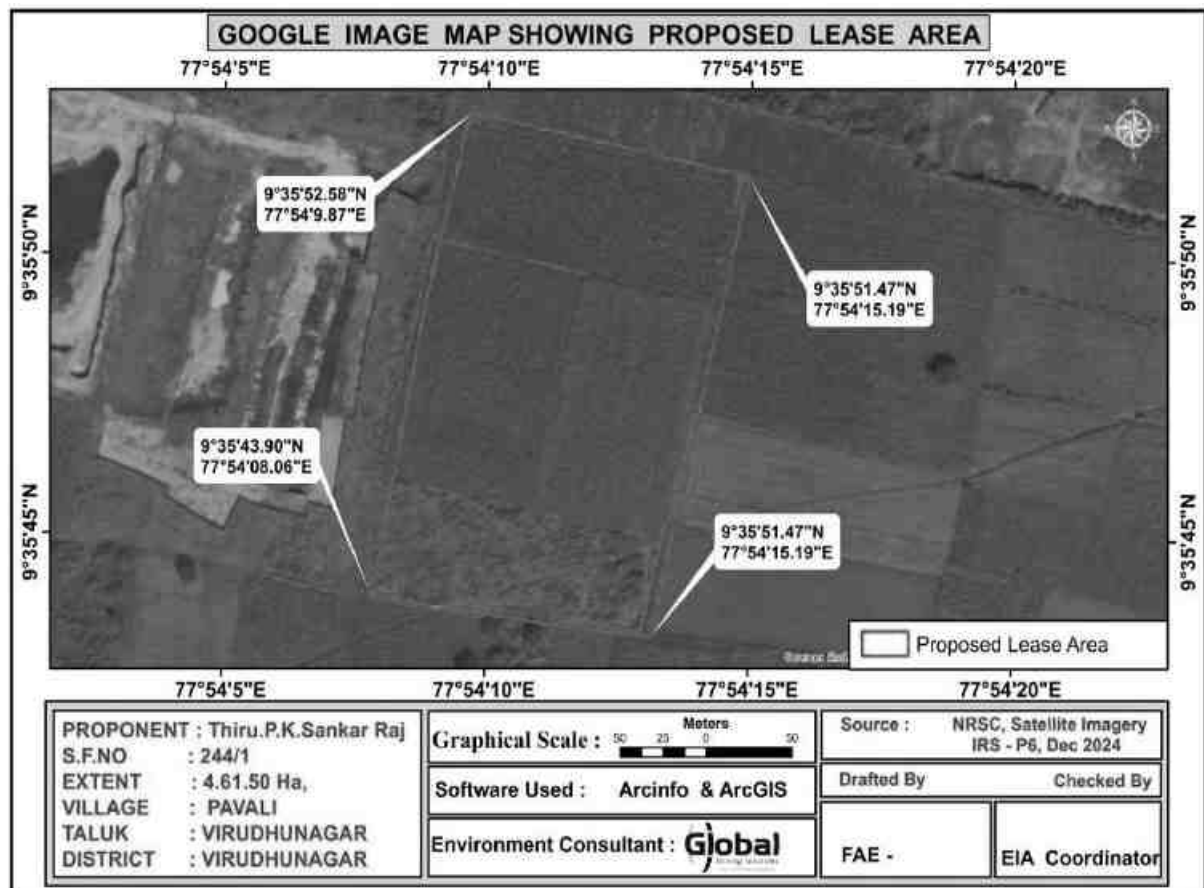


Figure 2.2 Google Image of the project site



Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Figure 2.3 Lease Plan

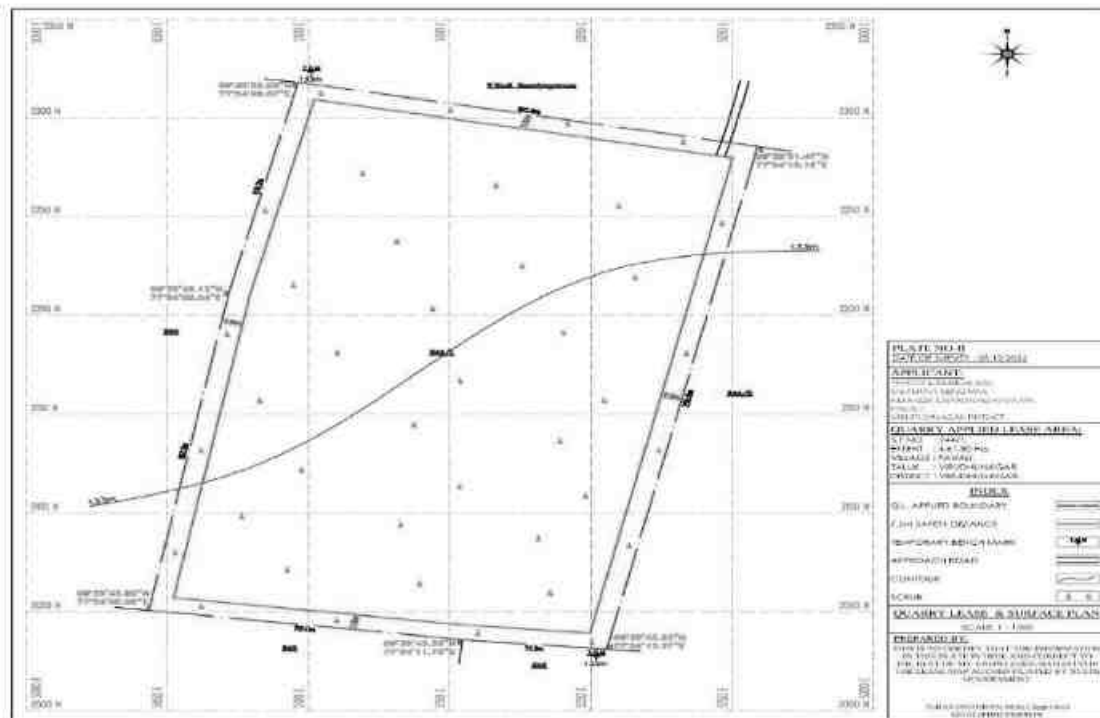
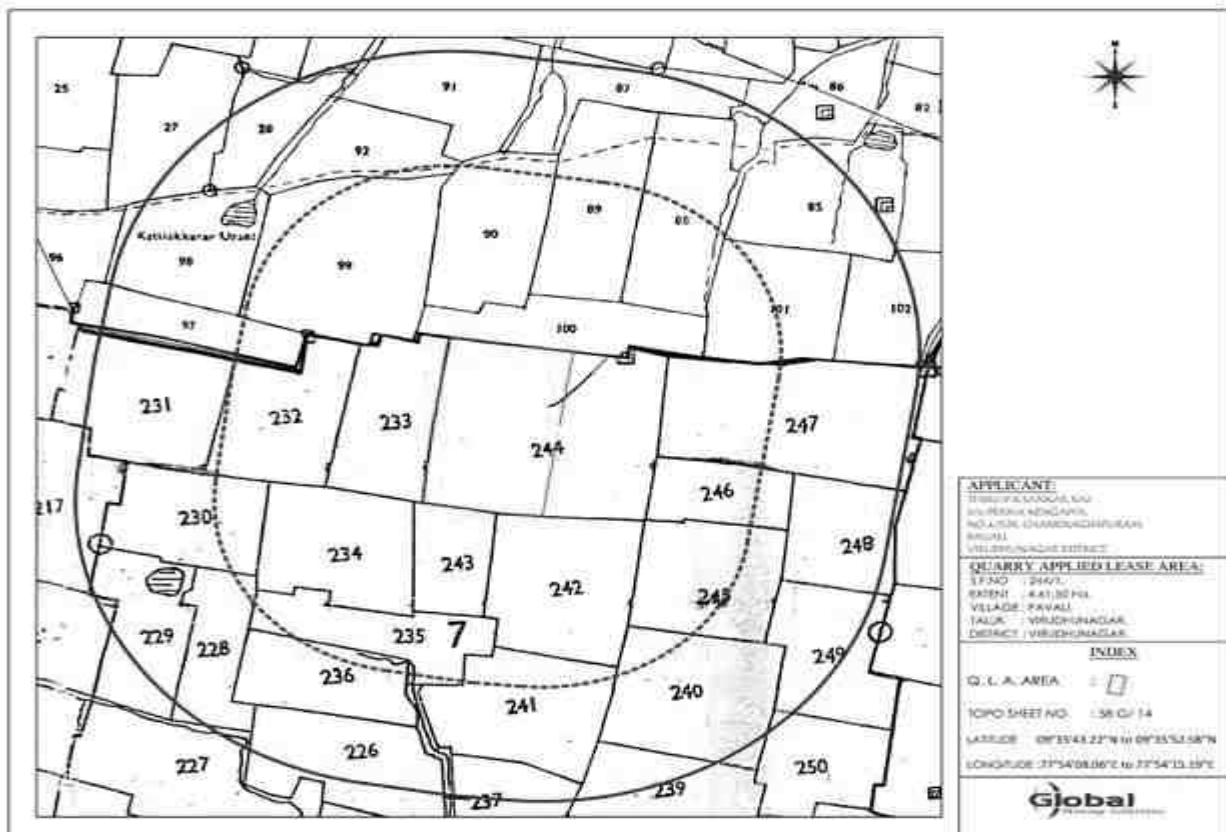
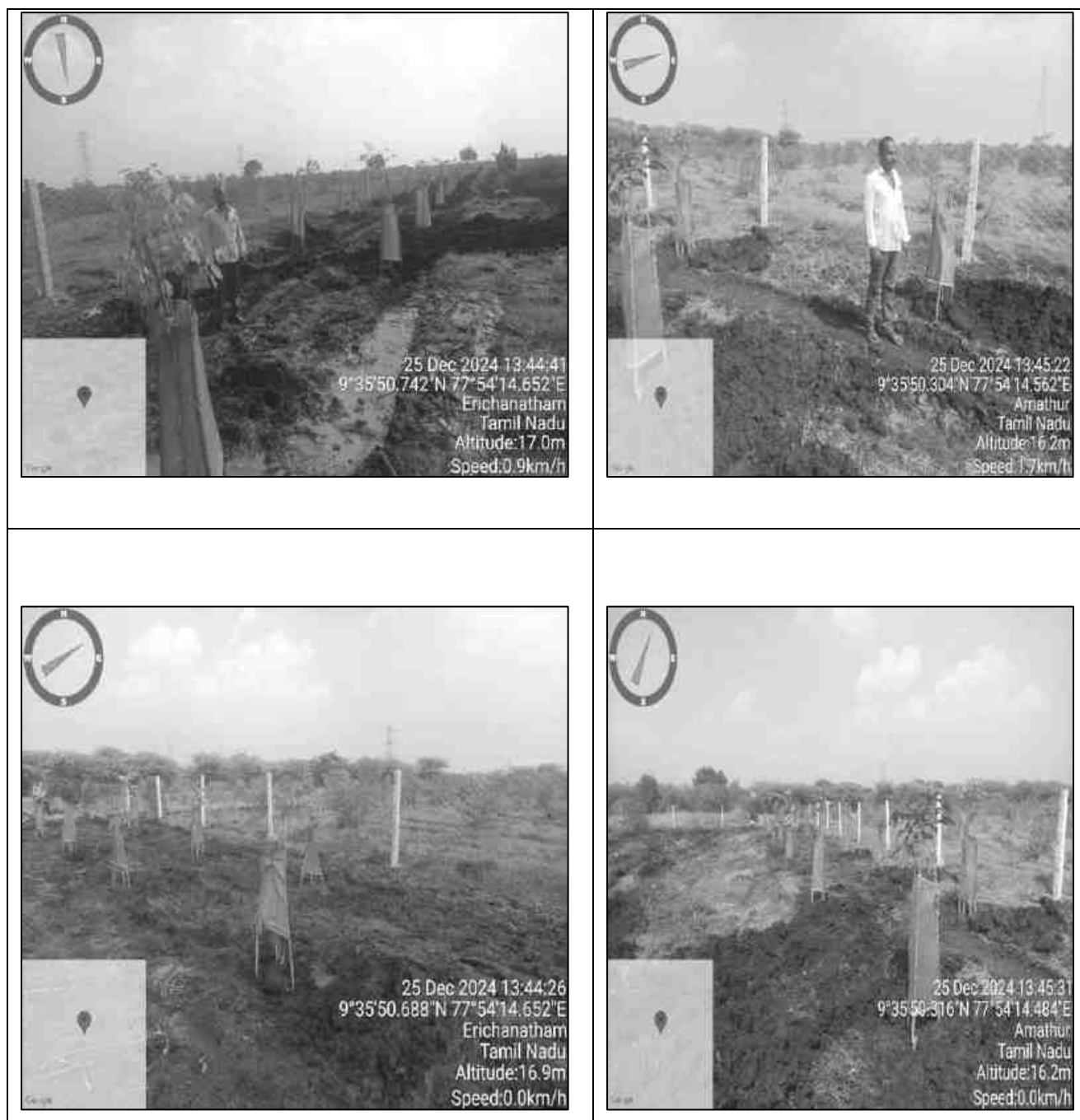


Figure 2.4 Village Map



Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Figure 2.5 Site Photographs



2.4 LAND USE PATTERN OF THE PROJECT AREA

The entire project site is Patta land and the allotted to PP for Rough stone & Gravel quarry. The land use pattern of the mine lease area as of today and conceptual stage given in Table No. 2.4.

Table 2.4 Land use pattern of the Project area

Sl. No	Land Use	Present Area (Hect)	Area in use during the end of the Scheme period (Hect)
1.	Quarrying Pit	Nil	3.75.00
2.	Infrastructure	Nil	0.01.00
3.	Roads (Temporary)	Nil	0.01.00
4.	Green Belt	Nil	0.84.50
5.	Unutilized	4.61.50	Nil
Total		4.61.50	4.61.50

2.5 SIZE AND MAGNITUDE OF THE OPERATION

The proposed activity is the extraction of Rough Stone by open cast mechanized mining method over an extent of 4.61.50 Ha and to produce 8,89,905 m³ of Rough Stone and 1,87,500 m³ of Gravel for the period of 10 years with ultimate depth upto 50m (below ground level). The details of geological and mineable reserves in the lease area have been provided below in the subsequent sub section.

2.6 TOPOGRAPHY AND DRAINAGE

The area applied for quarry lease is exhibits almost plain covered by Gravel formation. The massive Granitic Gneiss formation is noticed below 5m (Avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 133m (maximum) from MSL. No major river is found nearby the lease applied area.

2.7 GEOLOGY

2.7.1 REGIONAL GEOLOGY

The geology of the district is mainly underlain by the rocks belonging to hard crystalline rock masses of Archaean age. The Archaean rocks in this area are represented by rocks of eastern ghat complex comprising Charnockites, Migmatite complex of composite gneiss. The entire area is covered by metamorphic crystalline rocks of Charnockite, composite gneiss of Archaean age. These rocks are highly metamorphosed and have been subjected to severe folding, crushing and faulting. Charnockites group is occupied by North and Southern part of the Tondiar River Basin. The other rock type is encountered by composite granitic gneiss of epidote hornblende biotite gneiss and hornblende biotite gneiss are occupy in the middle portion of the basin. Charnockite group occupies the high ground as well as plain and it is poorly weathered and jointed. They are generally black grey to dark grey in colour medium to coarse grained texture, and generally massive and un-foliated. A gneissic rock occurs as linear bands in the middle portion of the area and is highly migmatized. Mostly, micaceous with bands of granites, pegmatites, quartz veins and the rock are well foliated. The Hornblende biotite gneiss forms the country rock of the area and epidote hornblende gneiss (Proterozoic age) occurs as small isolated outcrops. The crystalline formations are Charnockite; Granitic Gneiss of Archean ages have been intruded by dolerite dykes and pegmatite veins. These rocks are highly metamorphosed and have been subjected to very severe folding, crushing and faulting. The crystalline rocks are subjected to tectonic activities under various orogenic cycles resulting in the development of secondary structures such as joints, fissures and cleavages.

2.7.2 LOCAL GEOLOGY

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

Quartz and Feldspar with some ferromagnesian minerals. The Granitic Gneiss is part of peninsular Gneisses, a high- grade metamorphic rock.

The strike of the Granitic Gneiss formation is N45° E – S45°W with dipping towards SE60°. The general geological succession of the area is given as under.

	<u>AGE</u>	<u>ROCK TYPE</u>
↑	Recent	- Gravelly soil Unconformity
	Archaean	- Dolerite dyke, Charnockite Granitic Gneiss. Peninsular Gneissic complex and Calc Gneiss

2.8 RESOURCES AND RESERVES

The Geological and Recoverable reserves are estimated by Cross Sectional method.

Table 2.5 Geological Resources

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel formation in m ³	Geological Resources of Rough stone in m ³
XY-AB	I	268	168	5	225120	225120	
	II	268	168	5	225120		225120
	III	268	168	5	225120		225120
	IV	268	168	5	225120		225120
	V	268	168	5	225120		225120
	VI	268	168	5	225120		225120
	VII	268	168	5	225120		225120
	VIII	268	168	5	225120		225120
	IX	268	168	5	225120		225120
	X	268	168	5	225120		225120
Total						225120	2026080

Gravel Formation : 2,25,120 m³

The Geological Resource of Rough Stone : 20,26,080 m³

2.8.1 MINEABLE RESERVES

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

Table 2.6 – Available Mineable Reserves

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	250	150	5	187500	187500	
	II	237	137	5	162345		162345
	III	227	127	5	144145		144145
	IV	217	117	5	126945		126945
	V	207	107	5	110745		110745
	VI	197	97	5	95545		95545
	VII	187	87	5	81345		81345
	VIII	177	77	5	68145		68145
	IX	167	67	5	55945		55945
	X	157	57	5	44745		44745
Total						187500	889905

The Total Mineable Reserves:

Gravel Formation : 1,87,500m³ m³

The Mineable Resource of Rough Stone : 8,89,905m³ m³

2.9 PROCESS DESCRIPTION AND TECHNOLOGY

2.9.1 PROCESS DESCRIPTON

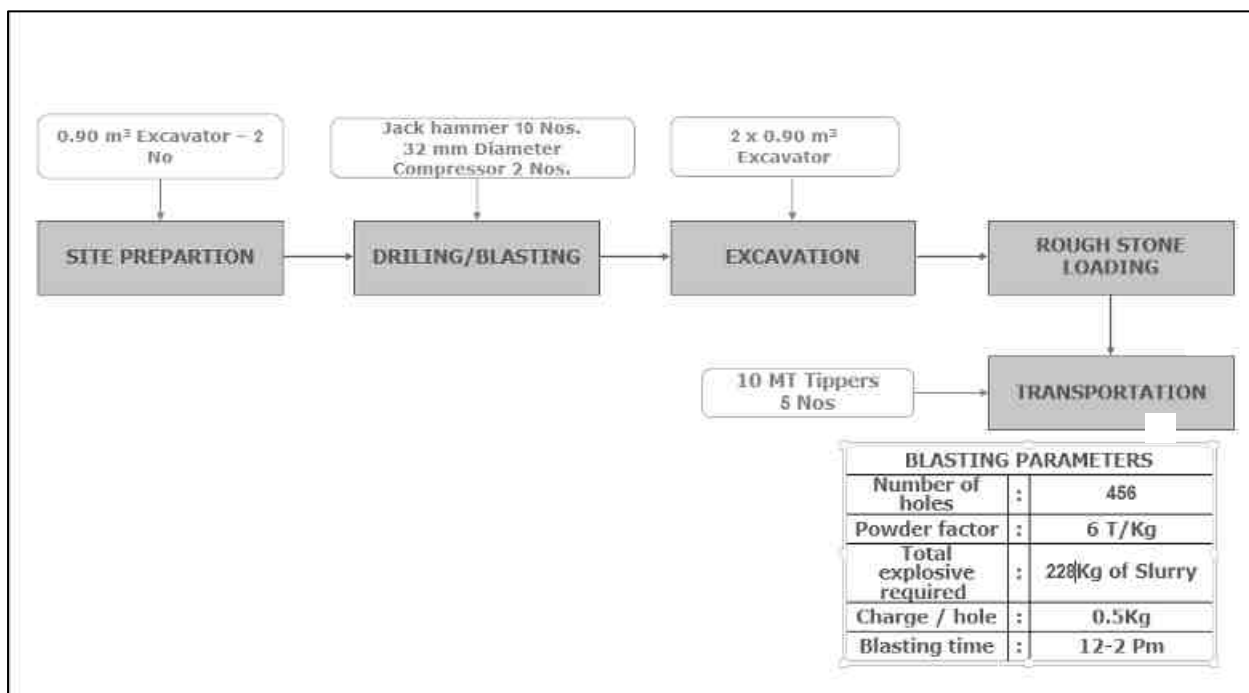
The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone and Gravel Quarrying in contrast to other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

- Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy buyers.

- Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.
- The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators.

The process flow diagram is provided in Figure 2.6. The Geological and production & Year wise Development plan and cross section for the 10 years period and conceptual plan and conceptual cross section is given in Figure No. 2.7 and Figure No. 2.8.

Figure 2.6 Process Flow Diagram



Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

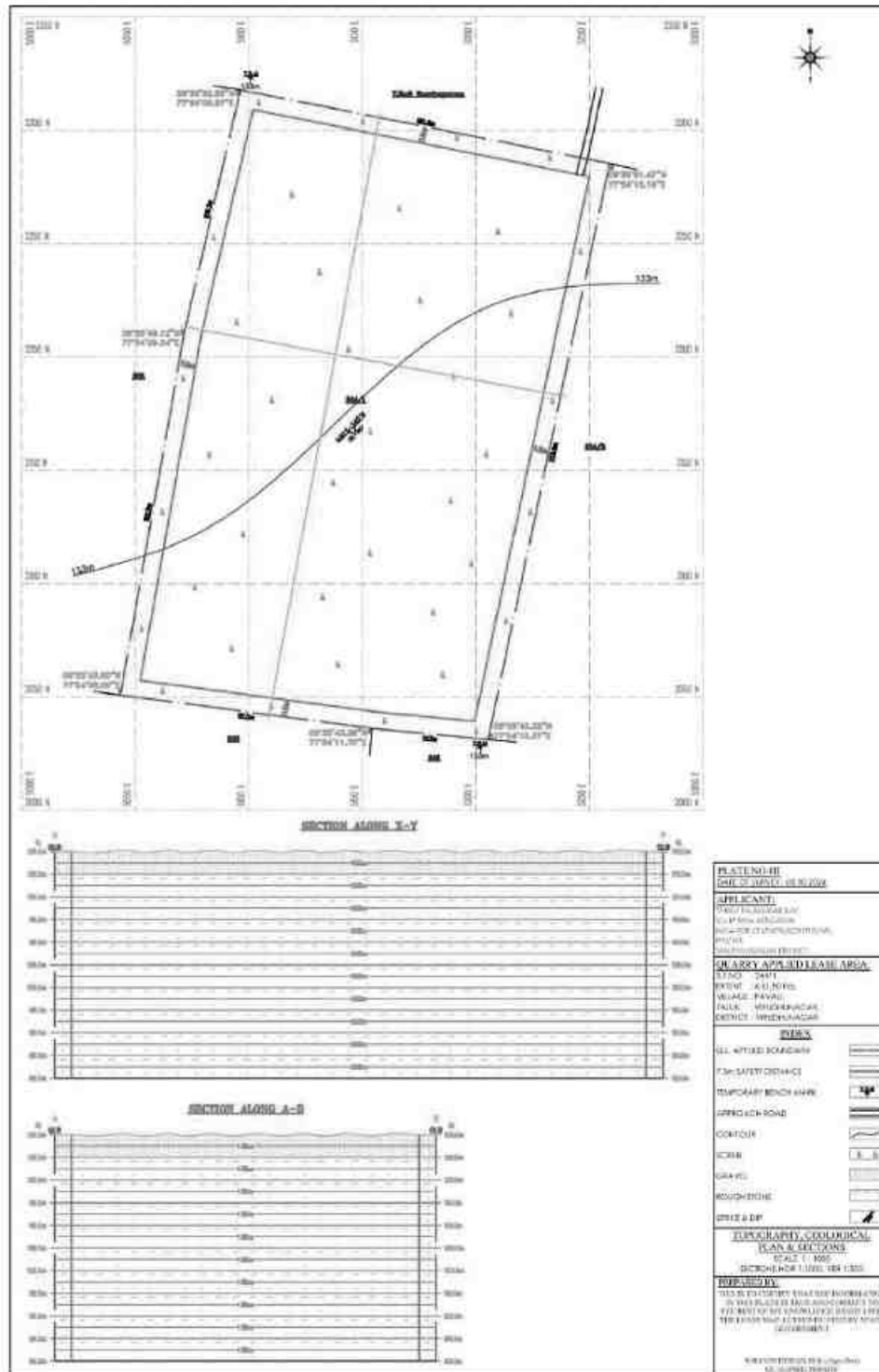


Figure 2.7 Geological Plan & Sections

Table 2.7 – Machinery Details

S.NO	Name of the Equipment	Capacity	Requirement
1	Excavator with Rock breaker attachment	0.90 m3	2
2	Compressor	400 psi	3
3	jack hammer	32mm Dia	10
4	Tipper	5/10 T	5

2.9.2 DRILLING AND BLASTING PARAMETERS

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

Table 2.8 – Drilling and Blasting Details

Diameter of the hole	32-36 mm
Spacing	0.6m
Depth	1 to 1.5 m
Burden of hole	0.6m
Pattern of hole	Zigzag
Inclination of hole	70 ⁰ from horizontal
Number of holes	456
Powder factor	6Ts/Kg of Explosives
Total explosive required	228 Kg slurry Explosives
Charge / hole	0.5Kg
Blasting time	12-2 Pm

2.9.3 TYPE OF EXPLOSIVE

Slurry explosive is proposed for shattering and heaving effect for removal of rough stone. No deep hole drilling or primary blasting is proposed. The Project Proponent have agreement with M/s.Sri Balan Explosives to carry out the blasting operation for the proposed quarry. The Blasting Agreement is enclosed as Annexure – 10.

2.9.4 STORAGE OF EXPLOSIVES

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

2.9.5 YEARWISE PRODUCTION SCHEDULE

The year wise production schedule upto lease period of first 5 years is given below, the year wise production plan is given in Figure 2.7.

Table 2.9(A) – Yearwise production For First Five Years

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	50	150	5	37500	37500	
		II	43	137	5	29455		29455
		III	38	127	5	24130		24130
		IV	33	117	5	19305		19305
		V	28	107	5	14980		14980
		VI	23	97	5	11155		11155
		VII	18	87	5	7830		7830
		VIII	13	77	5	5005		5005
	Total						37500	111860
II	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250
III	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250
IV	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250
V	XY-AB	I	50	150	5	37500	37500	
		II	44	137	5	30140		30140
		III	39	127	5	24765		24765
		IV	34	117	5	19890		19890
		V	29	107	5	15515		15515
		VI	24	97	5	11640		11640
		VII	19	87	5	8265		8265
		VIII	14	77	5	5390		5390
	Total						37500	115605
Grand Total							187500	789215

Table 2.9 b - Yearwise production For Second year Five Years

Year	section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m3	Mineable Reserves of Rough stone in m3
VI	XY-AB	IX	60	67	5	20100	20100
	Total						20100
VII	XY-AB	IX	60	67	5	20100	20100
	Total						20100
VIII	XY-AB	IX	47	67	5	15745	15745
		X	15	57	5	4275	4275
							20020
IX	XY-AB	X	71	57	5	20245	20245
	Total						20245
X	XY-AB	X	71	57	5	20245	20245
	Total						20245
Grand Total							100690

The Peak production quantity of Rough Stone – 7,89,215m³ (First 5year)

The Peak production quantity of Rough Stone – 1,00,690m³ (Second 5year)

Total Gravel Quantity – 1,87,500 m³

2.10 CONCEPTUAL MINING PLAN / FINAL MINE CLOSURE PLAN

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

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc. Conceptual cross section and mine closure plan is given in Figure 2.8.

Table 2.10 - Ultimate Pit Dimension

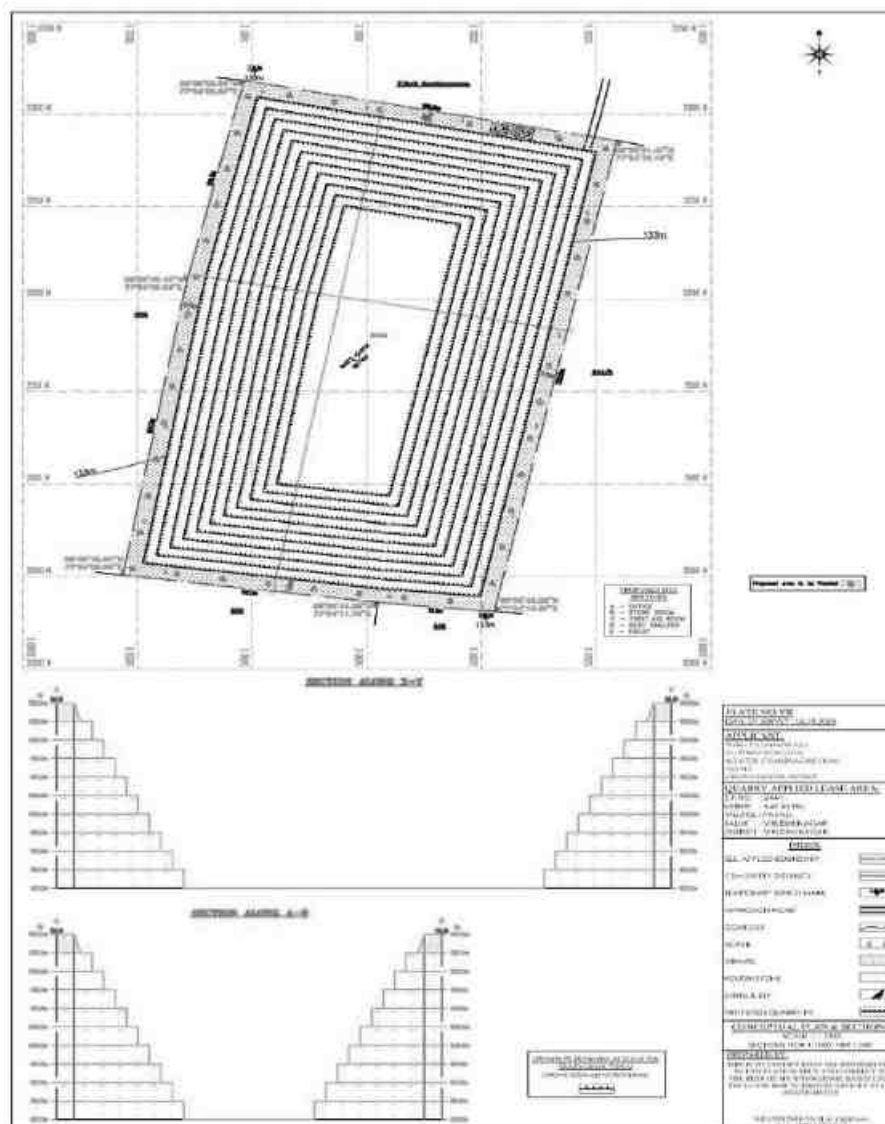
Ultimate Pit dimension (M) end of Mining plan Period			
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)
I	250	150	40m BGL
Ultimate pit dimension End of the lease period			
I	250	150	50mBGL

Land use pattern of the Project area

Sl. No	Land Use	Present Area (Hect)	Area in use during the end of the Scheme period (Hect)
1.	Quarrying Pit	Nil	3.75.00
2.	Infrastructure	Nil	0.01.00
3.	Roads (Temporary)	Nil	0.01.00
4.	Green Belt	Nil	0.84.50
5.	Unutilized	4.61.50	Nil
Total		4.61.50	4.61.50

- The Safety Zone of 0.84.50 Ha., will be planted and maintained with 1100 numbers of saplings. In the conceptual stage, the quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

Figure 2.8 Conceptual Plan And Cross Section



2.11 PROJECT REQUIREMENT

2.11.1 WATER REQUIREMENT AND SOURCE

The total water requirement estimated for the quarry is 5.0 KLD. The required water will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose.

Table 2.11 Details of Water requirement

Activity	Water Requirement in KLD
Drinking & Domestic	1.0
Dust Suppression	2.0
Greenbelt Development	2.0
Total	5.0

2.11.2 POWER REQUIREMENT

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

2.11.3 EMPLOYMENT GENERATION

The project will provide employment opportunities totally to 34 persons directly and indirectly.

Table 2.12 EMPLOYMENT GENERATION

Skilled	Operator	10 Nos
	Mechanic	1 No
	Mines Manager	1 No
	Fore Man / Mate	2 Nos
Semi-Skilled	Driver	5 Nos
Unskilled	Labours	15 Nos
Total		34 Nos

2.11.4 INFRASTRUCTURE REQUIREMENT

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

2.11.5 PROJECT COST

The total project cost of this Rough Stone and Gravel Quarry is Rs. 724.67 Lakhs.

PROJECT IMPLEMENTATION SCHEDULE

The proponent proposes to implement the production immediately after obtaining all the statutory approvals. The commercial operation will commence after the grant of Environmental Clearance. CTO and CTE will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the Environmental Clearance will be compiled before the start of mining operation.

3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

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

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

3.2 STUDY AREA

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

- Micro-meteorological monitoring in one of the representative locations.
- Ambient air quality study comprising gaseous, particulate matter at 7 different locations.
- Water quality analysis in 7 different locations (Ground Water)
- Noise levels monitoring in 7 different locations
- Soil quality analysis in 7 locations.
- Flora & Fauna status.
- Land use & Land Cover.
- Socio-economic survey.

3.3 STUDY PERIOD

The above-mentioned studies have been carried out systematically and meticulously as per relevant IS codes, CPCB, MoEF&CC guidelines during October to December 2024.

3.4 MONITORING LAB

The baseline information for air, water, noise, and soil was analysed by M/s. Shrient Analytical and Research Labs Pvt Ltd, # 416/15, Dharga Road, Perungalathur, West Tambaram, Chennai – 600 045. (Accredited by NABL as ISO/IEC/17025:2017) between October to December 2024.

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

A Site survey has been conducted to identify and list structures located within a 300 m radius from the proposed Quarry. The details structures located within 300 m radius are given in below table and Figure 3.1.

1. Structures Details

Table 3.1 Structures within 300 m radius

Range	No. of Structures	Structures Details
0 – 50 m	NIL	-
50-100 m	NIL	-
100-150	NIL	-
150 – 200 m	NIL	-
200 – 250 m	NIL	-
250 – 300 m	NIL	-

There are no structures located within 300m radius of the project site.

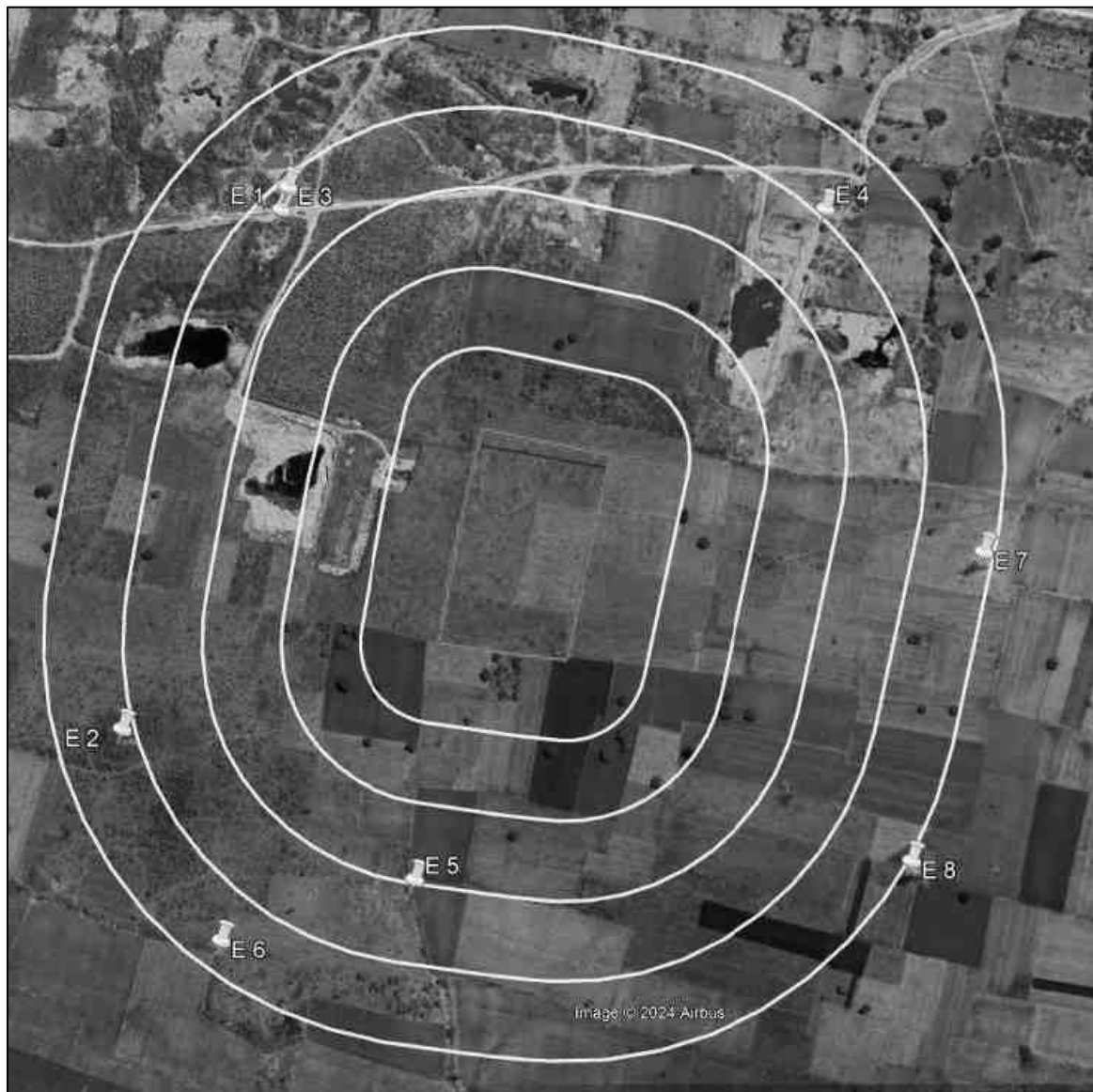


Figure 3.1 Google Image showing structures located within 300 m radius

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

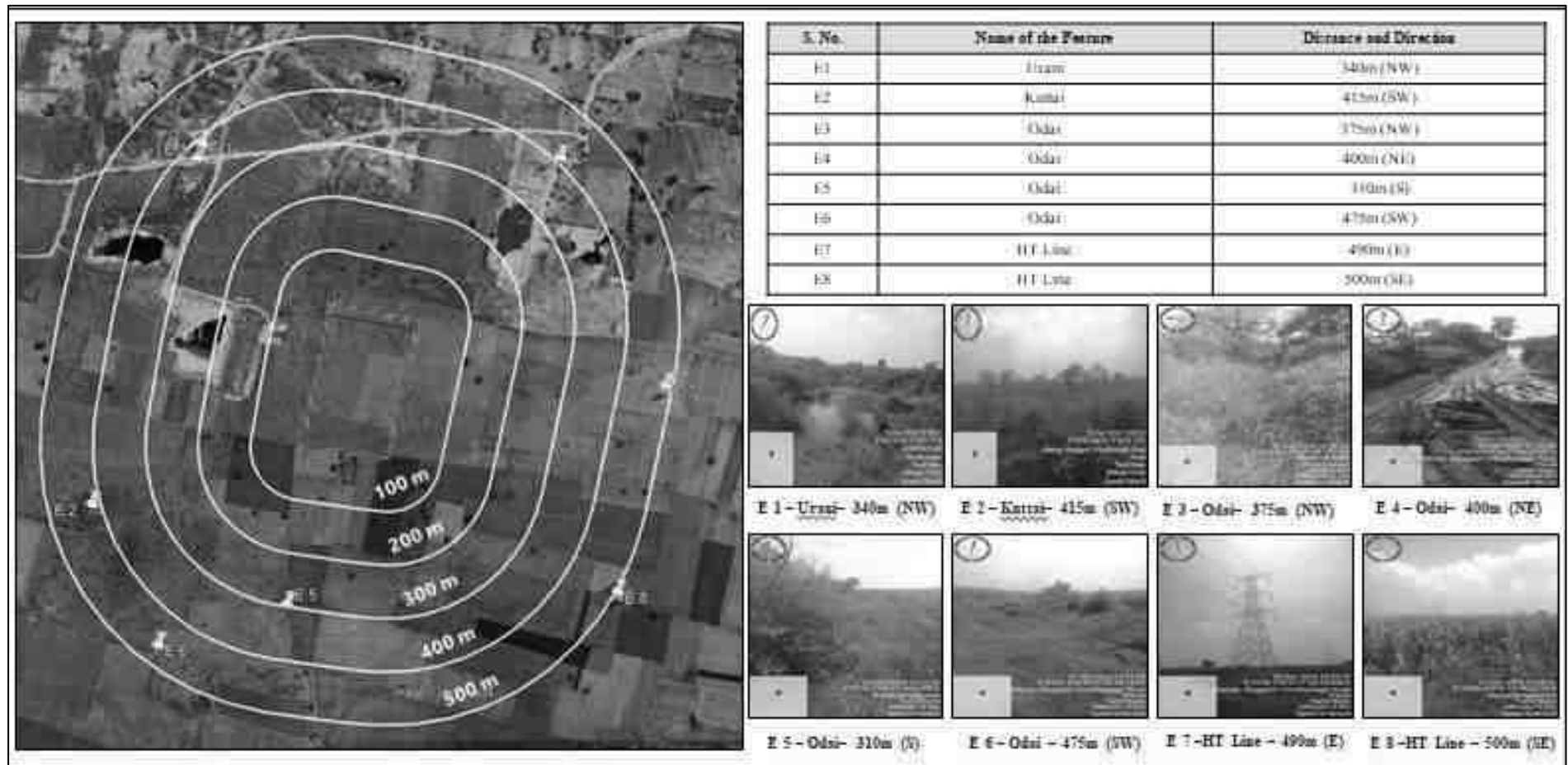


Figure 3.2 Existing Features Within 500m Radius

3.6 ENVIRONMENTAL SETTINGS OF THE PROJECT

The Environmental settings of the project covering 10km radius of study area is given in Table 3.2. The study area map is given in Figure- 3.5 and satellite image showing 10 km radius is given in Figure 3.4.

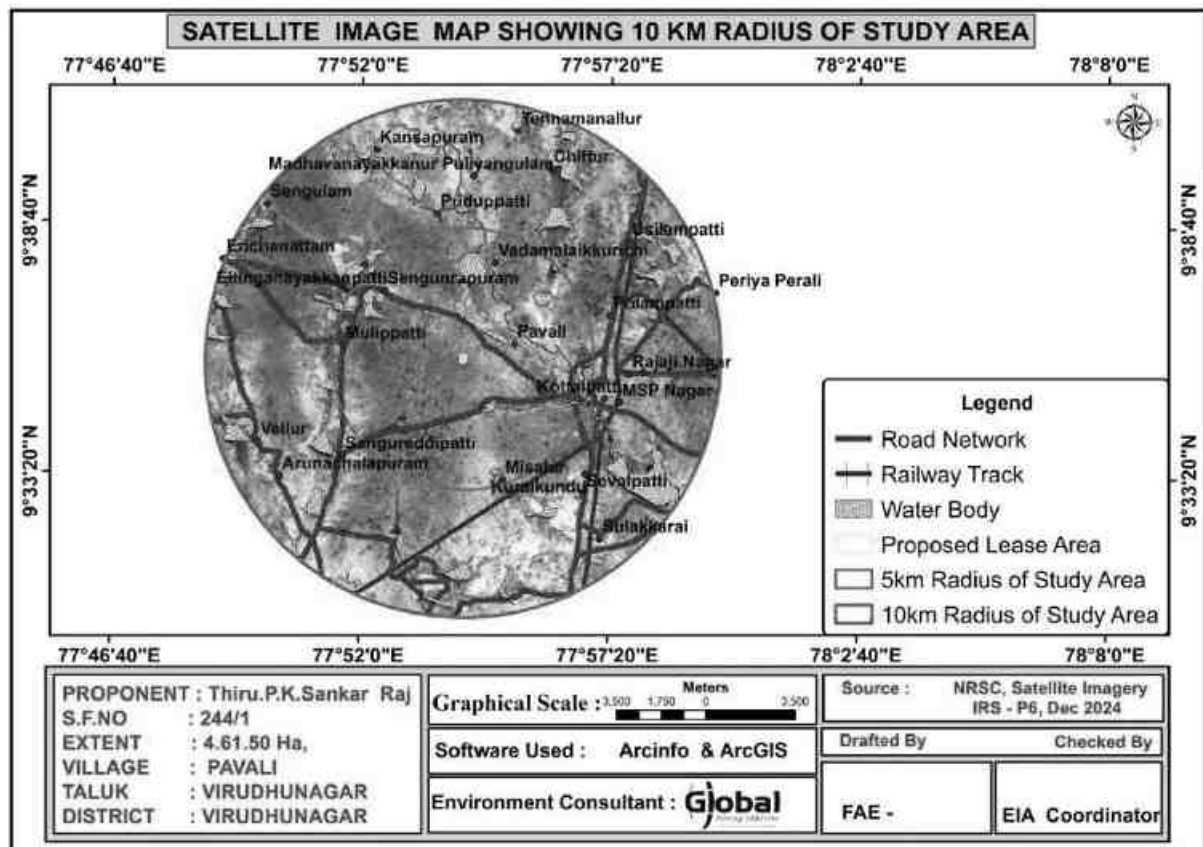
Table 3.2 Environmental Settings of the Study Area – 10 km radius

S.NO	Particulars	Description
1.	Latitude & Longitude	Latitude: 09°35'43.22"N to 09°35'52.58"N Longitude: 77°54'08.06"E to 77°54'15.19"E
2.	The altitude of the area	133 m from MSL
3.	Topography	Plain Terrain
4.	Land use of M.L. area	Patta Land
5.	Extent of the Lease area	4.61.50 Ha.
6.	Nearest Highway	The National Highway (NH-44) Salem – Tirunelveli is about 4.1km on eastern side of the area. The State Highway (SH-182) Alagapuri - Virudhunagar is about 0.9Km on northeastern side of the area.
7.	Nearest Railway Station	Virudhunagar-5.0Km - E The Nearest Railway line is Virudhunagar to Sivakasi line which is about 5.4Km on Southern side of the area.
8.	Nearest airport	Madurai Airport – 32.0km - NE
9.	Nearest Village	Pavali – 1.2Km - NE Kunthalpatti – 2.2km - NW Kumaralingapuram– 1.2 km – SE Amathur– 4.9km - SW
10.	Nearest Town	Virudhunagar – 5.0Km – E
11.	Water Bodies	Core Zone – NIL Buffer Zone • Odai – 290m (S) • Urani – 325m (NW) • Kuttai – 365m (SW)

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

12	Historical Places/Places of Tourist/ Archeological site	NIL within 10 km radius
13.	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	NIL within 10 km radius
14	Reserved / Protected Forests	• Nil within 10km radius
15	Defence Installations	NIL within 10 km radius
16	Seismic Zone	Zone II

Figure 3.3 Satellite Image of the Study Area



3.7 EXISTING ENVIRONMENTAL SCENARIO

3.7.1 MICRO- METEOROLOGY

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

3.7.1.1 CLIMATE AND RAINFALL DATA

Virudhunagar has a tropical climate. The summers are much rainier than the winters in Virudhunagar. This location is classified as Aw by Köppen and Geiger (Aw, or the tropical wet and dry climate, also known as the savanna climate, where there is an extended dry season during the winter. During the wet season, rainfall is less than 1000mm, occurring mainly in the summertime). The average annual temperature is 27.4 °C | 81.3 °F in Virudhunagar. The district receives rainfall from North East and South West monsoons.

Rain Fall Virudhunagar district receives rainfall from both southwest and northeast monsoons. The annual normal rainfall (1901-80) for the district is 800mm to 900mm. The contribution of southwest monsoon ranges from 45 to 52 percent, whereas it ranges from 30-43 percent due to northeast monsoon.

Temperature The district enjoys a tropical climate. The highest temperatures are recorded during May and June. The mean daily minimum and maximum temperature are 18 to 42° C. The relative humidity ranges from 37 to 85 percent.

Table 3.3 Rainfall Data

Annual Rainfall in mm						Normal rainfall in mm
2019	2020	2021	2022	2024	2024(As on 30.09.2024)	
713.7	1303.7	968.4	883.1	1166.8	549.1	773

Source: Tamilnadu Water Supply and Drainage Board, Virudhunagar District

3.7.1.2 Seismic Sensitivity

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

3.7.1.3 Meteorological Data of the Project Area

The meteorological data collected in the study area from October 2024 to December 2024 which includes Temperature, Wind speed, Wind direction and Relative humidity. Details are given in below table and Figure 3.4.

Table 3.4 Meteorological Data Recorded at Site

S.NO	Parameters	October to December 2024
1.	Temperature (°C)	Min 18
		Max. 42
		Avg 30
2.	Relative Humidity (%)	Min 37
		Max 61
		Avg 77
3.	Wind Speed (km/h)	Min 0
		Max 28
		Avg 8
4.	Wind Direction	Predominant wind blowing from NE to SW

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

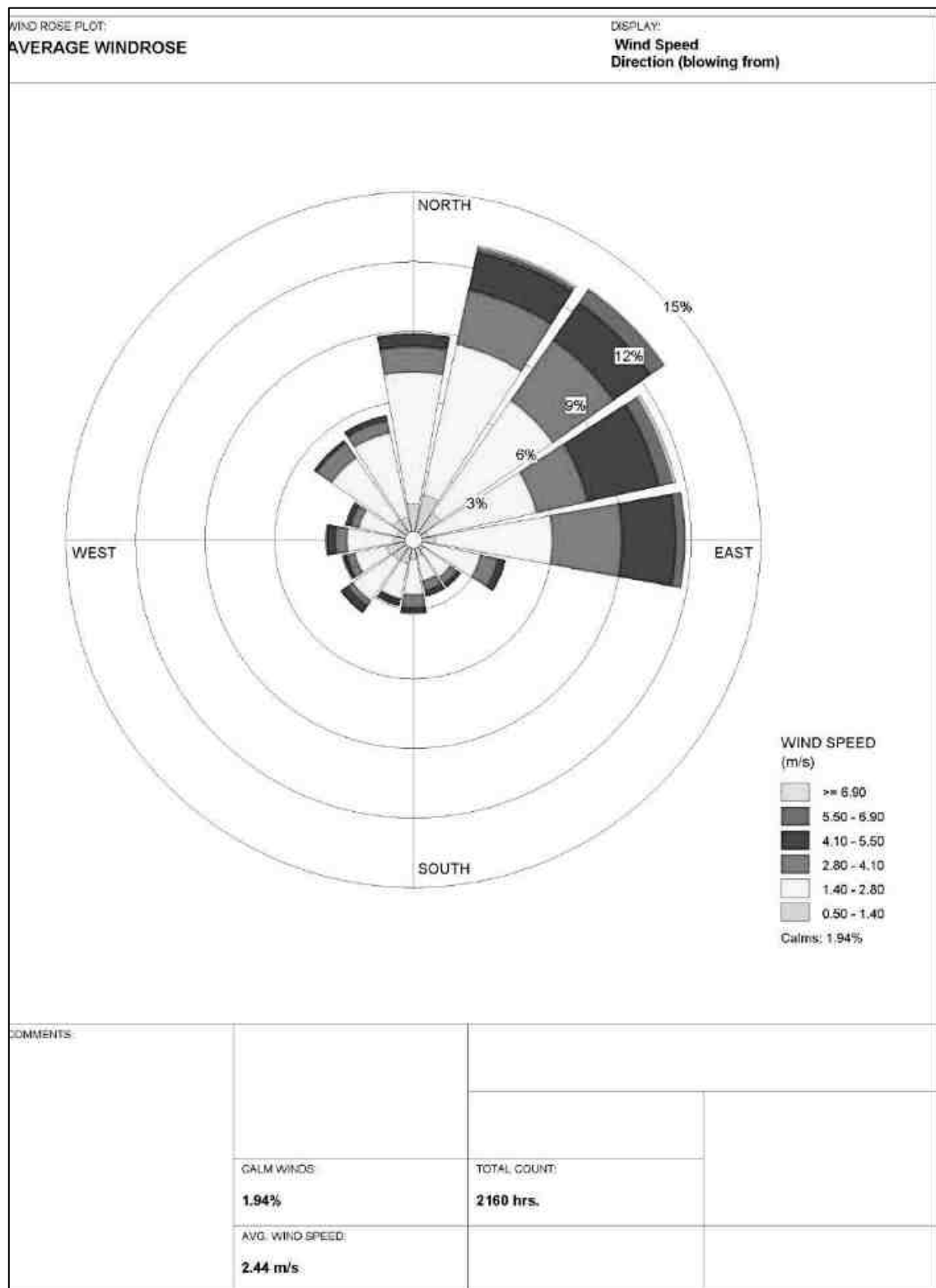


Figure 3.6 Wind Rose Diagram – (October – December 2024)

3.7.2 AIR ENVIRONMENT

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

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

3.7.2.1 SAMPLING & ANALYTICAL TECHNIQUES

Table 3.5 Methodology for Air Quality Monitoring

Table 3.4 : Air Quality Monitoring		
1.	Monitoring Period	Post Monsoon (October 2024 to December 2024)
2.	Monitoring Location	The monitoring locations for ambient air study is given in Table – 3.6 and Figure 3.8.
Methodology		
3.	A. Sampling	(IS-5182:Part 1:2018)
	B. Analysis	
Parameters		Protocol
4.	Particulate Matter (PM ₁₀)	Gravimetric (IS 5182: Part 23:2017)
	Particulate Matter (PM _{2.5})	Gravimetric (IS 5182: Part 24:2019)
	Sulphur Dioxide	Colorimetric (West & Gaeke Method) (IS 5182: Part 02: 2017)
	Nitrogen Dioxide	Colorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2017)
	Carbon Monoxide	CO Monitor
	Monitoring Frequency	2 days in a week, 4 weeks in a month for 3 months in a season.

3.7.2.2 FREQUENCY AND PARAMETERS FOR SAMPLING

Ambient air quality monitoring has been carried out with a frequency of two samples per week at seven (7) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period October to December, 2024. The baseline data of ambient air has been generated for PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) and Carbon Monoxide Monitoring has been carried out as per the CPCB, MoEF & CC guidelines and notifications.

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

3.7.2.3 AMBIENT AIR QUALITY MONITORING STATIONS

Seven (7) monitoring stations were set up in the study area as depicted in Figure 3.8 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

Table 3.6 – Ambient Air Quality Monitoring Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
1	AAQ1	Within Mine Lease area	09°35'43.22"N & 77°54'15.19"E
2	AAQ2	Sendunrapuram	09°37'12.35"N & 77°52'30.57"E
3	AAQ3	Kumaralingapuram	09°35'2.46"N & 77°54'48.39"E
4	AAQ4	AAA College	09°34'15.69"N & 77°52'8.72"E
5	AAQ5	Kavulur	09°34'34.73"N & 77°54'1.18"E
6	AAQ6	Mavade	09°36'7.44"N & 77°55'15.89"E
7	AAQ7	Vadamalaikurichi	09°37'49.87"N & 77°54'50.37"E

Figure 3.7 Ambient Air Quality Monitoring Locations

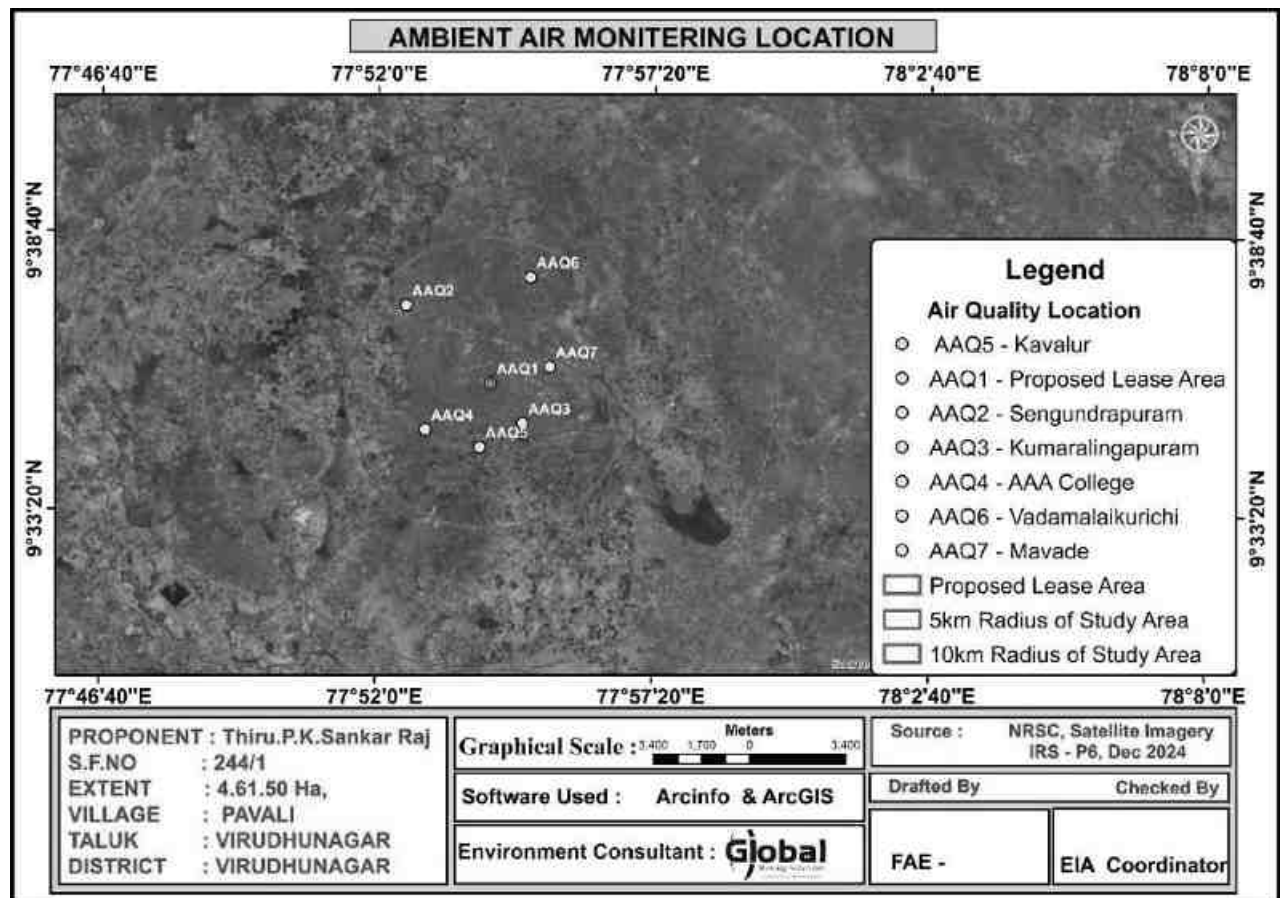


Table 3.7 Ambient Air Quality Data

Station ID	Min	Max	Avg.
Particulate matter PM_{2.5} (µg/m³)			
AAQ-1	25.2	33.9	29.5
AAQ-2	21.5	28.6	24.9
AAQ-3	20.1	24.8	22.4
AAQ-4	18.0	23.1	20.6
AAQ-5	23.3	27.7	25.5
AAQ-6	17.8	30.0	22.3
AAQ-7	22.2	26.7	24.5
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	54.2	72.9	63.4
AAQ-2	46.3	60.9	53.2
AAQ-3	43.8	53.5	48.4
AAQ-4	39.5	50.7	45.1
AAQ-5	49.6	58.8	54.2
AAQ-6	45.3	52.0	48.8
AAQ-7	47.9	54.3	51.4
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	5.1	7.4	6.3
AAQ-2	4.3	6.6	5.5
AAQ-3	4.0	6.3	9.4
AAQ-4	4.0	5.8	5.0
AAQ-5	4.4	6.7	5.6
AAQ-6	4.4	6.7	5.6
AAQ-7	4.8	8.1	6.3
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	8.1	13	9.6
AAQ-2	6.5	9.8	7.8
AAQ-3	6.1	9.4	7.5
AAQ-4	5.7	9.2	7.0
AAQ-5	7.5	11.1	8.8
AAQ-6	6.9	9.7	8.2
AAQ-7	7.1	10.8	8.7
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

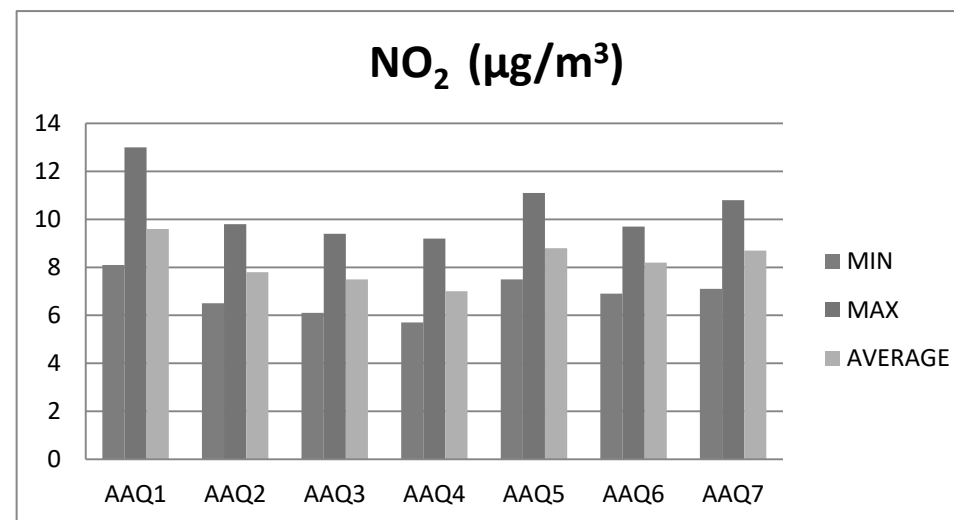
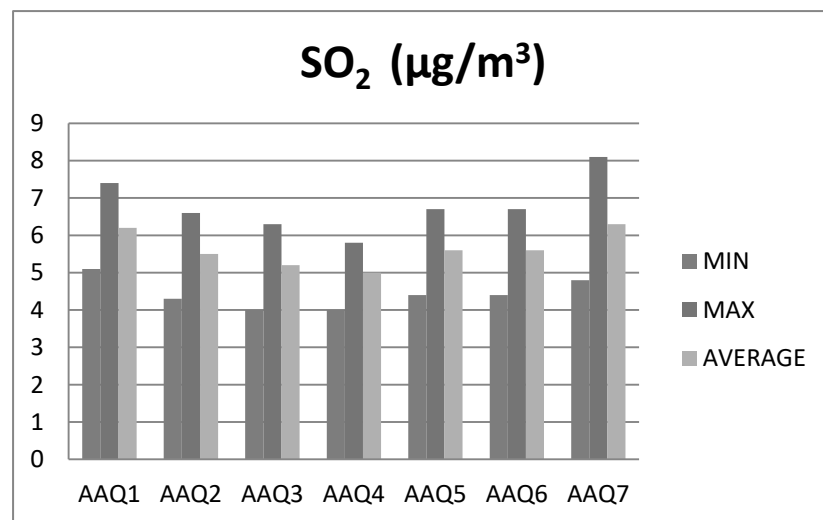
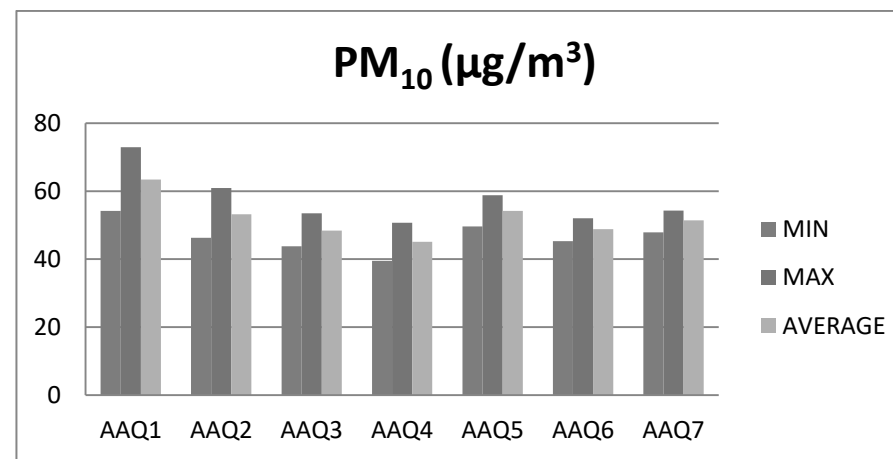
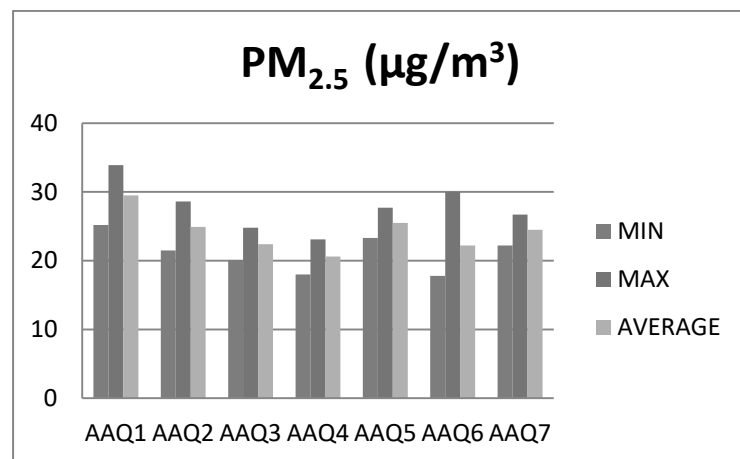


Figure –3.8 - Graphical Representation of Air Quality Data

3.7.2.4 DISCUSSION

From the table it is seen that, in the ambient air, the PM₁₀ values were in the range of 54.2 – 72.9 µg/m³. PM_{2.5} values were in the range of 25.2 – 33.9 µg/m³. SO₂ levels were ranging from 5.1 -8.1 µg/m³. NO₂ levels were ranging from 8.1 -13 µg/m³. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM₁₀, PM_{2.5}, SO₂, NO₂ & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL – 1144 µg/m³).

3.7.3 WATER ENVIRONMENT

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

3.7.3.1 METHODOLOGY

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

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

3.7.3.2 GROUND WATER

The district is underlain by both porous and fissured formations, Unconsolidated & Semi-consolidated formations and Weathered, Fissured and fractured crystalline rocks constitute the important aquifer systems in the Virudhunagar region. Ground water occurs under phreatic to semi-confined conditions in these

formations and is being developed by means of dug wells and filter points. Proterozoic formation is the basement rocks which consist of quartzite, crystalline limestone, calcgranulite, hornblende – biotite gneiss, charnockite or pyroxene granulite, granite and pegmatite. Weathered, a fissured cracks, shear zones and joints in the basement rock act as a good groundwater potential zone in the study area.

3.7.3.3 SAMPLING LOCATIONS

Seven (7) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.8 and shown as Figure 3.10.

Table 3.8 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
Ground Water			
1	GW1	Mine Lease Area	09°35'43.22"N & 7°54'15.19"E
2	GW2	Sendunrapuram	09°37'12.35"N & 77°52'30.57"E
3	GW3	Kumaralingapuram	09°35'2.46"N & 77°54'48.39"E
4	GW4	Aaa College	09°34'15.69"N & 77°52'8.72"E
5	GW5	Kavulur	09°34'34.73"N & 77°54'1.18"E
6	GW6	Mavade	09°36'7.44"N & 77°55'15.89"E
7	GW7	Vadamalaikurichi	09°37'49.87"N & 77°54'50.37"E

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

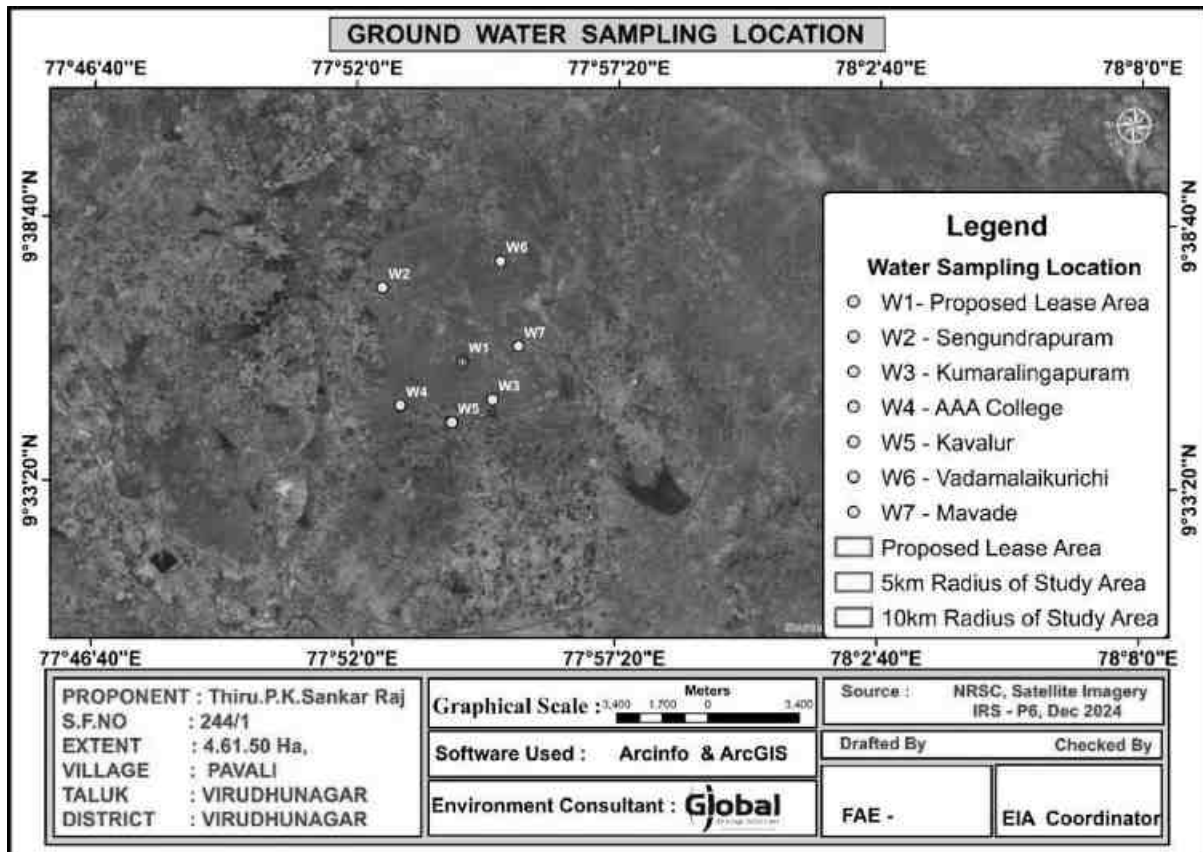


Figure 3.9 – Ground Water Monitoring Locations

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Table 3.9 - Results of Ground Water sampling Analysis

S. No.	Test Parameter	Unit	GW1	GW2	GW3	GW4	GW5	GW6	GW7	Specification/Limit (As per IS:10500: 2012)	
										Desirable	Permissible
1	Odour	...	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		Agreeable	Agreeable
2	Taste	...	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		Agreeable	Agreeable
3	pH	...	7.56	7.25	7.29	7.62	7.34	7.68	7.72	6.5 - 8.5	No Relaxation
4	Turbidity	NTU	<1	<1	<1	<1	<1	<1	<1	1	5
5	TDS	mg/L	580	246	325	420	398	290	740	500	2000
6	Fluoride,(F)	mg/L	0.86	0.65	0.70	0.75	0.71	0.87		1	1.5
7	Total Alkalinity, (CaCO ₃)	mg/L	431	155	180	225	490	127		200	600
8	Total Hardness, (CaCO ₃)	mg/L	539	267	316	480	539	549		200	600
9	Calcium,(Ca)	mg/L	82.3	72.1	94.1	114	86.2	125		75	200
10	Calcium as CaCO ₃		206	180	235	284	216	314		-	-
11	Free Residual chlorine as Cl-		BDL(D.L- 0.2)	BDL(D.L- 0.2)	BDL (D.L - 0.2)	BDL(D.L- 0.2)	BDL(D.L- 0.2)	BDL(D.L- 0.2)		0.2	1.0
12	Chloride,(Cl)	mg/L	274	56.7	69.5	186	240	342		250	1000
13	Magnesium,(Mg)	mg/L	80.0	20.7	19.3	47.0	77.6	56.4		30	100
14	Nitrate, (NO ₃)	mg/L	5.57	BDL(DL- 1.0)	BDL(DL- 1.0)	2.03	BDL(DL- 1.0)	BDL(DL- 1.0)		45	No Relaxation
15	Sulphate, (SO ₄)	mg/L	371	85.1	63.4	94.5	367	125		200	400
16	Iron,(Fe)	mg/L	0.05	0.05	0.10	0.02	0.08	0.02		1	No Relaxation
17	Manganese, (Mn)	mg/L	BDL(D.L- 0.05)	BDL(D.L- 0.05)	BDL (D.L - 0.05)	BDL(D.L- 0.05)	BDL(D.L- 0.05)	BDL(D.L- 0.05)		0.1	0.3
18	Conductivity	µs/cm	2064	611	664	1039	1905	1435		Not Specified	Not Specified

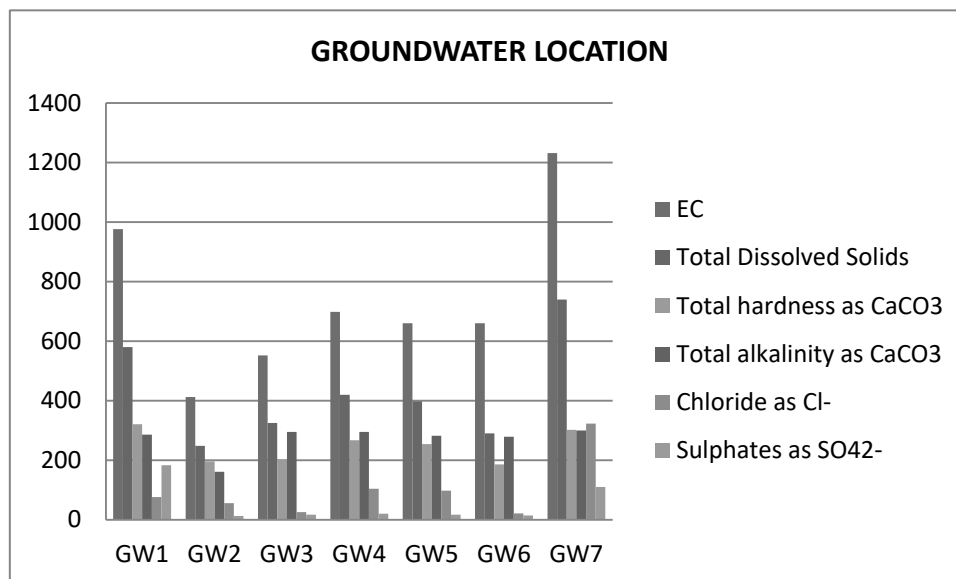


Figure 3. 10 Ground Water - Monitoring Results

3.7.3.4 DISCUSSION

Ground Water

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

As Per the data it has been observed that the pH value varies from 7.25-7.72, Chlorides Ranges From 21.8-104 mg/l, Sulphates value found to be between 14-183 mg/l, Fluoride Ranges low in lease area i.e. 0.21-0.42, Hardness varies from 186-321 mg/l, and Total dissolved solid 248-740 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

3.7.4 NOISE ENVIRONMENT

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

3.7.4.1 SAMPLING LOCATIONS

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at seven (7) locations. The noise level of monitoring locations were carried out by covering 10 km radius of the project area. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study. The noise monitoring locations are given in Figure 3.13 and in below table.

Table 3.10 Noise Monitoring Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
1	N1	MINE LEASE AREA	09°35'43.22"N & 7°54'15.19"E
2	N2	SENDUNRAPURAM	09°37'12.35"N & 77°52'30.57"E
3	N3	KUMARALINGAPURAM	09°35'2.46"N & 77°54'48.39"E
4	N4	AAA COLLEGE	09°34'15.69"N & 77°52'8.72"E
5	N5	KAVULUR	09°34'34.73"N & 77°54'1.18"E
6	N6	MAVADE	09°36'7.44"N & 77°55'15.89"E
7	N7	VADAMALAIKURICHI	09°37'49.87"N & 77°54'50.37"E

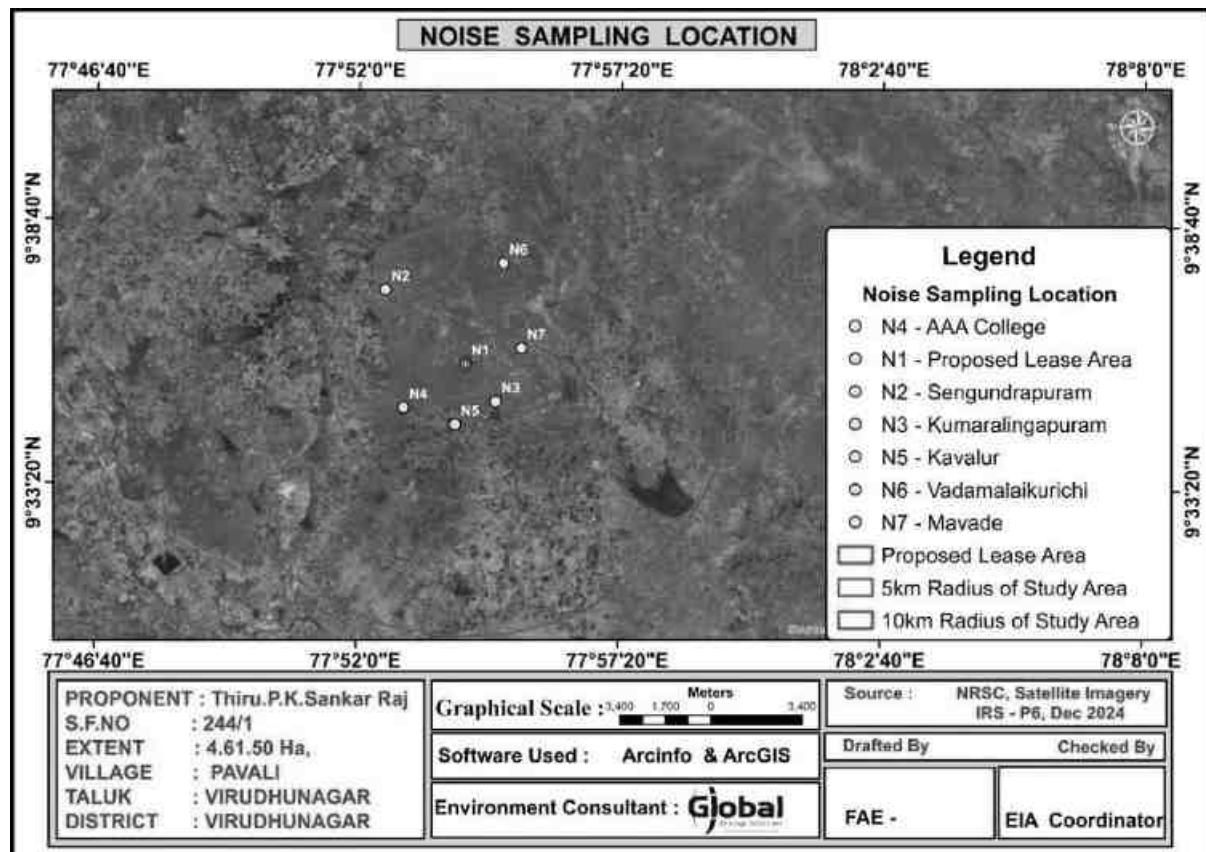


Figure 3.11 Noise Monitoring Location

3.7.4.2 METHOD OF MONITORING

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

3.7.4.3 NOISE MONITORING RESULT

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

Table 3.12 Noise Monitoring Result

Monitoring Location	N1	N2	N3	N4	N5	N6	N7
DAY EQUIVALENT	52.5	49.5	48.6	46.8	46.0	48.5	46.6
NIGHT EQUIVALENT	40.7	37.8	42	40.7	39.1	42.7	39.9
DAY & NIGHT EQUIVALENT	50.8	47.8	47.3	45.6	44.6	47.3	45.3
Limits as per MoEF&CC							
Day equivalent - 55 dB (A); Night equivalent - 45 dB (A); Work zone Exposure in 8 hr - 90 dB (A)							

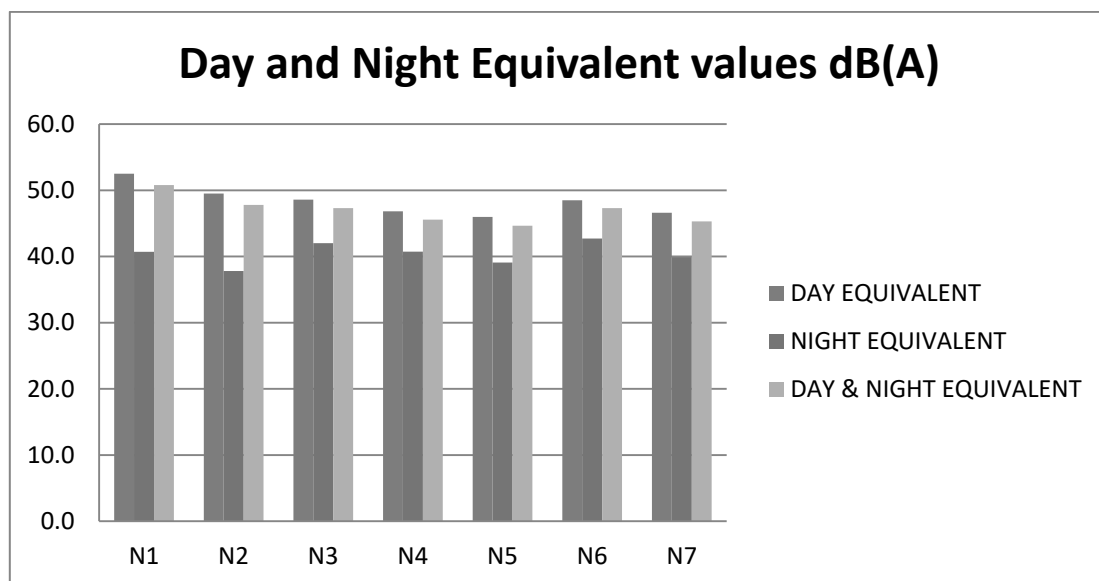


Figure 3.12 Noise Monitoring Results

3.7.4.4 DISCUSSION

From the table it is observed that the day Equivalent Noise (Leq-d) level were ranging from 46.0 to 52.5 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 37.8 to 42.7 (A). Day and Night Equivalent Noise (Leq-n) level were ranging from 44.6 to 50.8 dB(A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time in Residential areas, the monitored ambient noise levels are within the limit values.

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

3.7.5 SOIL ENVIRONMENT

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analyzed for different parameters.

3.7.5.1 MONITORING LOCATIONS

Soil samples were collected from 6 locations to assess the soil quality in and around the mines. Soil samples collected using sampling augers and field capacity apparatus.

Table 3.13 – Soil Sampling Locations

S.No	Location Code	Monitoring Locations	Latitude and longitude
1	S1	Within Mine Lease area	09°35'43.22"N & 7°54'15.19"E
2	S2	Sendunrapuram	09°37'12.35"N & 77°52'30.57"E
3	S3	Kumaralingapuram	09°35'2.46"N & 77°54'48.39"E
4	S4	AAA College	09°34'15.69"N & 77°52'8.72"E
5	S5	Kavulur	09°34'34.73"N & 77°54'1.18"E
6	S6	Mavade	09°36'7.44"N & 77°55'15.89"E

3.7.5.2 METHODOLOGY

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

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

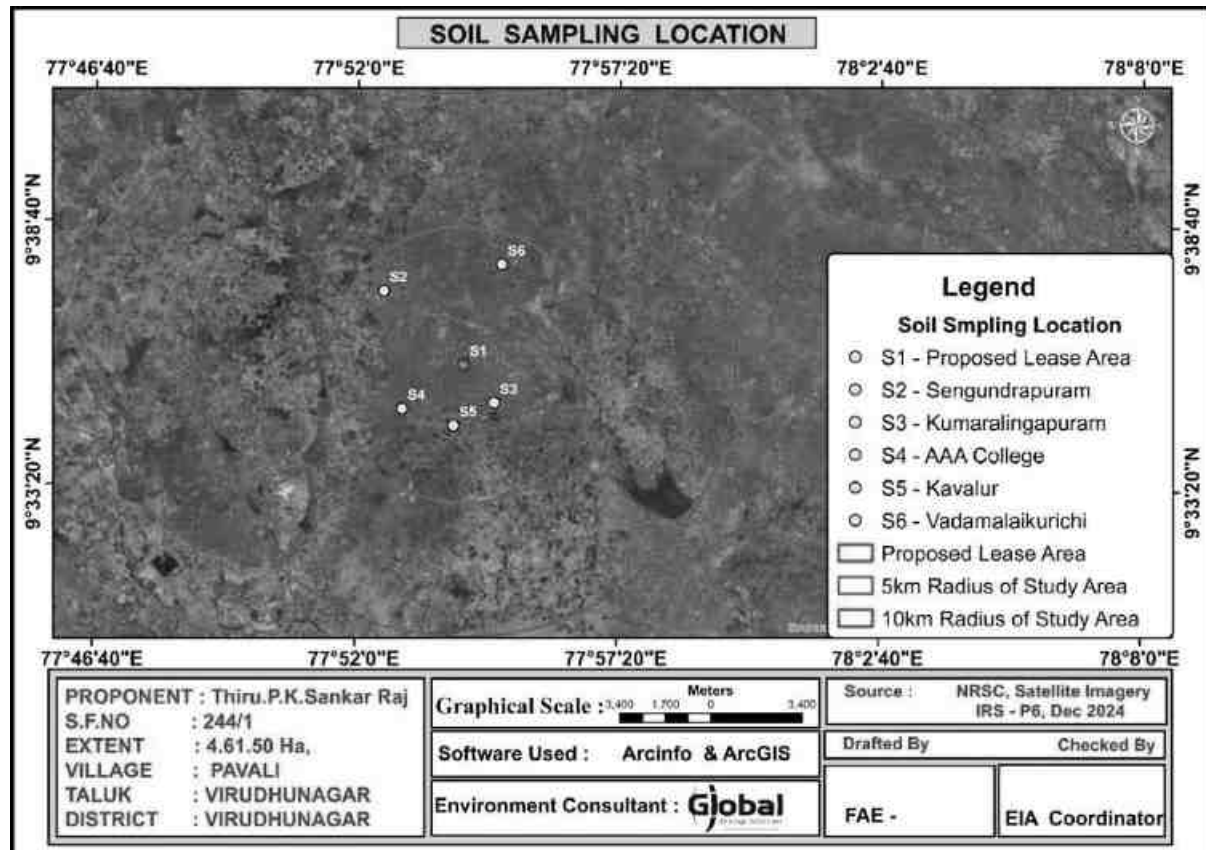


Figure 3.13 - Soil Sampling Stations

3.7.5.3 SOIL TESTING RESULT

Results of the soil samples show that the pH values were found to be 6.15-7.79 and Electrical Conductivity values were ranging between 84.65-103.5 µmhos/cm. Soils are generally Silt Loam. Organic matter values were ranging between 2.12-3.46 %. Total Nitrogen values were ranging between 586-1108 mg/kg. Phosphorus values were ranging between 2.32-4.62 µg/g. Potassium values were ranging between 686-772 mg/kg. Sodium values were ranging between 745-1025 mg/kg. Total Sulphate values were observed to be BDL. The soil quality data for the 6 samples collected and analyzed are provided in Table no – 3.14.

Table 3.14 - Soil Testing Result

S. No	Parameter	S1	S2	S3	S4	S5	S6
1	pH	6.25	6.15	7.54	6.32	6.25	7.79
2	Electrical Conductivity $\mu\text{S}/\text{cm}$	101.3	95.35	84.65	103.5	98.32	87.59
3	Dry Matter Content	96.32	95.24	98.74	97.25	95.76	99.72
4	Water Content	3.68	4.76	1.26	2.75	4.24	0.28
5	Organic Matter	2.74	2.12	3.14	2.89	2.55	3.46
	Soil Texture	CLAY LOAM	SANDY CLAY LOAM	CLAY LOAM	CLAY LOAM	SANDY CLAY LOAM	CLAY LOAM
6	Grain Size Distribution Sand	38.75	47.98	23.69	39.06	48.35	24.76
7	Silt	33.04	17.65	41.05	33.86	18.24	43.26
8	Clay	28.21	34.37	35.26	27.08	33.41	31.98
9	Phosphorous as P	3.52	4.26	2.32	3.75	4.62	2.85
10	Sodium mg/kg	1012	750	942	1025	745	946
11	Potassium mg/kg	756	572	664	772	582	686
13	Total Nitrogen mg/kg	820	586	1028	836	612	1108
14	Total Sulphur	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)

3.7.6 LAND ENVIRONMENT

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

3.7.6.1 LAND USE PATTERN OF THE PROJECT AREA

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

Table 3.15 Land use pattern of the project site

Sl. No	Land Use	Present Area (Hect)	Area in use during the end of the Scheme period (Hect)
1.	Quarrying Pit	Nil	3.75.00
2.	Infrastructure	Nil	0.01.00
3.	Roads (Temporary)	Nil	0.01.00
4.	Green Belt	Nil	0.84.50
5.	Unutilized	4.61.50	Nil
Total		4.61.50	4.61.50

- At the end of life of mine, the excavated mine pit / void of 3.75.0Ha. will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt (0.84.50 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure.
- Remaining 0.84.50 ha. of land will be covered with vegetation.

3.7.6.2 LAND USE PATTERN OF THE STUDY AREA

A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover. The land use map of the study area is given in Figure 3.17.

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

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1.	Built-up land	16.72	5.17
2.	Crop land	227.72	70.40
3.	Existing Quarry	0.01	0.003
4.	Fallow land	0.25	0.07
5.	Land with scrub	27.02	8.35
6.	Land without scrub	17.52	5.41
7.	Plantations	17.67	5.46
8.	Water bodies	16.54	5.14
	Total Area	323.45	100.00

Source : Survey of India Toposheet and Landsat Satellite Imagery

From above table it is inferred that the majority of the land in the study area is Crop Land (70.40 %) followed by Land with scrub (8.35%).

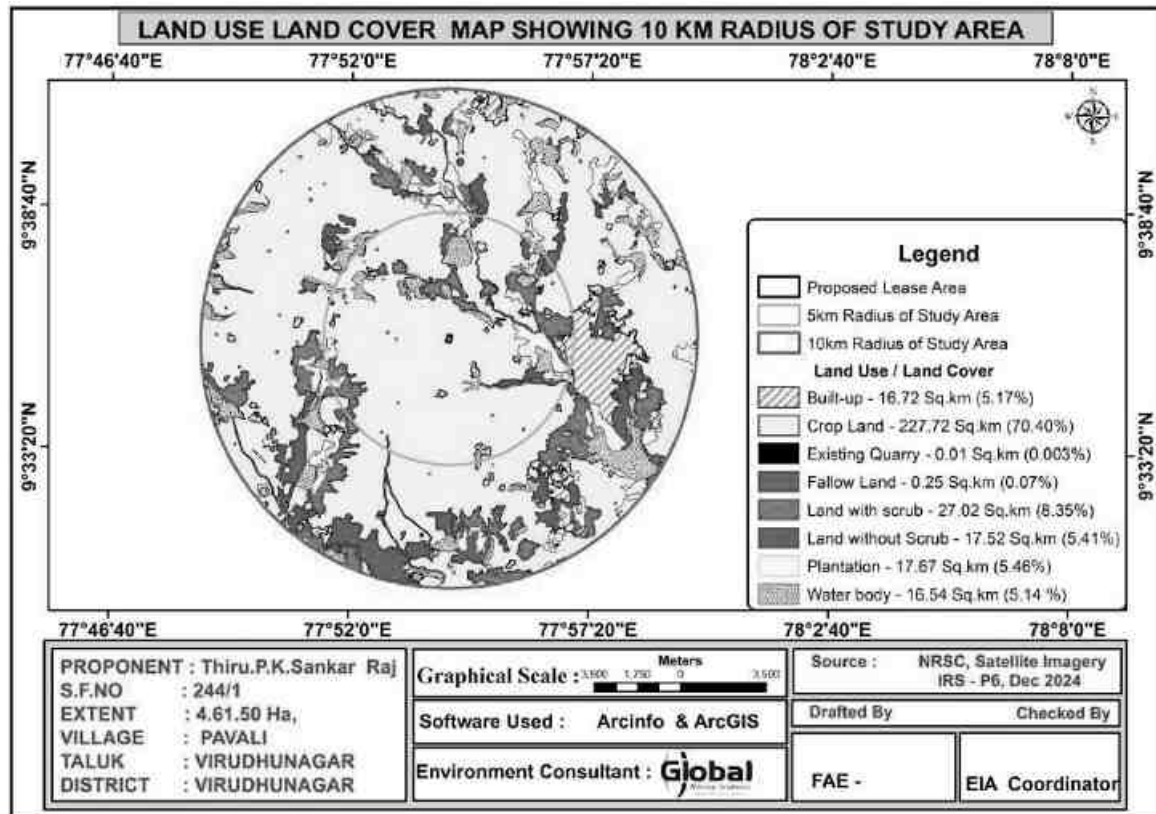


Figure 3.14 Land use map of the study area

3.7.7 BIOLOGICAL ENVIRONMENT

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

3.7.7.1 FLORA

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

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

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

3.7.7.2 FLORISTIC COMPOSITION IN CORE ZONE

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

3.7.7.3 FLORISTIC SCENARIO IN BUFFER ZONE AREA

The present report gives the review of published secondary data and the results of field sampling conducted during October to December 2024 and there are no forest blocks in study area. The detailed ecological assessment of the study area has been carried out and are presented in below Table.

Table 3.17 List of Flora

Sl.No	Species	Family	Common Name	Habit	IUCN
1	<i>Abrus precatorius</i>	Fabaceae	Kundumani	Shrub	NA
2	<i>Abutilon indicum</i>	Malvaceae	Perun thuthi	Shrub	NA
3	<i>Acacia nilotica</i>	Mimosaceae	Karuvelam	Tree	LC
4	<i>Acacia planifrons</i>	Mimosaceae	Kodaivelam	Tree	NA
5	<i>Acalypha indica</i>	Euphorbiaceae	Kuppaimeni	Herb	NA
6	<i>Acanthospermum hispidum</i>	Compositae	--	Herb	NA
7	<i>Achyranthes aspera</i>	Amaranthaceae	Nayurivi	Herb	NA
8	<i>Aegle marmelos</i>	Rutaceae	Vilvam	Tree	NA
9	<i>Aerva lanata</i>	Amaranthaceae	Sirupeelai	Shrub	NA
10	<i>Aerva persica</i>	Amaranthaceae	Perumpeelai	Shrub	NA
11	<i>Aeschynomene americana</i>	Fabaceae	--	Herb	NA
12	<i>Aeschynomene aspera</i>	Fabaceae	Thakkai	Shrub	NA
13	<i>Ageratum conyzoides</i>	Compositae	Poom pillu	Herb	NA
14	<i>Alloteropsis cimicina</i>	Poaceae	--	Grass	NA
15	<i>Alternanthera sessilis</i>	Amaranthaceae	Ponnanganni	Herb	NA
16	<i>Anisomeles indica</i>	Labiatae	--	Herb	NA
17	<i>Annona squamosa</i>	Annonaceae	Seetha	Tree	NA
18	<i>Arachis hypogaea</i>	Fabaceae	Verkadalai	Herb	NA
19	<i>Argemone Mexicana</i>	Papaveraceae	Braman Thandu	Herb	NA
20	<i>Aristida adscensionis</i>	Poaceae	--	Grass	NA
21	<i>Aristida hystrix</i>	Poaceae	--	Grass	NA
22	<i>Aristolochia bracteolata</i>	Aristolochiaceae	Aduthinnappalai	Herb	NA
23	<i>Barleria acuminata</i>	Acanthaceae	Vellai kurinji	Shrub	NA
24	<i>Barleria longiflora</i>	Acanthaceae	--	Shrub	NA
25	<i>Barleria noctiflora</i>	Acanthaceae	Barleria	Shrub	NA
26	<i>Boerhavia diffusa</i>	Nyctaginaceae	Mookarattai	Herb	NA
27	<i>Boerhavia erecta</i>	Nyctaginaceae	Seemai mookarattai	Herb	NA
28	<i>Carica papaya</i>	Caricaceae	Pappali	Tree	NA
29	<i>Carissa carandas</i>	Apocynaceae	Kalaa, Perun kala	Shrub	NA
30	<i>Cassia fistula</i>	Caesalpinaceae	Kondrai	Tree	NA

3.7.7.4 LIST OF FAUNA

The list of fauna within the study area is given in Table No – 3.18.

Table 3.18 List of Fauna

SL.No	Common Name	Scientific Name	IUCN status
	Phasianidae		
1	Indian peafowl		
2	Grey francolin	<i>Francolinus pondicerianus</i>	LC
	Anatidae		
3	Indian spot billed duck	<i>Anas poecilorhyncha</i>	LC
	Threskiornithidae		
4	Black headed Ibis	<i>Threskiornis melanocephalus</i>	NT
	Ardeidae		
5	Indian pond heron	<i>Ardeola grayii</i>	LC
6	Purple heron	<i>Ardea purpurea</i>	LC
7	Grey heron	<i>Ardea cinerea</i>	LC
8	Cattle egret	<i>Bubulcus ibis</i>	LC
	Phalacrocoracidae		
9	Little cormorant	<i>Phalacrocorax niger</i>	LC
	Accipitridae		
10	Brahminy kite	<i>Haliastur indus</i>	LC
11	Shikra	<i>Accipter badius</i>	LC
12	Black kite	<i>Milvus migrans</i>	LC
	Rallidae		
13	White breasted waterhen	<i>Amaurornis phoenicurus</i>	LC
14	Purple swampphen	<i>Porphyrio porphyrio</i>	LC
	Charadriidae		
15	Red wattled lapwing	<i>Vanellus indicus</i>	LC
16	Common ringed plover	<i>Charadrius hiaticula</i>	LC
	Columbidae		
17	Common pigeon	<i>Columba livia</i>	LC
	Psittaculidae		
18	Rose ringed parakeet	<i>Psittacula krameri</i>	LC
	Cuculidae		
19	Common hawk cuckoo	<i>Hierococcyx varius</i>	LC
20	Asian koel	<i>Eudynamys scolopaceus</i>	LC

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

3.7.8 TOPOGRAPHY

The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Granitic Gneiss formation is noticed below 5m (Avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 133m (maximum) from MSL.

3.7.9 DRAINAGE PATTERN OF THE AREA

The area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The drainage map of the study area is given in Figure 3.18.

3.7.10 GEOMORPHOLOGY

Predominantly the buffer zone is dominated by Shallow & Moderately Buried Pediplan, and the lease area falls under pediment. Geomorphology of the study area is detailed below. The geomorphology of the study area is given in Figure 3.20.

Sl.No.	GEOMORPHOLOGY	Area in Sq.Km	Area in Percentage
1	Dome type Denudational Hills	2.49	0.77
2	Dome type Residual Hills	0.44	0.14
3	Inselberg	0.77	0.24
4	Linear Ridge/ Dyke	0.86	0.26
5	Moderately buried Pediplain	96.61	29.85
6	Pediment - Inselberg Complex	0.95	0.29
7	Pediment	32.83	10.14
8	Shallow Flood Plain	9.28	2.87
9	Shallow buried Pediplain	179.40	55.43
	Total Area	323.64	100.00

3.7.11 GEOLOGY

The regional geology of the study area is shown below in Figure 3.19. The type of rock formation in the core and buffer zone is composed of Charnockite Gneissic complex and Migmatite Gneiss. The lease area falls under Charnockite Gneissic complex category. The geology of the study area is detailed below.

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Sl.No.	GEOLOGY	Area in Sq.Km	Area in Percentage
1	Charnockite	276.11	85.31
2	Migmatite-Gneiss	47.53	14.69
	Total Area	323.64	100.00

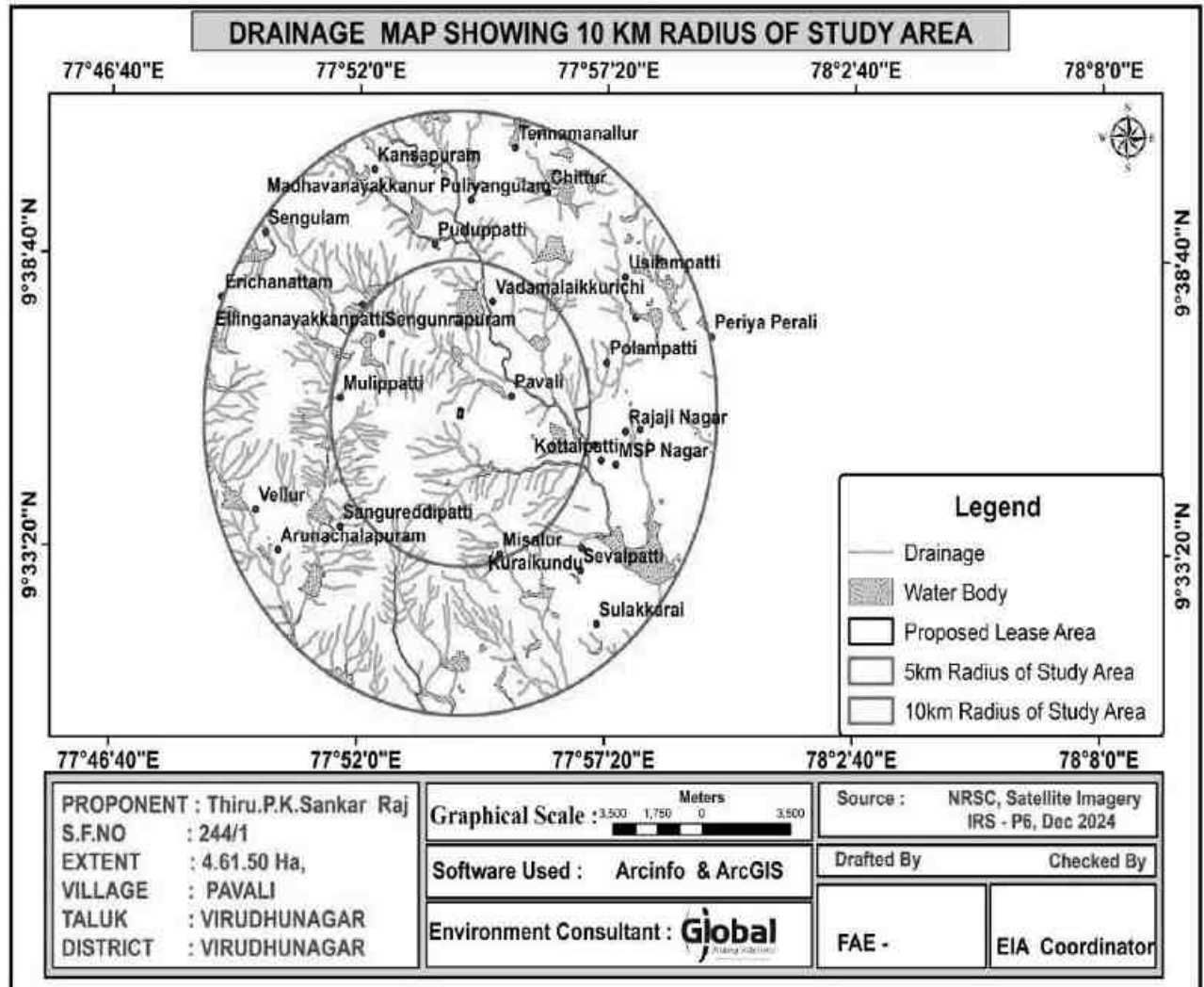


Figure 3.15 Drainage map of the study area

Figure 3.16 Geology map of the study area

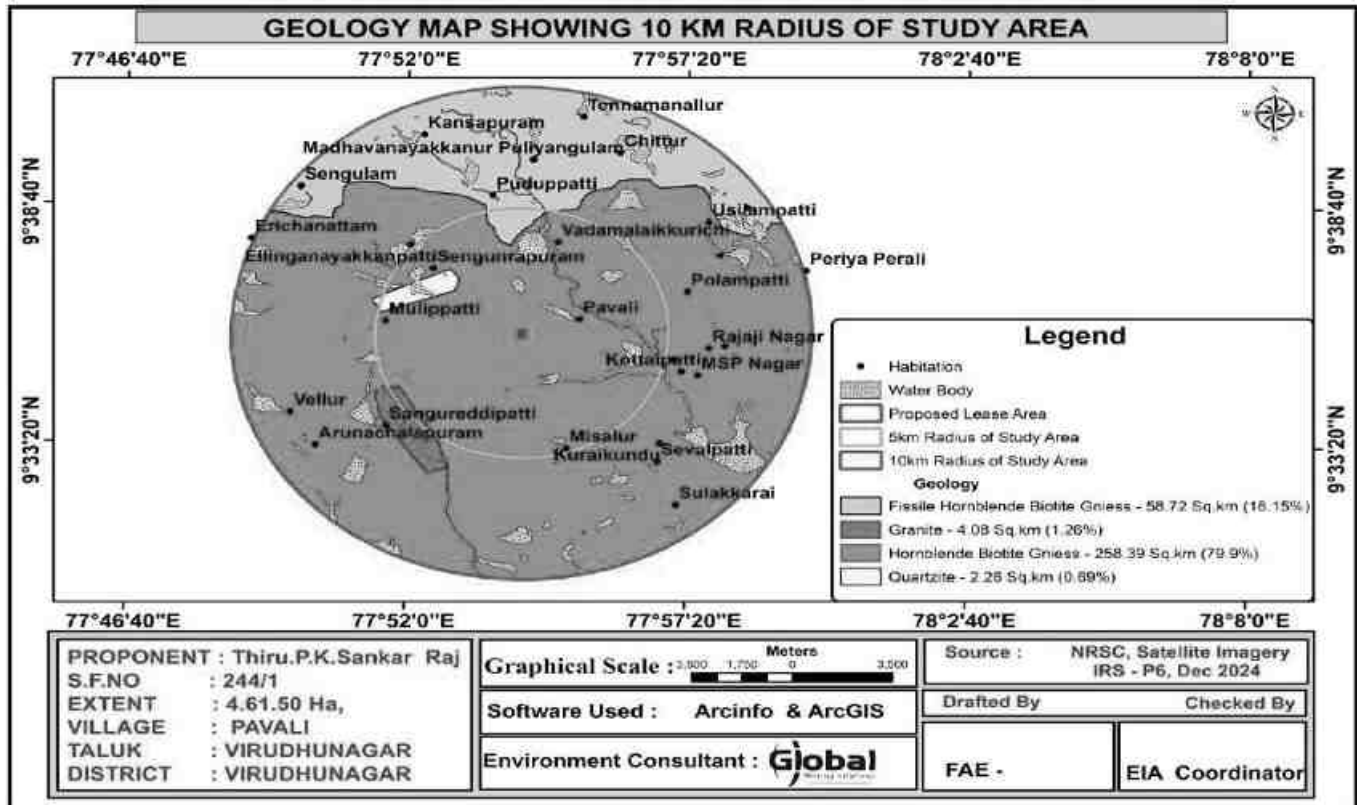
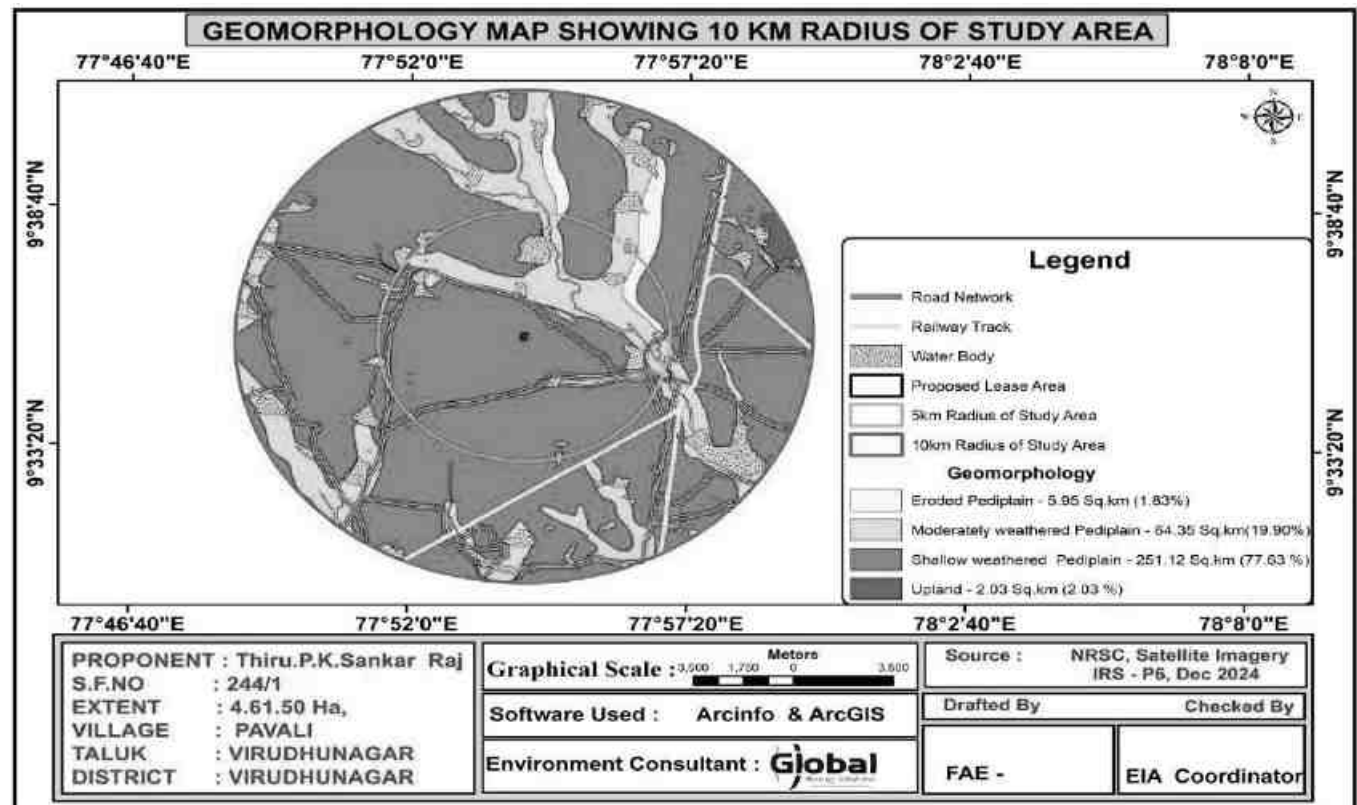


Figure 3.17 Geomorphology map of the study area



3.7.12 SOCIO-ECONOMIC ENVIRONMENT

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

It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

3.7.12.1 OBJECTIVES OF THE STUDY

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

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

3.7.12.2 SCOPE OF WORK

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

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

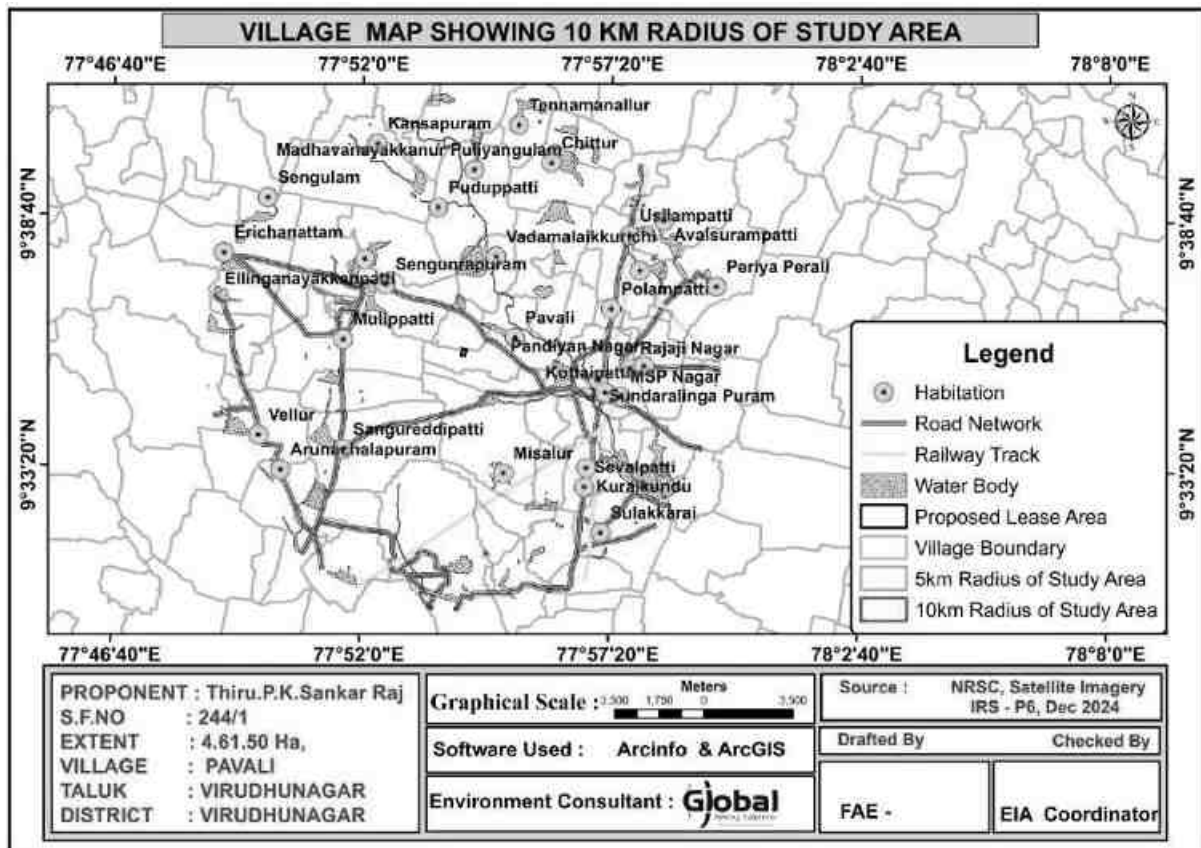


Figure 3.18 Village Map of the Study Area

Table 3.19 - Population profile of the study area

Population profile of the study area		
Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	147362	49.90
Female Population	147918	50.09
Total	295280	100
B. Population break-up by Caste		
Scheduled Caste	53056	17.9
Scheduled Tribes	2792	1.10
Others	239432	81.0
Total	295280	100
C. Literacy Level		
Total Literate Population	197621	67.0
Others	97659	33.0
Total	295280	100
D. Occupational structure		
Main workers	121531	41.15
Marginal workers	42295	14.33
Total Workers	163826	55.48
Total Non-workers	131454	44.52
Total	295280	100

Table 3.20 Population profile - Pavali Village		
Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	153	50.6
Female Population	149	49.4
Total	302	100
B. Population break-up by Caste		
Scheduled Caste	2	0.66
Scheduled Tribes	6	1.99
Others	294	97.35
Total	302	100
C. Literacy Level		
Total Literate Population	213	70.53
Others	89	29.47
Total	302	100
D. Occupational structure		
Main workers	164	54.30
Marginal workers	23	7.61
Total Workers	187	61.91
Total Non-workers	115	38.09
Total	302	100

Basic Amenities

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

FIG 3.19 GENDER-WISE POPULATION DISTRIBUTION

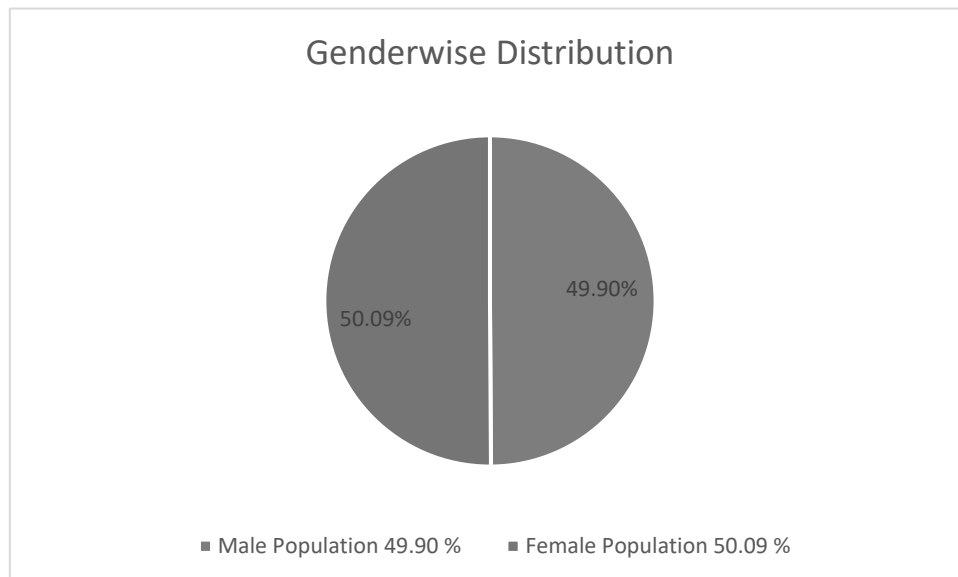


FIG 3.20 GENDER WISE LITERACY DISTRIBUTION

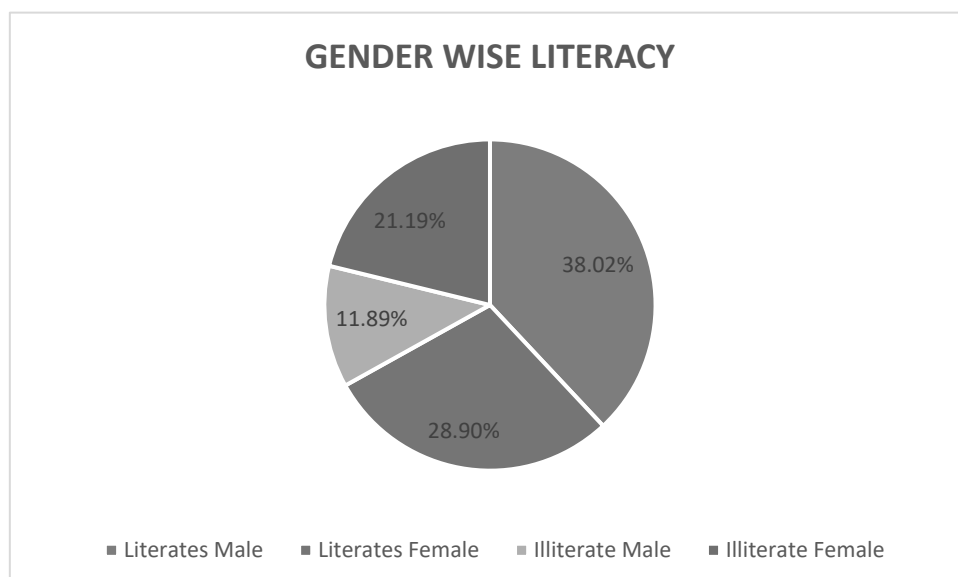
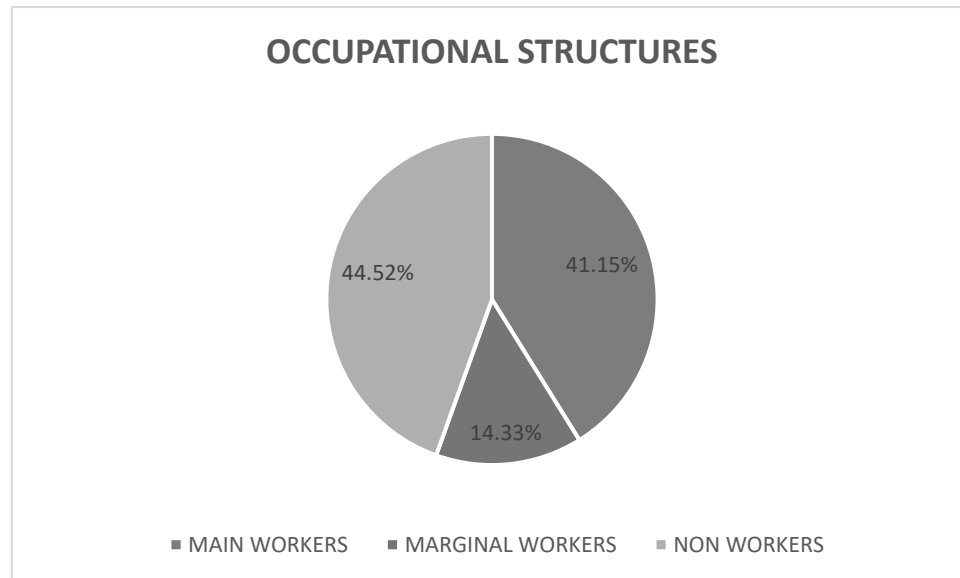


FIG 3.21 OCCUPATIONAL STRUCTURE WITHIN BUFFER ZONE



4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

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

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

4.2 PROJECT SPECIFIC IMPACTS AND MITIGATION MEASURES

This is a proposed project and Mechanized Open Cast mining will be carried out to quarry out Rough Stone. The identified impacts during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc., and the details of the same are elaborated in this chapter. The impact assessment is done for the peak production of the mine lease period and the entire area of quarry operation and can be construed as applicable for the entire lease period. Based on the baseline environmental status at the project site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed.

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

- Land environment
- Soil environment
- Water Environment

- Air Environment
- Noise Environment
- Socio economic environment
- Biological Environment

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

4.2.1 LAND ENVIRONMENT

4.2.1.1 ANTICIPATED IMPACT

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 of 4.61.00 Ha. is Patta land. The project area of 4.61.50 Ha is proposed to be altered by effective quarrying operation such as excavation (3.75.0 Ha), Infrastructure (0.01 Ha), Road (0.01 Ha) and greenbelt (0.84.50 Ha). The ultimate depth of quarrying is proposed by formation of 1 pit with maximum depth of 50 m below the ground level and will not intersect the ground water table. The mine closure plan is given in 2.8. The present land use pattern and the post mining land use pattern is shown below.

Table 4.1 Land use pattern of the project site

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	3.75.00
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.01.00
4.	Green Belt	Nil	0.84.50
5.	Unutilized	4.61.50	Nil
	Total =	4.61.50	4.61.50

- Change in topography of the mine lease area will change at the end of the life of the mine.
- At the end of life of mine, the excavated mine pit / void of 3.75.0 Ha. will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt (0.84.50 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure.
- Remaining 0.84.50 ha. of land will be covered with vegetation.
- Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles.
- Degradation of the aesthetic environment of the core zone due to quarrying.
- Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- Siltation of water course due to wash off from the exposed working area.

4.2.1.2 MITIGATION MEASURES

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

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

The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands.

Entire mined out area will be properly fenced to prevent inadvertent entry of human and animals.

Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps. To manage surface runoff, garland drain will be constructed around the quarry and connected to a settling pond with silt traps.

In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier & 10 m provided to the adjoining patta and poramboke lands) so as to help minimize dust emissions.

4.2.2 SOIL ENVIRONMENT

4.2.2.1 ANTICIPATED IMPACT

Mining activities often disrupt the existing environment as they involve disturbing the untouched earth materials. The overburden in the form of Gravel generated will be utilized for afforestation purpose, the surface consists of Gravel formation followed by Rough stone which is proposed to excavate completely during the quarrying operation. Erosion of top layer (Gravel), extracted fine material can result in substantial sediment loading to surface waters and drainage ways. During rainy season surface run off may cause sedimentation in low lying areas.

4.2.2.2 MITIGATION MEASURES FOR SOIL EROSION AND SOIL CONSERVATION

- Runoff water will be collected in bottom of the quarry and used for plantation and dust suppression during dry season. no run off water will be discharged beyond lease area.
- Wet drilling and haul road water sprinkling will be carried out to minimise air born dust at source level, which may cause soil pollution due to sedimentation.
- Garland drains will be constructed around the project area with silt traps to control the soil erosion during rainy seasons.
- Greenbelt development (0.84.50 Ha.) all along the periphery of the project area (i.e., 7.5 m safety barrier) will ensure binding strength and minimizes soil erosion.
- Soil sampling will be carried out in the core zone for every season to ensure the soil quality is not affected due to the quarrying activities.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

4.2.3 WATER ENVIRONMENT

4.2.3.1 ANTICIPATED IMPACT ON SURFACE AND GROUND WATER

The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. The quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 50 BGL and water table is found at a depth of 63 to 66 m BGL.

An odai passing at 290 m in (S) direction. Urani at 325 m (NW) and Kuttai at 365 m (SW). No other water bodies close to the project site, There is no proposal for discharging of wastewater outside the project area. There is no proposal for a rough stone processing or workshop within the project area, so no effluent is anticipated in the mine.

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

4.2.3.2 ANTICIPATED IMPACT DUE TO WATER USE IN MINE'S

The total water requirement for the project will be 5.0 KLD comprising Drinking 0.6 KLD, Dust suppression 2.0 KLD, Greenbelt 2.0 KLD and Domestic purpose 0.4 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.1.

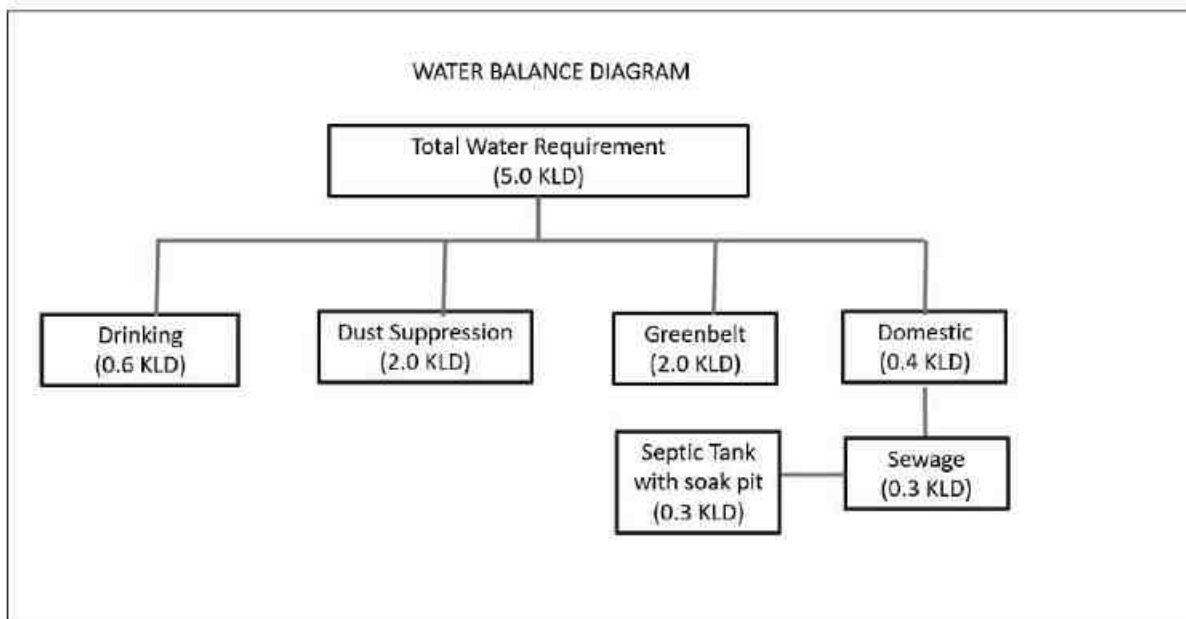


Figure 4.1 Water Balance Diagram

4.2.3.3 MITIGATION MEASURES

The following mitigation measures are suggested for water management

- Rainwater will be collected in lower part of the quarry pit by construction of garland drains to divert surface run-off and will be connected to settling tank of 6 m (l) x 6m (w) x 3m (d) to allow suspended solids to settle down if any. This collected water will act as a rain water harvesting system and will be used for dust suppression and greenbelt development.
- Regular water quality will be carried in nearby villages to ensure the water quality is not affected due to the quarrying activities.
- Domestic sewage from site office & urinals/latrines provided in project area will be discharged through septic tank followed by soak pit system.
- Only clear and settled water free from silt content will be used for dust suppression and greenbelt development.
- De-silting will be carried out before and immediately after the monsoon season and the settling tank and drains will be cleaned weekly, especially during monsoons.

4.2.3.4 RAINWATER HARVESTING PLAN

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

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

The average annual rainfall of the area is 900 mm. Taking into consideration of 0.35 as runoff co-efficient for mining area, the total quantity of rain water can be harvested per annum from the area has been tabulated as below.

Table 4.2 – Rainwater Harvesting Plan

S.NO	Rainwater Harvesting Area	Area in Sq.m	Average annual rainfall	Volume of harvestable quantity (Cum) of rain water per annum
1	Quarry Area	Nil	0.9	0
2	Unutilized Area	46150	0.9	41535
Total Harvested Rainfall				41,535

4.2.4 AIR ENVIRONMENT

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

4.2.4.1 ANTICIPATED IMPACT

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

The air-borne particulate matter generated by quarrying operations and transportation is mainly PM₁₀ and PM_{2.5}, and emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO₂) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

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

4.2.4.2 MITIGATION MEASURES

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

Table 4.3 Mitigative Measures for Air Environment

S.NO	Activity	Consequence	Mitigative Measures
1	Drilling	Dust Emission	Usage of wet drilling
			Covering of drill holes with wet cloth
			Usage of sharp drill bits for drilling of holes.
			Provision of dust mask to workers working at highly dust prone and affected areas.
2	Blasting	Prompt dust emission	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
			Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
			Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
			Use of controlled blasting techniques with milli second delay detonators to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Dust emission, Gaseous Emission	Proper maintenance of HEMM will be carried out to minimize dust and gaseous emission at the source level.
			Water sprinkling will be carried out at excavation and loading area.
			Imparting sufficient training to operators on safety and environmental parameters.
			Avoiding overloading of dumpers.
4	Transportation	Dust emission, Gaseous Emission	Regular wetting of transport road using mobile water tanker.
			Proper maintenance of haul road and other roads
			Avoiding overloading of tippers
			Covering of loaded tippers with tarpaulins during transportation
5	Greenbelt	Dust emission, Gaseous Emission	Vehicular emissions will be controlled through regular and proper preventive maintenance only PUC valid vehicles will be used for transportation.
			Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
6	Occupation Health	Dust emanation, Gaseous Emission	Dust mask will be provided to the workers and their use will be strictly monitored
			Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
			Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed.

4.2.4.3 AIR QUALITY IMPACT PREDICTION

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

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

ARRIVING EMISSION FACTOR

Emission factor for PM₁₀ for different activities are given below.

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

Source

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

EMISSIONS FROM THE PROPOSED PROJECT

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

TABLE 4.6 Pm 10 And Pm 2.5 Emission From Mining Activities

S. No.	Activity	PM10	PM2.5
1	Wet drilling	0.22	0.04
2	Ore loading	0.87	0.16
3	Transportation	0.23	0.05

MODEL INPUT DATA:

The air pollution modeling carried out represents the normal operating scenarios. As the project is a mining project the major source of pollution is particulate matter. The SO_x and NO_x emission will be very less only due to vehicular emission. So the pollutant taken for prediction of incremental concentration is particulate matter (PM₁₀ & PM_{2.5}). The predicted incremental Ground Level Concentrations (GLCs) for particulate matter is likely to be contributed by the proposed project. The average predicted 24 hr average concentration has been tabulated as below.

EMISSION ESTIMATION

The emission estimations for the activities are detailed below.

Table 4.7 - Area Emissions – Total Material handling

Quantity, TPA	Rough Stone: 8,89,905 m ³ Gravel : 1,87,500m ³
Operational Hours Per Year	2400
Activity Rate, t/hr.	400.5416667
Emission of dust, g/t.	0.14
Emission of dust, g /hr.	56.07583333
Area of influence, m ²	635
Uncontrolled emission rate g/s/m ²	0.000041234
Controlled emission rate, PM10 g/s/m ²	0.0000041234
Controlled emission rate, PM2.5 g/s/m ²	0.000002009

Table 4.8 - Line Source – Transport of Rough Stone from Pit to Boundary

Quantity, TPA	Rough Stone : 8,89,905 Gravel : 1,87,500m ³
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	44650
Lead length/trip, Km	0.8
Total VKT/Year	76904
Emission Kg/VKT	0.26
Total emission Kg/Year	19325.02
Uncontrolled emission rate g/s/m	4. 41234
Controlled emission rate, PM10 g/s/m	0.41234
Controlled emission rate, PM2.5 g/s/m	0.2009

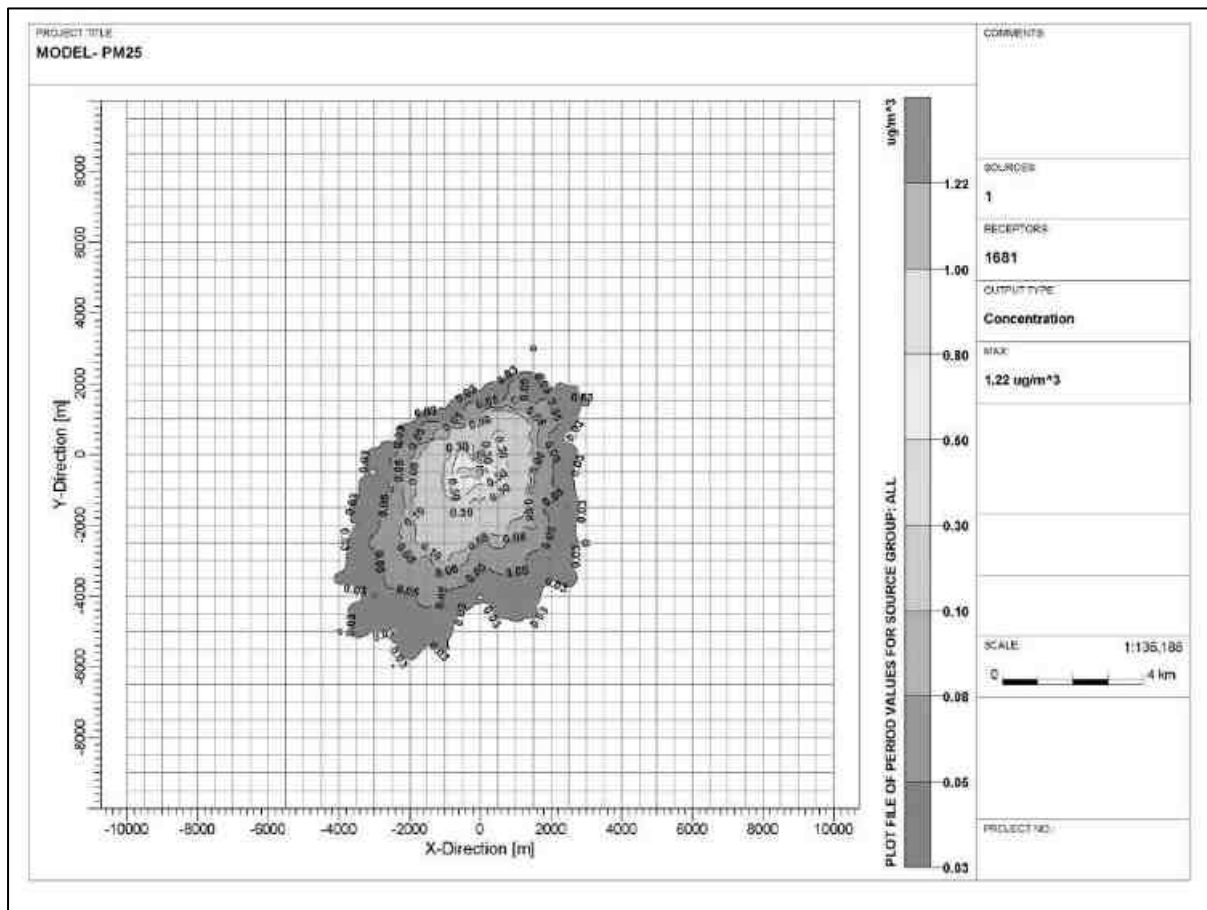


Figure 4.2 Isopleth of GLC Prediction for PM_{2.5}

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

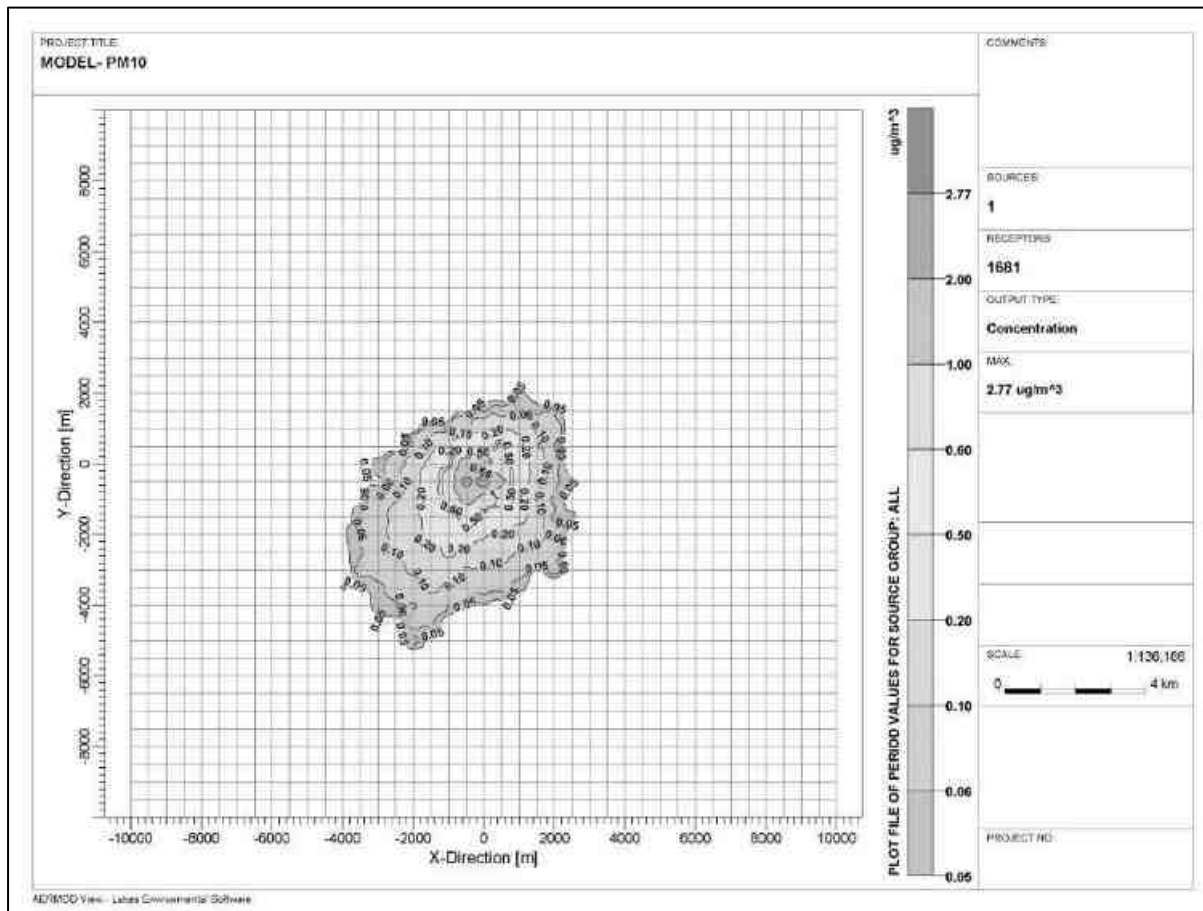


Figure 4.3 - Isoleth of GLC Prediction for PM10

PREDICTED AMBIENT AIR QUALITY:

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

Table4.9: Concentrations of PM_{2.5} after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	MINE LEASE AREA	33.9	<1.00	34.9	60
2	SENDUNRAPURAM	28.6	<1.00	29.6	
3	KUMARALINGAPURAM	24.8	<1.00	25.8	
4	AAA COLLEGE	23.1	<1.00	24.1	
5	KAVULUR	27.7	<1.00	28.1	
6	MAVADE	30	<1.00	31	
7	VADAMALAIKURICHI	26.7	<1.00	27.7	

Table4.10: Concentrations of PM 10 after Project Implementation

SL.No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	MINE LEASE AREA	72.9	<1.00	73.9	100
2	SENDUNRAPURAM	60.9	<1.00	61.9	
3	KUMARALINGAPURAM	53.5	<1.00	54.9	
4	AAA COLLEGE	50.7	<1.00	51.5	
5	KAVULUR	58.8	<1.00	59.8	
6	MAVADE	52	<1.00	53	
7	VADAMALAIKURICHI	54.3	<1.00	55.3	

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 $75.15 \mu\text{g}/\text{m}^3$ to $69.07 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $34.4 \mu\text{g}/\text{m}^3$ to $27.0 \mu\text{g}/\text{m}^3$ 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.

4.2.5 NOISE ENVIRONMENT

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

4.2.5.1 IMPACT DUE TO NOISE AND VIBRATION

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

Table 4.11 - The likely noise level in the lease area

SL.No	Source Name	Noise Level in dB (A)
1	Diesel generator	102
2	Excavator Operation	95
3	Trucks movement	95
4	Drilling	105
5	Blasting	120

4.2.5.2 MITIGATION MEASURES FOR NOISE CONTROL

The following noise mitigation measures are proposed for control of Noise

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

- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

4.2.5.3 GROUND VIBRATION

The vibration due to blasting can cause damage to the nearby structures if appropriate technology and control measures are not adopted in the blasting operation. Fly rock is another possible damage causing outcome of blasting. There are many factors which influence fly rock during blasting. Most important of these factors are long explosive column with little stemming column, improper burden, loose material or pebbles near the holes and long water column in the hole.

Mitigative Measures

- Proper quantity of explosive, suitable stemming materials and appropriate delay system should be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting should be maintained as per DGMS guidelines;
- Blasting shelter should be provided as per DGMS guidelines;
- Blasting operations shall be carried out only during day time;
- The charge per delay shall be minimized and preferably more number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity shall be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- Blasting will be carried out under the supervision of statutory persons as approved by DGMS.
- A well-defined SOP will be framed under the leadership of top management and the same will be followed for each blasting.
- Regular PPV monitoring will be carried out to ensure PPV limits i.e., 0.5 mm/s.

4.3 BIOLOGICAL ENVIRONMENT

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

A detailed anticipated impact of Ecology and Biodiversity due to mining activity is described in below Table.

Table 4. 12 Ecological Impact Assessments and Its Mitigations -Part 1

S.NO	Issues	Assessment	Mitigations
1	Proximity to national park/ wildlife sanctuary / reserve forest / mangroves / coastline/estuary/sea	Nil Within 10 Km	The fugitive dust generated by the mining activity will be suppressed by frequent sprinkling of water based on evaporation rate in the site specific.
2	Activities of the project affects the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in mining lease site. The fauna sighted mostly migrated from buffer area. The fauna in the buffer zone may be affected by noise generated due to mining activity.	The noise due to the mining activity will be controlled by developing green belt all along the lease boundary, regular maintenance of tippers, excavators, transporting the tippers within speed limits.
3	Located near an area populated by rare or endangered species	No endangered, critically endangered, vulnerable species sighted in core mining lease area and also in buffer zone.	NIL
4	Proposed project restricts access to waterholes for wildlife	No waterholes are in core zone. No Wild life sanctuary within 10km radius.	NIL
5	Proposed mining project impact surface water quality that also provide	„NO“ scheduled or threatened wildlife animal sighted regularly in core area. There is no proposal for discharge of	NIL

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	water to wildlife	wastewater to nearby water bodies.	
6	Proposed mining project increase siltation that would affect nearby Biodiversity area.	Surface runoff management structures like garland drain, settling pond etc. as explained above will be constructed and as such there will not be any appreciable impact on surface water quality which in turn can affect the bio diversity of the area.	
7	Risk of fall/slip or cause death to wild animals due to project activities	In the post mining stage, wire fencing is proposed all around the mined-out void to prevent falling of animals in the mine pits.	
8	The project release effluents into a water body that also supplies water to a wildlife	As the proposed project is mining activity there will be no possibilities of release of effluents. Also, no Wild life sanctuary within 10km radius.	NIL
9	Mining project effect the forest-based livelihood/ any specific forest production which local livelihood depended	Two reserved forest located beyond 1 km radius. So, the proposed mining activity does not affect forest and forest products.	NIL
10	Project likely to affect migration routes	No migration route observed during monitoring period.	NIL
11	Project likely to affect flora of an area, which have medicinal value	No such significantly important medicinal value species within the ML area and its nearby region.	NIL
12	Forestland is to be diverted, has carbon high sequestration	„NO“. There is no forest land within the lease area.	NIL
13	The project likely to affect wetlands, fish breeding grounds, marine ecology	‘NO’. No wetland, fish breeding grounds, marine ecology present in core mining area.	NIL

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

Table 4.13 Ecological Impact Assessments and Its Mitigations -Part 2

Identified Impacts	Ecological Significance of impact	Magnitude	Phase / duration	Reversibility	Mitigation
Project site Habitat due to Site Clearance.	There are no trees in the core zone. The Mining activity will be carried within the lease area. No clearance of vegetation in the buffer zone	Low impact	Planning stage	Irreversible	The quarried-out pit will be used as water storage pond which increases agricultural activity in the buffer zone.
Impact on Surrounding habitat due to fugitive emission	The fugitive emission due to the mining activities such as drilling, blasting, loading and transportation on the haul road will be deposited on the flora and crop field in the buffer zone which affects growth and its productivity.	Temporary Impact	Operational stage	Reversible	The sprinkling of water over the haul road will be done. Then completely wet drilling will be take place. The transportation vehicles will be maintained and serviced Properly.
road construction	No Road construction is required to assess the project site. The existing internal Road connects the project site to the existing SH and NH	No Impact	-	-	-
Ecological Impact on Surrounding/ Eco sensitive habitat due to waste water generated from the project activity.	Since the proposed project is a mining activity no waste water generation is expected. Sewage will be generated due to the workers	No impact	-	-	-

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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

4.4 MITIGATION MEASURES

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

4.4.1 GREENBELT DEVELOPMENT PLAN

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

Table – 4.14 Greenbelt Development Plan (inside mine lease area)

S.No.	Year	Species	No. of trees	Spacing	Survival
1	I	<i>Azadirachta indica, Ficus benghalensis, F. religiosa, Holoptetea integrifolia, Pongamia pinnata and Tamarindus indica</i>	1100	3m x 3m	80%
2	II		0		
3	III		0		
4	IV		0		
5	V		0		
6	VI		0		
7	VII		0		
8	VIII		0		
9	IX		0		
10	X		0		
Total			1100		

Nearly 0.84.50 Ha. of area is proposed for Greenbelt development by planting 1100 Nos of trees .

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

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

4.4.2 SOCIO – ECONOMIC

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

The mining operations in the proposed mine will employ about 19 persons directly and 14 people on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

- Project related logistical operations for transport of Rough Stone, etc,
- Various trading services for consumer goods, spare parts, sundry items, etc.
- Contractual services connected with the project.
- Green belt and horticultural works in the project.
- Casual labor needs for various activities.

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

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

From above details, it is clear that the project operations will have highly beneficial positive impact in the area. However, towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs.8.0 Lakhs under Corporate Environmental Responsibility.

4.4.3 OCCUPATIONAL HEALTH AND SAFETY

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

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

- Respiratory hazards
- Noise
- Explosive storage and handling

Respiratory Hazards

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

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

Noise

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

The following measures are proposed for implementation

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

Occupational Health Survey

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

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

The PP will establish first aid station within project site.

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

4.4.4 WASTE MANAGEMENT

4.4.4.1 SOLID WASTE

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

4.4.4.2 LIQUID WASTE

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 0.3 KLD will be discharged in soak pit via septic tank.

4.4.4.3 HAZARDOUS WASTE MANAGEMENT

In this project the following management practices will be followed:

In the quarrying operation, the source of hazardous waste is from machinery maintenance activities that are waste oil/ Waste lubricants / Used filters / Used Hydraulic 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 off as per the Hazardous waste (Trans-boundary Movement) Management Rules, 2016.

4.4.4.4 PLASTIC WASTE

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

5.0 ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 ALTERNATE TECHNOLOGY

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

5.2 ALTERNATE SITE

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

6 ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

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

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

6.2 MONITORING MECHANISM

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

6.3 ENVIRONMENTAL MONITORING SCHEDULE AND FREQUENCY

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits. However, based on the need and priority it may be suitably modified / improved in consultation with local authorities. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints. The monitoring schedules to be adopted in this quarry are given below.

Table 6.1 - Environmental Monitoring Schedule

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 in a 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 in a season

6.4 BUDGET FOR IMPLEMENTAION

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and Monitoring work will be outsourced to external laboratory approved by NABL / MoEF. The capital and recurring cost required for the project are detailed in below table.

Total EMP Cost for 10 years is 546.84 lakhs i.e., Rs.51.405 Lakhs of Capital + Recurring cost Rs. 495.43 lakhs for ten years. The breakup of EMP cost is elaborated in Table 10.2 of Chapter 10.

6.5 SUBMISSION OF PERIODICAL REPORTS

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

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

Periodical reports to be submitted to: -

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

6.6 DETAILED BUDGET AND PROCUREMENT SCHEDULES

The summary of budget planned for environmental monitoring is given in below tables. Refer Chapter 10 for detailed EMP budget.

Table 6.2 - Environmental Management Plan Budget (in Lakhs)		
Mitigation Measures	Capital cost	Recurring Cost /Annum
Air Environment	11.71	2.65
Noise Environment	0.50	23.43
Waste Management	0.30	0.22
Mine Closure	15.59	0.84
Implementation of EC, Mining Plan & DGMS Condition	6.17	12.25
Total	34.27	39.39
The total EMP Cost is 546.84 Lakhs (For 10 Years) i.e., Rs. 51.405 Lakhs of Capital Cost (Rs. 34.27 Lakhs for 1st first Five years and Rs. 17.135 Lakhs for 2nd five years*) + Rs. 495.43 Lakhs of Recurring cost (@ 5% Escalation) for 10 Years		

7 ADDITIONAL STUDIES

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

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

7.1 PUBLIC CONSULTATION

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

7.2 RISK ASSESSMENT

The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities. The whole quarry operation will be carried out under the direction of a Qualified Competent person holding certificate of competency to manage a metalliferous mine granted by the DGMS. Factors of risks involved due to human induced activities in connection with this proposed mining & allied activity with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

Table 7.1 Risk Assessment and Control Measures

S.NO	Risk Factor	Causes of risk	Control Measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations. Entry of unauthorized persons will be prohibited. Fire-fighting and first-aid provisions in the mine office complex and mining area. Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use. Quarry operation will be done as per approved mining plan and other applicable statutory guidelines issued by DGMS, Dept. of Mining & Geology-TamilNadu. Handling of explosives, charging and firing shall be carried out under competent statutory persons. A comprehensive standard operating procedure (SOP) will be prepared as per DGMS guidelines and the same will be circulated to all the employees and it will be strictly followed in the all face of mining operation.
2	Drilling	Improper and unsafe practices. Due to high pressure of compressed air, hoses may burst. Drill Rod may break.	Safe operating procedure established for drilling (SOP) will be strictly followed. Only trained operators will be deployed. No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places. Drilling shall not be carried on simultaneously on the benches at places directly one above the other. Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual.

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru. P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

			Drills unit shall be provided with wet drilling to ensure efficient working.
3	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/ fining of blast holes. Vibration due to movement of vehicles.	Restrict maximum charge per delay as per approved mining plan. Proper blasting design with optimum spacing & burden, Charge per delay and stemming. SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation. Shots are fired during day time only. Charging and firing shall be carried out in the same day. Siren will be done for each blasting. Blasting evacuation plan prepared and executed. The danger zone will be distinctly demarcated (by means of red flags).
5	Transportation	Potential hazards and unsafe workings contributing to accident and injuries. Overloading of material. While reversal & overtaking of vehicle. Operator of truck leaving his cabin when it is loaded.	Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition. Unauthorized person will not be allowed to operate or ride on the vehicle. Loading according to the vehicle capacity. Periodical maintenance of vehicles as per operator manual.
6	Natural calamities	Unexpected happenings	An emergency management plan will be prepared considering all possible natural calamity and the same will be executed if any such situation occurs. Escape Routes will be provided to prevent inundation of storm water. Fire Extinguishers & Sand Buckets in the designated areas.
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

7.3 DISASTER MANAGEMENT PLAN

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

7.3.1 MODEL DISASTER MANAGEMENT PLAN

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

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

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

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

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

7.3.2 OBJECTIVE OF DISASTER MANAGEMENT PLAN

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

Communication System

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

Facilities

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

Personnel

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

Operating Procedures

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

7.4 CUMULATIVE IMPACT STUDY

There are one existing Quarry and this proposed quarry are located within a radius of 500 m from this proposed project area. The existing and proposed quarries situated within 500 m radius are presented in below Table 7.2 and the letter received from Dept. of Geology and Mining, Virudhunagar stating the quarries detail within 500m radius is enclosed in Annexure – 4.

Table 7.2 Details of Quarries within 500m radius

S.No	Name and address of the lessee	Village & Taluk	S.F.no & Extent in Hectare	Lease Period
i. Existing Quarries				
1	Thiru.P.K.Muthuraj, S/o.Periakengaiah Nayakkar, 4/32,Chandrakiripuram, Parvali Post, Virthunagar	Virudhunagar Taluk, And Seeniyapuram	88/5& 3.13.5 (Hect)	KV1/809/2018 Dated 08.08.2020 26.08.2020 to 25.08.2025
2	Thiru.R.Ramar S/o.Raju 4/560,Chinnavallikulam Village Aruppukottai	Virudhunagar Taluk, And Seeniyapuram Pavali village	97/2B 232/1 232/3 & 2.58.50 (Hect)	KV1/411/2018 Dated 07.02.2019 23.02.2019 to 2.02.2024
ii. Abandoned Quarries				
Nil				
iii. Proposed Quarries				
1	Thiru.P.K.Sankar Raj, S/o. Periya Kengaiya, no. 4/328, Chandragiripuram, Pavali, Virudhunagar District.	Pavali Village, Virudhunagar Taluk 244/1	4.61.50	Proposed quarry

The total lease within the 500m radius (Proposed + Existing) (1 nos + 2 nos) works out to 10.33.50 Ha including this lease area. As such, in the cluster situation, ToR is applicable under the EIA notification of 2006 and its time-to-time amendment. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

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

Table 7.3 Salient Features of Existing & Proposed Quarries

Description		P1	P2	P3
Name of the Quarry		Thiru.P.K.Sankar Raj	Thiru.P.K.Muthuraj	Thiru.R.Ramar
Geological Resources in m ³	Rough stone	20,26,080	3,03,200	88220
	Gravel	2,25,120	1,81,920	-
Mineable Reserves in m ³	Rough stone	8,89,905	1,79,075	88200
	Gravel	1,87,500	1,39,986	-
Ten years plan period as in the approved mining plan	Rough stone	8,89,905	1,79,075	88220
	Gravel	1,87,500	1,39,986	-
Production per day in m ³	Peak Production	20245	25920	17644
Lorry Loads per day in Nos	-	72	7.3	7
Employment in Nos		34	12	10
Proposed Depth in meters		50	16	-
Status of the quarry		Proposed	Existing	Existing

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

7.4.1.1 PREDICTED AMBIENT AIR QUALITY

The cumulative post project Concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after proper mitigative measures is given in Table – 7.4 & 7.5.

Table 7. 4 Incremental & Resultant GLC within cluster for PM_{2.5}

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	MINE LEASE AREA	33.9	<1.00	34.9	60
2	SENDUNRAPURAM	28.6	<1.00	29.6	
3	KUMARALINGAPURAM	24.8	<1.00	25.8	
4	AAA COLLEGE	23.1	<1.00	24.1	
5	KAVULUR	27.7	<1.00	28.1	
6	MAVADE	30	<1.00	31	
7	VADAMALAIKURICHI	26.7	<1.00	27.7	

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

SL.No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	MINE LEASE AREA	72.9	<1.00	73.9	100
2	SENDUNRAPURAM	60.9	<1.00	61.9	
3	KUMARALINGAPURAM	53.5	<1.00	54.9	
4	AAA COLLEGE	50.7	<1.00	51.5	
5	KAVULUR	58.8	<1.00	59.8	
6	MAVADE	52	<1.00	53	
7	VADAMALAIKURICHI	54.3	<1.00	55.3	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

The air quality modeling report for cluster seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM_{10} are in the range of $76.46 \mu\text{g}/\text{m}^3$ to $56.71 \mu\text{g}/\text{m}^3$ and for $PM_{2.5}$ are in the range of $34.78 \mu\text{g}/\text{m}^3$ to $27.0 \mu\text{g}/\text{m}^3$ which are within the statutory limits in each case.

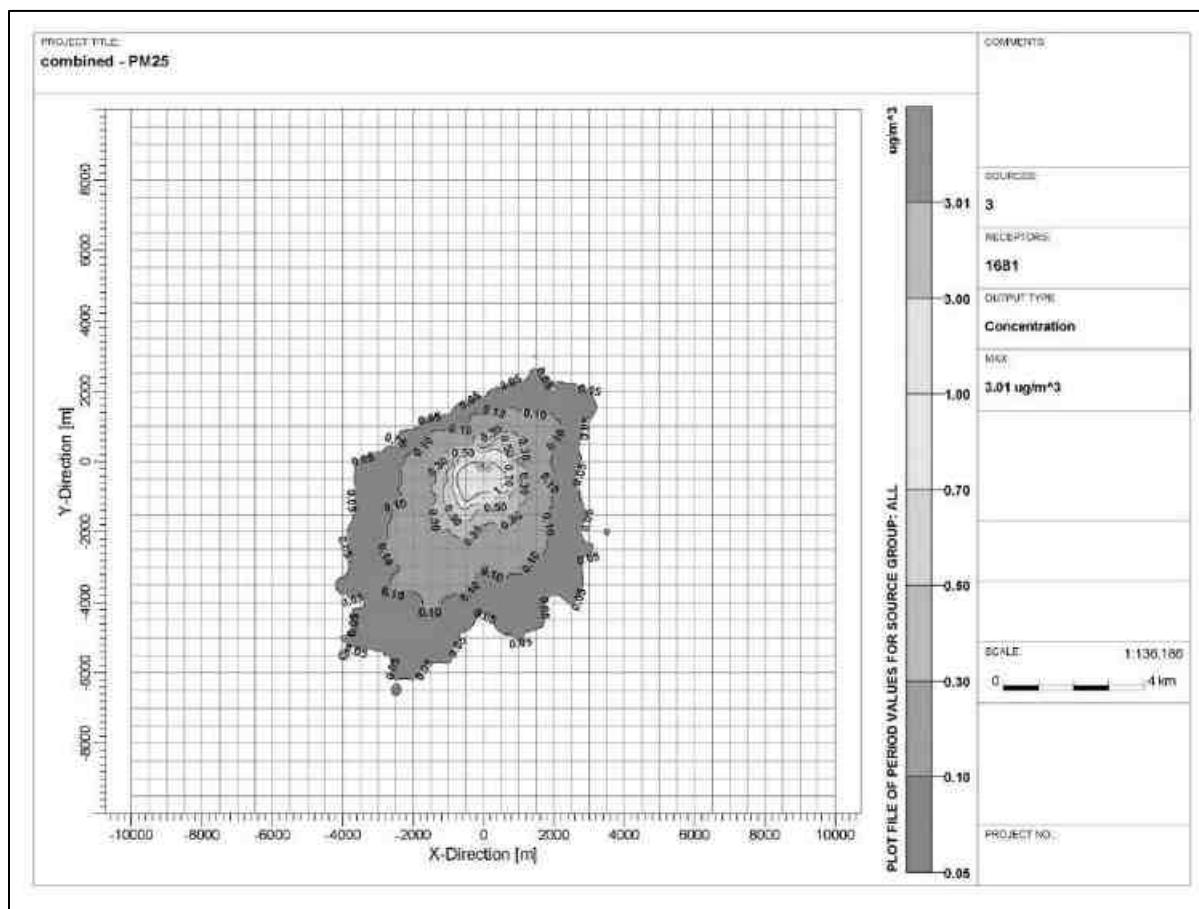


Figure 7.1 Cluster Isopleth of GLC Prediction for $PM_{2.5}$

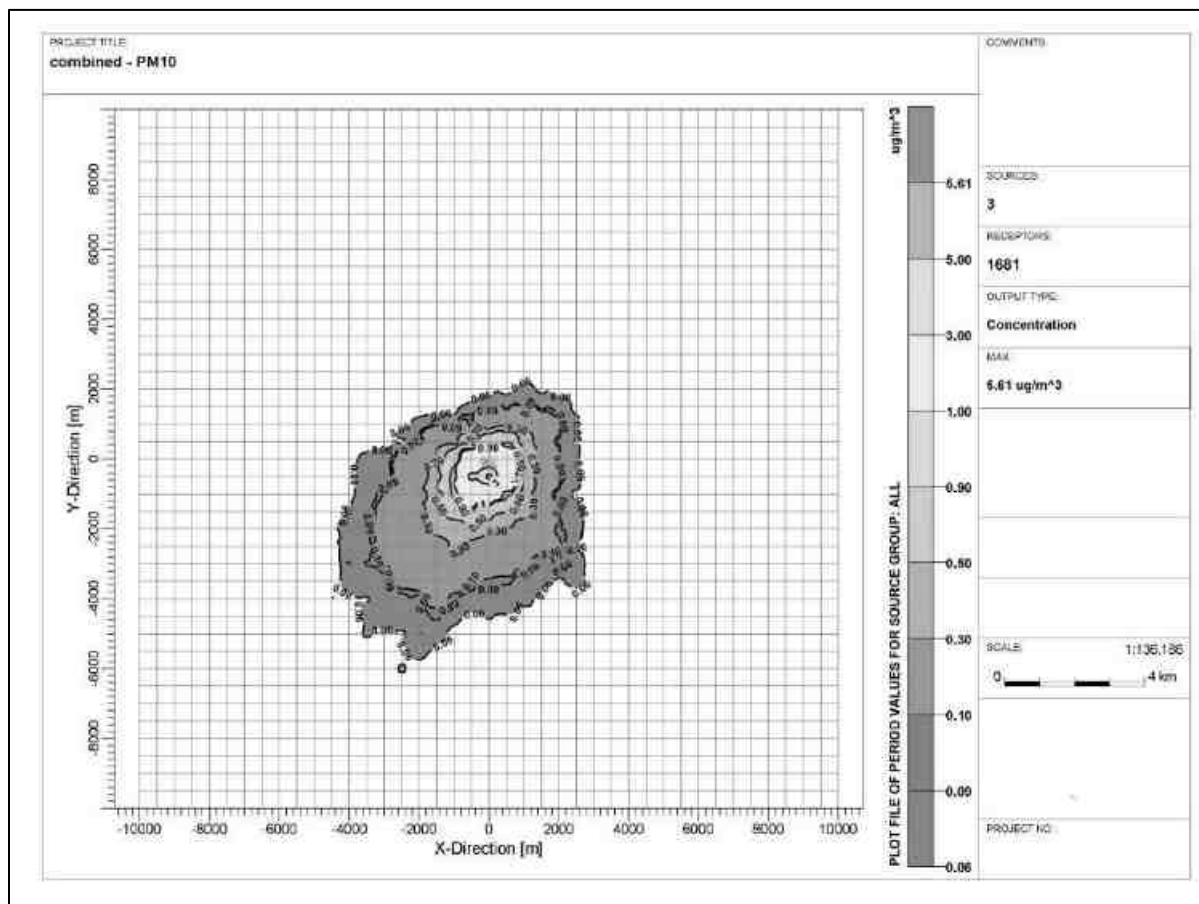


Figure 7.2 - Cluster Isopleth of GLC Prediction for PM₁₀

7.4.2 CUMULATIVE IMPACT ON SOCIO-ECONOMIC ENVIRONMENT

The mining operations in the 2 mines will provide direct employment opportunity and indirect employment opportunity for scores of people through allied opportunities in logistics, contract workers, trading, repairing works etc. Various mitigative measures suggested in this report will be properly implemented to ensure that no adverse impact is felt on the socio economic and ecological front in the area. Socio Economic benefits from these two quarry are as follows:

Description	Employment	Project Cost	CER Cost
P1- Proposed Quarry	34	Rs.724.67	Rs.8,00,000/-
P2-Existing Quarry	12	Rs.126.21	Rs.5,00,000/-
P3- Existing Quarry	10	Rs.30.55	Rs.2,00,000/-
Total	56	Rs. 88,14,300	Rs.15,00,000

7.4.2.1 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.

7.4.2.2 SLOPE STABILITY ACTION PLAN

The proposed quarry is a small quarry and the production is also less. Opencast mechanized mining with a bench height of 5m and bench width of 5m with 80° Slope is proposed. The depth of mining is proposed as 50m (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

Project proponent allocated INR 2.0 Lakhs as a Capital cost in the EMP budget for slope stability analysis and implementation of slope stabilization techniques.

7.4.2.3 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 mines office.

7.4.3.4 MINE CLOSURE PLAN

The quarrying operation is proposed up to a depth of 50m (BGL) only, which will be achieved in 10 years. The ultimate pit dimension will be 250m x 150m x (50m BGL). After quarry reaches pit limit of 50m BGL depth (for this lease period), fencing will be constructed around the quarried pit to prevent inherent entry of the public and cattle. This pit will work as rainwater harvesting pit. Below are the action plan for mine closure:

- ✚ Office, workshop & internal roads will be planted with local species and maintained for a period of 1 year.
- ✚ Filling of Gravel benches with soil and carrying out plantations.
- ✚ Fencing the mined out void area with the barbed wire and leaving the void as the water storage area by installing water meter to measure the water level.
- ✚ Monitoring the accumulated water in the mined out voids for the period of 3 years of mine closure.

8 PROJECT BENEFITS

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

The mining activity at proposed Rough Stone and Gravel Quarry of Thiru.P.K.Sankar Raj will create direct employment opportunity for 34 local people. The PP has proposed CER amount of Rs. 8.0 Lakhs for surrounding schools development(Annexure No.12).

9 ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10 ENVIRONMENTAL MANAGEMENT PLAN

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

10.1 ENVIRONMENTAL POLICY

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

The Proponent will:

- Abide by all laws, ordinances, rules, and regulations that are pertinent to its operations and activities.
- Allocate the resources required to guarantee that the environmental policy is carried out.
- Implement a programme to educate employees about environmental issues in general and their personal environmental responsibilities at work.
- Set up monitoring systems to alert as soon as there is a problem or a performance that is unexpected in relation to environmental protections.

10.2 ENVIRONMENTAL MANAGEMENT PLAN

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

Table 10.1 - ENVIRONMENTAL MANAGEMENT PLAN

Environmental Parameter	Mitigation Measures
Air	Wet drilling to suppress the dust emission from drill machine
	Regular water sprinkling on haulage road through fixed water sprinkler.
	2.0 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.
Water	
Ground Water	The quarrying operation is proposed upto a depth of 50 m maximum below ground level, the water table in the area is 66 m & 66m below ground level, hence the project will not intersect the Ground water table during entire quarry period.

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Water Consumption and Wastewater generation	The required water of 5.0 KLD will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose.
	Domestic wastewater generation of 0.3 KLD will be discharged in soak pit via septic tank.
	Conduct ground water and surface water monitoring for parameters specified by CPCB
Noise	The workers employed are provided with personal protective equipment (PPE) as such, earmuffs and ear-plugs for the protection from high noise level generated at the mine site wherever required.
	Noise levels are controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.
	Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained.
	Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation.
	Regular ambient noise level monitoring will be 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.
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.
	ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material.
	Undertake noise or vibration monitoring.

Land Environment	There is no change will be in the land use pattern as mentioned in the approved mining plan a such mine pit, safety zone etc., At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area.
	Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.
	The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.
	Frequent Soil and ground water testing as per Environmental Monitoring Plan.
Gravel / Overburden	There is no waste anticipated in this Rough Stone and Gravel Quarry. The entire quarried minerals will be utilized.
Biological Environment	During mining, three layer thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,
	The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
	Regular review on Greenbelt development programme.
	Year wise greenbelt development plan mentioned in Chapter IV

10.3 ADMINISTRATION AND TECHNICAL SETUP

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

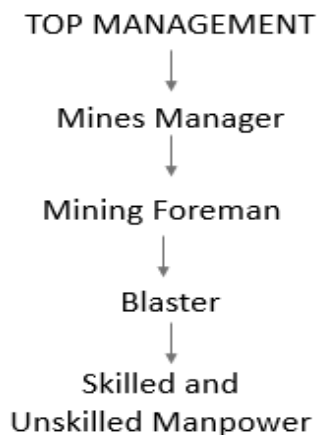


Figure 10.1 Organization Chart

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

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.4 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

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

10.5 BUDGETARY PROVISION FOR ENVIRONMENTAL MANAGEMENT

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

Table 10.2 Environmental Management Plan Budget

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.46	0.46
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	8.0	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	2.50	0.25
	No overloading of trucks/tippers/tractors	0.00	0.04

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	Stone carrying trucks will be covered by tarpaulin	0.00	0.10
	Enforcing speed limits of 20 km/hr within ML area	0.25	0.03
	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	0.92
	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		11.71	2.65
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	23.41
Sub-Total (B)		0.50	23.43
Waste Management	Provision for domestic waste collection and disposal through authorized agency	0.25	0.20
	Installation of dust bins	0.05	0.02
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	0.46	0.05
	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	9.23	0.10
	Plantation inside ML area (1000 Nos.)	3.60	0.54
	Plantation outside ML area (1100 Nos.)	0.60	0.06
Sub-Total (D)		15.59	0.84
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	1.36	0.34
	Health checkup for workers will be provisioned	0.00	0.34

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

First Aid facility Provision	0.00	0.09
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	2.31	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
Slope Stablitiy Action Plan	2.00	0.00
Sub-Total (E)	6.17	12.25
Grant Total	34.27	39.39

Table 10.3 - Environmental Management Plan Budget (in Lakhs)		
Mitigation Measures	Capital cost	Recurring Cost /Annum
Air Environment	11.71	2.65
Noise Environment	0.50	23.43
Waste Management	0.30	0.22
Mine Closure	15.59	0.84
Implementation of EC, Mining Plan & DGMS Condition	6.17	12.25
Total	34.27	39.39
The total EMP Cost is 546.84 Lakhs (For 10 Years)		
i.e., Rs. 51.405 Lakhs of Capital Cost (Rs. 34.27 Lakhs for 1 st first Five years and Rs. 17.135 Lakhs for 2 nd five years*) + Rs. 495.43 Lakhs of Recurring cost (@ 5% Escalation) for 10 Years		

10.6 CONCLUSION

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

11. SUMMARY AND CONCLUSION

11.1 INTRODUCTION

This EIA Report is prepared for Thiru. P.K.Sankar Raj RoughStone and Gravel Quarry over an extent of 4.61.50 Ha. Government land in S.F. No244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu in compliance with ToR obtained vide TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025.

Although the individual lease area of this project is less than 5 hectares, the existing Quarry within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 10.33.50 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

This cluster includes the nearby one existing Quarry namely Thiru.P.K.Muthuraj, Pavali Village, 88/5 (3.13.5 Ha) & Thiru.R.Ramar, Pavali Village,97/2B,232/1&22/3(2.58.50 Ha).

This project proposed to produce 8,89,905m³ of Rough Stone and 1,87,500m³ of Gravel for the period of 10 years with ultimate depth upto 50 m BGL.

11.2 PROJECT DESCRIPTION

Table 11.1 Salient Features of the Project

Description	Salient Feature
Name of the Project	Thiru.P.K.Sankar Raj Rough stone & Gravel Quarry
Location of the Project	S.F. No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu.
Latitude & Longitude	Latitude: 09°35'43.22"N to 09°35'52.58"N Longitude: 77°54'08.06"E to 77°54'15.19"E
Toposheet No.	58 G /14
ML Area	4.61.50 Ha

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Type of Land	Patta Land
Geological Resource	Rough Stone – 20,26,080m ³ Gravel - 2,25,120m ³
Mineable Reserves	Rough Stone – 8,89,905 m ³ Gravel - 1,87,500m ³
Proposed Production for first Five years	Rough Stone – 7,89,215m ³ Gravel- 1,87,500m ³
Life of the mine	10 years
Proposed depth of mining	50 m bgl
Method of Mining	Opencast mechanized mining involving drilling and blasting
Proposed bench height and width	Bench Height & Width – 5m.
Total Waste	There is no overburden anticipated.
Gravel / Overburden	There is no overburden anticipated as per the approved Mining Plan.
Water Requirement & source	Total – 5.0 KLD. The required water will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.
Proposed Manpower Deployment	34 Nos
Total Project Cost	Rs. 724.67 Lakhs
Nearest Highway	There is an existing road from the area leads to Pavali– Moolipatti road on northern side of the area. The National Highway (NH-44) Salem – Tirunelveli is about 4.1km on eastern side of the area. The State Highway (SH-182) Alagapuri - Virudhunagar is about 0.9Km on northeastern side of the area.
Nearest Railway Station	Virudhunagar – 5.0 km – E The Nearest Railway line is Virudhunagar to Sivakasi

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	line which is about 5.4Km on southern side of the area.
Nearest Airport	Madurai Airport – 32.0 Km – NE
Nearest Major Water bodies	Core Zone – NIL Buffer Zone • Odai-290m (S) • Urani-325m (NW) • Kuttai-365m (SW)
Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	NIL within 10 km radius
Reserved / Protected Forests	NIL within 10 km radius
Nearest Village	Pavali – 1.4 km – NE Kunthalpatti – 2.2 km – NW Kumaralingapuram– 1.2 km – SE Amathur – 4.9 km – SW
Seismic Zone	Zone II

11.3 DESCRIPTION OF THE ENVIRONMENT

The baseline monitoring study was carried out during October to December 2024 to assess the existing environmental scenario in the area. For the purpose of EIA studies, project area was considered as the core zone and area outside the project area up to 10km radius from the periphery of the project site was considered as buffer zone. Baseline Environmental data has been collected for: -

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

11.3.1 LAND ENVIRONMENT

The existing land use pattern of the study area is tabulated below in table 11.2.

Table - 11.2 Land use Pattern of the study area

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1	Built-up land	16.72	5.17
2	Crop land	227.72	70.40
3	Existing Quarry	0.01	0.003
4	Fallow land	0.25	0.07
5	Land with scrub	27.02	8.35
6	Land without scrub	17.52	5.41
7	Plantations	17.67	5.46
8	Water bodies	16.54	5.14
	Total Area	323.45	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

11.3.2 SOIL CHARACTERISTICS

Results of the soil samples show that the pH values were found to be 8.23 to 8.55 and Electrical Conductivity values were ranging between 13.09 – 187.4 $\mu\text{mhos/cm}$. Soils are generally Silt Loam. Organic matter values were ranging between 0.20 – 1.82 %. Total Nitrogen values were ranging between 155 – 246 mg/kg. Phosphorus values were ranging between 0.56 – 0.74 $\mu\text{g/g}$. Potassium values were ranging between 314 – 533 mg/kg. Sodium values were ranging between 450 – 787 mg/kg. Total Sulphate values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in Table no – 3.14.

11.3.3 AMBIENT AIR QUALITY

The results of ambient air quality monitoring for the period (October-December 2024) are presented in Chapter 3. The ambient air quality data for PM₁₀, PM_{2.5}, SO₂, NO₂, CO studied at 5 locations as per prescribed guidelines/ methods. As per the monitoring data, the PM₁₀ values were in the range of 54.2 – 72.9 µg/m³. PM_{2.5} values were in the range of 25.2 – 33.9 µg/m³. SO₂ levels were ranging from 5.1 - 8.1 µg/m³. NO₂ levels were ranging from 8.1 -13 µg/m³. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM₁₀, PM_{2.5}, SO₂, NO₂ & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL – 1144 µg/m³).

11.3.4 WATER ENVIRONMENT

Ground Water

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

As Per the data it has been observed that the pH value varies from 7.25-7.72, Chlorides Ranges From 21.8-104 mg/l, Sulphates value found to be between 14-183 mg/l, Fluoride Ranges low in lease area i.e. 0.21-0.42, Hardness varies from 186-321 mg/l, and Total dissolved solid 248-740 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

11.3.5 NOISE ENVIRONMENT

From the table it is observed that the day Equivalent Noise (Leq-d) level were ranging from 46.0 to 52.5 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 37.8 to 42.7 (A). Day and Night Equivalent Noise (Leq-n) level were ranging from 44.6 to 50.8 dB(A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time in Residential areas, the monitored ambient noise levels are within the limit values.

11.3.6 BIOLOGICAL ENVIRONMENT

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

11.3.7 SOCIO-ECONOMIC ENVIRONMENT

An attempt has been made to assess the impact of the proposed mining project at Pavali Village on Socioeconomic aspect of the study area. The various attributes that have been taken into account are population composition, employment generation, occupational shift, household income and consumption pattern. Implementation of the Proposed Mine Project will generate both direct and indirect employment. Besides, Mining operation will be legally valid and it will bring income to the state exchequer.

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in Chapter 4 of this report.

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

Anticipated Impacts & Mitigation Measures

Impact	Mitigation Measures
Land Environment	
❖ Destruction of natural landscapes ❖ Changes in soil characteristics ❖ Soil erosion and slope instability ❖ Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles.	❖ Rough stone does not produce any toxic effluents in the form of solids, liquids, or gases. ❖ At the end of life of mine, the excavated mine pit / void of 3.75.0 Ha. will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season. ❖ After mine closure the greenbelt (0.84.5 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure. ❖ The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands. ❖ Entire mined out area will be properly fenced to prevent inadvertent entry of human and animals. ❖ Construction of garland drains all around the quarry pit and construction of settling traps at strategic location in lower elevations to prevent soil erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

Water Environment	
❖ Impact due to Usage of Water in mines ❖ Generation of waste water from vehicle washing ❖ Domestic sewage ❖ Washouts from surface exposure or working areas ❖ Impact on Surface Water Resources ❖ Impact on Ground water ❖ Impact on Water Quality ❖	❖ There is no proposal for a rough stone processing or workshop within the project area, so no effluent is anticipated in the mine. ❖ The required water (5.0 KLD) will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. ❖ Regular water quality will be carried in nearby villages to ensure the water quality is not affected due to the quarrying activities. ❖ Domestic sewage from site office & urinals/latrines provided in project area will be discharged through septic tank followed by soak pit system. ❖ Only clear and settled water free from silt content will be used for dust suppression and greenbelt development. ❖ De-silting will be carried out before and immediately after the monsoon season and the settling tank and drains will be cleaned weekly, especially during monsoons. ❖ The dimension of the rain water harvesting pond will be 25m x 20m x 20m with capacity of 10000 cu.m. The rain water stored in the pond will be utilized for plantation, dust suppression activities.
Air Environment	
❖ Generation of Fugitive Dust ❖ Dust will be generated mainly during excavation, loading & unloading activities. ❖ Reduction in visibility due to dust plumes.	❖ 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

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

❖ Coating of vegetation leading to reduced photosynthesis. ❖ Inhibited growth, destroying of foliage, degradation of crops; ❖ Increase in health hazards due to inhalation of dust.	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. ❖ Speed restrictions will be imposed to avoid spillage of loaded materials upon the road and to reduce wear and tear of the road. ❖ Weekly inspections of the condition of the access road by competent person employed, and immediate action will be taken to address any potholes or damage to the road surface. ❖ Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area. ❖ Personal Protective Equipment's will be provided to all workers
Noise & Vibration	
❖ The main noise generating source during mining operation and related activities are drilling, excavation, loading, unloading and transportation.	❖ Usage of sharp drill bits while drilling which will help in reducing noise; ❖ Secondary blasting will be totally avoided and hydraulic rock breaker are utilized for breaking boulders; ❖ Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise; ❖ The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system; ❖ Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise; ❖ Provision of sound insulated chambers for the workers working on

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	machines (HEMM) producing higher levels of noise; ❖ Green Belt will be developed around the project areas and along the haul roads. The plantation minimizes propagation of noise; ❖ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness. ❖ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects
Ground Vibration	
❖ The vibration due to blasting can cause damage to the nearby structures if appropriate technology and control measures are not adopted in the blasting operation. ❖ Fly rock is another possible damage causing outcome of blasting.	❖ Proper quantity of explosive, suitable stemming materials and appropriate delay system should be adopted to avoid overcharging and for safe blasting; ❖ Adequate safe distance from blasting should be maintained as per DGMS guidelines; ❖ Blasting shelter should be provided as per DGMS guidelines; ❖ Blasting operations shall be carried out only during day time; ❖ The charge per delay shall be minimized and preferably more number of delays will be used per blasts; ❖ During blasting, other activities in the immediate vicinity shall be temporarily stopped; ❖ Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

	❖ Blasting will be carried out under the supervision of statutory persons as approved by DGMS. ❖ A well-defined SOP will be framed under the leadership of top management and the same will be followed for each blasting. ❖ Regular PPV monitoring will be carried out to ensure PPV limits i.e., 0.5 mm/s.
Biological Environment	
❖ Direct impacts include land clearance and excavation causing destruction of flora and fauna and loss of habitats. ❖ Indirect impacts include habitat degradation due to noise, dust, and human activity.	❖ Only some common herbs, shrubs and grass will be cleared. So, there will be no impact on the biodiversity. ❖ Green belt development with suitable species will enhance the biodiversity of the project area. ❖ The core zone or buffer zone does not encompass any threatened flora or fauna species.
Socio-Economic Environment	
❖ Health and safety of workers and the general public. ❖ Increase in traffic volumes and sizes of road vehicles. ❖ Economic issues, including the increase in employment opportunities.	❖ Around 34 local workers will get employment opportunities along with periodical training to generate local skills. ❖ Mine management will contribute for the upliftment of these villages by conducting regular medical camps, assistance in developing necessary infrastructure facilities like maintenance of schools, village roads, drinking water supply, etc.
Occupational Health & Safety	
❖ Exposure to Dust ❖ Noise and Vibration Exposure ❖ Physical Hazards ❖ Respiratory hazards due to Dust exposure	❖ Provision of rest shelters for mine workers with amenities like drinking water etc. ❖ All safety measures like use of safety appliances, such as dust masks,

	helmets, shoes, safety awareness programs, awards, posters, slogans related to safety etc. ❖ Training of employees for use of safety appliances and first aid in vocational training centre. ❖ Weekly maintenance and testing of all equipment as per manufacturers' guidelines. ❖ Pre placement and Yearly Medical Examination of all workers by a medical Officer. ❖ First Aid facility will be provided at the mine site. ❖ Close surveillance of the factors in working environment and work practices which may affect environment and worker's health by the mine's manager employed. ❖ Working of mine as per approved mining plan and environmental plans.

11.5 ANALYSIS OF ALTERNATIVES

There are no alternatives suggested as the proposed mining area has the following advantages:

- ❖ The mineral deposit occurs in a non-forest area.
- ❖ There is no habitation within the applied lease area; hence, no R & R issues exist.
- ❖ There is no river, stream, nallas and water bodies in the or passing through the applied mine lease areas.
- ❖ Mine connectivity through road and rail is good.
- ❖ The proposed mining operations do not intersect the ground water level. Hence, no impact on ground water environment.

11.6 ENVIRONMENTAL MONITORING PROGRAM

Environmental Monitoring program will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB. Post project monitoring program is detailed in Chapter 6.

PP will supervise the overall environmental management plan of the project during operation. The capital cost of Rs. 51.405 Lakhs and the recurring cost of Rs. 495.43 Lakhs have been allocated under the EMP budget which includes Environmental Monitoring Cost.

11.7 ADDITIONAL STUDIES

Risk Analysis & Disaster Management Plan

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS). The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention.

Further, mechanisms responsible for these hazards are identified and their control measures set to time table are recorded along with pinpointed responsibilities. In the unlikely event that a consequence has occurred, disaster management kicks in. This includes instituting procedures pertaining to a number of issues such as communication, rescue, and rehabilitation. These are addressed in the disaster management plan. Both, the RA and DMP, are living documents and need to be updated whenever there are changes in operations, equipment, or procedures. Assessment is all about preventing accidents and taking necessary steps to prevent it from happening.

The Disaster Management Plan (DMP) is a guide, giving general considerations, directions, and procedures for handling emergencies likely to arise from planned operations. The DMP has been prepared on the basis of the Risk Assessment and related findings covered in the report.

Terms of Reference with Public Hearing (ToR) for the project was issued vide TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025. Now, this Draft EIA / EMP Report is prepared for conducting Public Hearing as the project falls under B1 Category.

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

Cumulative Impact Study

The baseline monitoring conducted for this project reflects the cumulative impact of the existing quarry and impact of this proposed project on air environment do not exceed the permissible limits set by CPCB for air pollution.

As P2 project is an existing quarry, they are part of the current traffic. The proposed project will bring 17 trips per day. The existing road can absorb this additional traffic due to this project.

The existing project provided employment opportunities for 34 people and this proposed will provide direct employment opportunities for 34 people.

The previous project had a CER budget of Rs. 50, 000/-, and this proposed project has allocated Rs.8.0 Lakhs as the CER budget.

11.8 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 34 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.

11.9 CONCLUSION

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

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

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

12 DISCLOSURE OF CONSULTANTS

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

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over a lease extent of 4.61.50 Ha & a cluster extent of 10.33.50 Ha at Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu.

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

EIA Coordinator Name: Manikandan Manickam


Signature & Date

Period of involvement: October 2024 to December 2024.

Contact information:

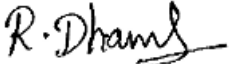
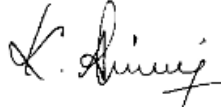
M/s Global Mining Solutions

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

Kottamettupatty, Omalur,

Salem, Tamil Nadu – 636 455

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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: October 2024 to December 2024.</u>	
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: October 2024 to December 2024.</u>	
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October 2024 to December 2024.</u>	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

4	SE	Sarasvathy K	Baseline SE study. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan. <u>Period: October 2024 to December 2024.</u>	
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: October 2024 to December 2024.</u>	
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. <u>Period: October 2024 to December 2024.</u>	
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: October 2024 to December 2024.</u>	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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: October 2024 to December 2024.</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: October 2024 to December 2024.</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: October 2024 to December 2024.</u>	P. Prashant
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of Gravel. <u>Period: October 2024 to December 2024.</u>	Shisupal Sing

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

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: October 2024 to December 2024.</u>	

TM-FAE:

S.No	Name of TM (FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	M.Prabu	LU	T.Srilatha	<u>Oct 2024 to Dec 2024.</u>	Associated with FAE in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment	
		HG	Ashok Kumar		Associated with FAE in studying hydrogeological pattern of study area, Studying ground water and the impact of the project	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

					on ground water	
2	M. Manikandan	EB	S.Saravanan	<u>Oct 2024 to Dec 2024.</u>	Associated with the expert in baseline data collection related to ecology of the study area	
		SC	Shishupal Singh		Associated with the expert in Soil monitoring, secondary data collection on soil type, soil management practices, utilization of top soil	

TM-FAA:

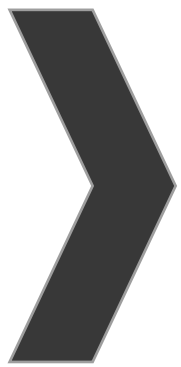
S. No	Name of TM (FAA)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	S. Kamaraj	HG	Ashok Kumar Rajagopal	<u>Oct 2024 to Dec 2024.</u>	Associated with Experts in studying hydrogeological pattern of study area, Studying ground water and the impact of the project on ground water	

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

2	Asan Ali S	GEO	Valliappan Meyyappan	<u>Oct 2024 to Dec 2024.</u>	Associated with the expert in preparing Geological map, assessing stability of quarry slope faces and dump, management plan for mine stability, after use of mining quarry and geological features of the area	S. Asan ali
		NV	Srilatha Thiruveedhula		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.	
3	Mownica. B	AP	Dhanalakshmi Ramanathan	<u>Oct 2024 to Dec 2024</u>	Associated with expert team in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution	Mownica
		NV	Dhanalakshmi Ramanathan		Associated with the expert team in suggesting control measures for noise and Ground Vibration.	
4	G.Balasubramani	GEO	Valliappan Meyyappan	<u>Oct 2024 to Dec 2024</u>	with the expert in preparing Geological map, assessing stability of quarry slope faces and dump, management plan for mine stability, after use of mining quarry and geological features of the	G. Balasubramani

Draft EIA EMP report of Proposed Rough stone and Gravel Quarry of Thiru.P.K.Sankar Raj, S.F.No. 244/1 over an Extent of 4.61.50 Ha in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu

					area	
		NV	Srilatha Thiruvedhula		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.	



ANNEXURE-1



File No: 11520
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated 11/01/2025



To,

Thiru. P.K. Sankar Raj
S/o. Periya Kengaiya, no. 4/328, Chandragiripuram, Pavali, Virudhunagar District, Virudhunagar ,
VIRUDHUNAGAR, TAMIL NADU, Virudhunagar , 626103
pksankarraaj1970@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Proposed Rough Stone & Gravel quarry over an extent of 4.61.50Ha in S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu by Thiru. P. K. Sankar Raj - 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/506080/2024, Dated: 28/11/2024.

2. Your application submitted for Terms of Reference dated:29.11.2024.

3. Minutes of the 523rd SEAC meeting held on 27.12.2024.

4. Minutes of the 787th SEAC meeting held on 08.01.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B0108TN5972965N
(ii) File No.	11520
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry of Thiru. P.K.Sankar Raj
(viii) Name of Company/Organization	P K SANKAR RAJ
(ix) Location of Project (District, State)	VIRUDHUNAGAR, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal 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) Appraisal Committee of SEIAA in the meeting held on 08.01.2025. 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 of Thiru. P.K. Sankar Raj 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.

Copy To

1. The Principal 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, Virudhunagar District.
6. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Specific Condition:

S. No	Terms of Reference
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 8,89,905m³ of rough stone and 1,87,500m³ of gravel upto the depth of 50m BGL and the annual peak production of 1,87,250m³ of rough stone and 37,500m³ of gravel for the period of 10 years as per approved mining plan under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC, standard conditions stipulated by MoEF&CC & the following conditions: 1. The PP shall carry out the studies assessing the impact of mining on drainage pattern and agricultural activities and submit the study report and the mitigation measures along with the EIA Report. 2. It was noted from the KML, agricultural activity is carried out around the proposed site. Hence the PP is requested to furnish the No Objection Certificate (NOC) from the competent Authority of

S. No	Terms of Reference
	Agricultural Department and submit along with the EIA Report.

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: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities. 2. The PP shall erect the DGPS reference pillars painted with blue & white colour indicating the safety barrier of 7.5 m to be left under the Rule 13 (1) of MCDR, 1988 within the lease boundary and protective bunds and submit the photographic/videographic evidence along with the EIA report. 3. 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. 4. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 5. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 6. The PP shall carry out the scientific studies to assess the existing hydrogeological conditions and impacts of the quarrying operation on the agricultural activities present in the core zone, by involving any one of the reputed Research and Academic Institutions such as TN Agricultural university, etc and the report shall be furnished with the mitigation measures proposed during the quarrying operation. 7. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. 9. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.

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:

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

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

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

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 areashould 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 givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea 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 rea 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,

S. No	Terms of Reference
	distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)

S. No	Terms of Reference
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 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

S. No	Terms of Reference
	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 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

S. No	Terms of Reference
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

SEIAA STANDARD CONDITIONS:

Cluster Management Committee

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
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.

Agriculture & Agro-Biodiversity

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.

Forests

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.

Water Environment

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

24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
27. The EIA shall include the impact of mining activity on the following:
- a) Hydrothermal/Geothermal effect due to destruction in the Environment.
 - b) Bio-geochemical processes and its foot prints including environmental stress.
 - c) Sediment geochemistry in the surface streams.

Energy

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

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.
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.

Mine Closure Plan

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

EMP

33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.

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.

Risk Assessment

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

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

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-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

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 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

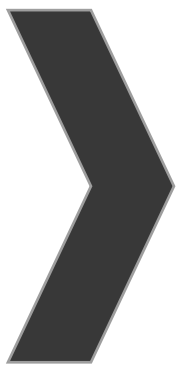
should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the 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

புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/683/2024

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
விருதுநகர்.

நாள்: 04.10.2024.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் மற்றும் வட்டம் - பாவாலை கிராமம் - பட்டா புல எண்.244/1 மொத்தம் 4.61.50 ஹெக்டேர்ஸ் - 10 (பத்து) வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை:**
1. திரு.பி.கே.சங்கர்ராஜ், த/பெ.பெரிய கெங்கையா, 4/328, சந்திரகிரிபுரம், பாவாலை, விருதுநகர் விண்ணப்பம் நாள்:25.06.2024.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/683/2024, நாள்: 25.06.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
 3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3288/2024, நாள்: 28.08.2024.
 4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்:11.09.2024.
 5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
 6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
 7. தொடர்புடைய ஆவணங்கள்.

விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாலை கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பில் 10 (பத்து) ஆண்டுகளுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம், மாவட்டம் மற்றும் வட்டம், சதுரகிரிபுரம், பாவாலை, க.எண்.4/328 என்ற முகவரியில் வசித்து வரும் திரு.பி.கே.சங்கர்ராஜ், த/பெ.பெரியகெங்கையா என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளார்.

P.K. சங்கர்ராஜ்



சாத்தூர், வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் விலக்குத் துறை, உதவி புவியியலாளர் அறிக்கையில் மனுதாரர் குவாரி உரிமம் வழங்கக் கோரிய புலம் விருதுநகர் மாவட்டம் மற்றும் வட்டம், புல எண்.244/1 பரப்பு 04.61.50 ஹெக்டேர்ஸ் நிலம் பட்டா எண்.2537-ல் பெரிய கெங்கையா மகன் பெ.கெ.சங்கர்ராஜ் என்பவர் பெயரில் தாக்கலாகியுள்ளது எனவும்,

குவாரி உரிமம் வழங்கக் கோரிய புல எண்.244/1-க்கு நான்குமால் விபரம்:-

- வடக்கு - சீனியாபுரம் கிராம எல்லை
- தெற்கு - புல எண்.243/1 - சிந்தலையா புஞ்சை நிலம்,
242/4 - சிந்தலையா (ம) 1 நபர் நிலம்,
- கிழக்கு - புல எண்.244/2 - கார்த்தி புஞ்சை நிலம்
- மேற்கு - புல எண்.233 - ராமர் புஞ்சை நிலம்

குவாரி உரிமம் வழங்கக் கோரிய புலங்களிலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்பு பகுதிகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் கோயில், மகுதி, நினைவுச் சின்னங்கள், உயர் மற்றும் தாழ்வழுத்த மின் பாதைகள் மற்றும் இடுகாடுகள் ஏதும் இல்லை. 500 மீட்டர் சுற்றளவில் புராதன சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம் ஏதும் இல்லை. மேலும், குவாரி அமையவுள்ள இடத்திலிருந்து 300-500 மீட்டர் தொலைவிற்குள் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5-ல் (பரப்பு 3.13.50 ஹெக்டேர்) பாவாலி கிராம உட்கடை திரு.முத்துராஜ் என்பவரின் கிராவல் குவாரி அமைந்துள்ளது. விண்ணப்ப புல எண் கள்ளர் கண்டிஷன் ஜாரி, பஞ்சமர் கண்டிஷன் ஜாரி நிலங்கள், தடை ஆணை புத்தகத்தில் குறிப்பிடப்பட்டுள்ள நிலங்கள், அரசு வகைக்கு சிறப்பு ஒதுக்கீடு செய்யப்பட்ட நிலங்கள் ஏதும் இல்லை. பொது மக்களிடம் ஆட்சேபணை ஏதும் உள்ளதா என்பது குறித்து அ1 நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை.

மேற்படி, நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமையவுள்ள இடத்தின் நான்கு புறங்களிலிலும் மேற்படி உரிமம் கோரும் ஆஜர்பட்டாதாரர் நிலங்களே அமைந்துள்ளது. மேற்படி நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமைய உள்ள இடத்திற்கு முறையான பாதை (விருதுநகரிலிருந்து — வத்திராயிருப்பு, அழகாபுரி, ஸ்ரீவில்லிபுத்தூர் செல்லும் நெடுஞ்சாலையின் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அனுசூல பாதை வசதி உள்ளது என்றும், மேற்படி திரு.பி.கே.சங்கர்ராஜ் என்பவர் விண்ணப்ப புலத்தில் எடுக்கப்படும் உடைகல் மற்றும் கிராவல் சீனியாபுரம் கிராம புல எண்.88/5 வழியாக பாதையாக பயன்படுத்திக்கொள்ள திரு.பி.கே.முத்துராஜ் என்பவர் சம்மதப் பத்திரம் அளித்துள்ளார் எனவும்,

P.R. சுவாமிநாதன்



மேற்படி, குவாரி அமைய உள்ள கிராமத்தில் அ1 நோட்டீஸ் பிச்சு செய்து, பொதுமக்களிடமிருந்து நாளது தேதி வரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை எனவும் மேற்படி குவாரி அமையவுள்ள புலமானது நிதிக்குடி ஊராட்சி, வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கு உட்பட்டதாகும் எனவும்,

எனவே, விருதுநகர் மாவட்டம் மற்றும் வட்டம் பாவாலி கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பு நிலத்தில் பத்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் திரு.பி.கே.சங்கர்ராஜ் என்பவருக்கு தமிழ்நாடு சிறுகனிம விதிகளுக்கு உட்பட்டு வழங்க பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அணுகு பாதையாக உள்ளது. எனவே, புல எண்.88/5 ல் உள்ள கிராவல் குவாரிக்கு பாதிப்பு ஏற்படுத்தாதவாறு குவாரி பணிகள் செய்தல் வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாலி கிராமம், பட்டா புல எண்:244/1 மொத்த பரப்பு 4.61.50 ஹெக்டேரில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி பத்து (10) வருடகாலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

P.K. சிவசுப்பிரமணியன்

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


4/10/24

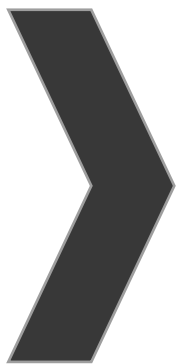
உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெறுநர்
திரு.பி.கே.சங்கர்ராஜ்,
த/பெ.பெரிய கெங்கையா,
4/328, சந்திரகிரிபுரம்,
பாவாவி,
விருதுநகர் மாவட்டம்,


4/10/24

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

P.R. 2394/2024



ANNEXURE-3

From

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

To

Thiru. P.K.Sankar raj
S/O periya kengaiya,
No.4/328,Charidiragipuram,
Pavalli village ,Virudhunagar Taluk,
Virudhunagar District-626 125.

Roc.No:KV1/683/2024, Dated: 24.10.2024.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District - Virudhunagar Taluk - Pavalli Village - Patta Land - S.F.Nos: 244/1 Extent 4.61.50 Hectares - Quarry lease application preferred by Thiru. P.K.Sankar raj ,S/O periya kengaiya, for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

- Ref:**
1. Quarry lease application received from Thiru. P.K.Sankar raj dated:25.06.2024.
 2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/683/2024, Dated: 04.10.2024.
 3. Thiru. P.K.Sankar raj S/O periya kengaiya letter, dated: 24.10.2024.

Thiru. P.K.Sankar Raj S/O periya kengaiya, has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.Nos: 244/1 of pavali Village, Virudhunagar Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.No: 244/1 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 , 3 & 4

P.K. Sankar Raj

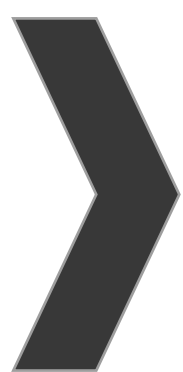
1. The Mining Plan is approved without prejudice to any other law applicable to the quarry permission from time to time where such Laws are made by the State Government or any other authority.
2. This approval of the Mining Plan does not in any way imply the approval of the Government in terms of any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

Encl: Two copies of Mining Plan.


Assistant Director,
Geology and Mining,
Virudhunagar.

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

P.A. [illegible]



APPROVAL MINING PLAN



MINING PLAN FOR PAVALI 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 : VIRUDHUNAGAR
TALUK : VIRUDHUNAGAR
VILLAGE : PAVALI
S.F.NO : 244/1
EXTENT : 4.61.50Ha

ECO-FRIENDLY



SUSTAINABILITY



SAFETY



FOR

APPLICANT

Thiru.P.K.Sankar Raj,
S/o.Periya Kengaiya,
No.4/328, Chandragiripuram,
Pavali, Virudhunagar District.

PREPARED BY

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person
1699 / 1 - Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) - 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.



(PPE)

PK. 2020 108

P.K.Sankar Raj,
S/o.Periya Kengaiya,
No.4/328, Chandragiripuram,
Pavali, Virudhunagar District.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 4.61.50hectares of Patta lands in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State has been prepared by

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

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

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.

Cell : 98421 26699 & 97502 23535.

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

P.K. Sankar Raj

P.K.Sankar Raj

Place: Virudhunagar

Date: 05.10.2024

P.K. Sankar Raj

P.K.Sankar Raj,
S/o.Periya Kengaiya,
No.4/328, Chandragiripuram,
Pavali, Virudhunagar District.



DECLARATION

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 4.61.50 hectares of Patta lands in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar 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

P.K. Sankar Raj

P.K.Sankar Raj

Place: Virudhunagar

Date: 05.10.2024

This Mining is approved based on guidelines/ instructions issued in the CGM, Letter No.3868/LC/2012 dated 19-11-2012 and incorporation of the particulars specified in the letter No. K.M.1/683/2014.....

Dated.....24.10.2024..... of the Deputy Director of Geology and Mining, Virudhunagar and subject to further Fulfillment of the conditions laid down under rule 41,42 of Tamil Nadu Minor Mineral Concession Rules 1959

[Signature]
Assistant Director of Geology & Mining
Virudhunagar

This Mining Plan is approved Subject to the conditions / Stipulation indicated in the Mining Plan Approval

Letter No. K.M.1/683/24 Dated 24.10.24

P.K. Sankar Raj

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.



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 in the Mining Plan for the grant of **Rough Stone and Gravel** quarry lease over an extent of 4.61.50hectares of Patta lands in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State applied by Thiru.P.K.Sankar Raj, 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.

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

Place: Tirunelveli

Date: 07.10.2024

P.K. Sankar Raj

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.



CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 4.61.50hectares of Patta lands in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State for Thiru.P.K.Sankar Raj, 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.

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

Place: Tirunelveli

Date: 07.10.2024

P.K. Sankar Raj

CERTIFICATE



Certified that I, N.Ravinthiran, residing at 1699 / 1 – Madurai Road, Opp. Abcoy Garden, Sankar Nagar & (Po) – 627357. Tirunelveli District. I am a Post graduate in Geology (App.Geo) from university of Madras 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 4.61.50hectares of Patta land in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District by Thiru.P.K.Sankar Raj, for a period of Ten years. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1) (a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016, the same may be approved by the Competent Authority.

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

Place: Tirunelveli

Date: 07.10.2024

P.K. Sankar Raj

CONTENTS

S. No.	Description	Page No.
1.0	Introduction and Executive Summary	1
2.0	General Information	5
3.0	Location	6
4.0	Geology and Mineral Reserves	8
5.0	Mining	10
6.0	Blasting	15
7.0	Mine Drainage	16
8.0	Other Permanent Structures	17
9.0	Employment Potentials & Welfare Measures	18
10.0	Environment Management Plan	20
11.0	Mine Closure Plan	23
12.0	Any Other Details Intend to furnish by the Applicant	24

P.H. G. S. S. S.



Annexure

S. No.	Description	No.
1.0	Precise Area Communication letter issued by the Assistant Director, 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 Identity Proof	VII
8.0	Copy of QP Certificate	VIII

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, Geological plan and sections	III
8.0	Mineable plan and sections	IV
9.0	Year wise Development and Production Plan & Sections	V
10.0	Second Five Yearwise Development & Production Plan & Sections	VA
11.0	Progressive Quarry Closer Plan & Sections	VI
12.0	Conceptual Plan & Sections	VII

R. J. J. J.



MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

Over an extent of 4.61.50 hectares of Patta land in S.F.No.244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar 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 Thiru.P.K.Sankar Raj, S/o. Periya Kengaiya, residing at no. 4/328, Chandragiripuram, Pavali, Virudhunagar District.
2. The application was processed by the Assistant Director, Department of Geology and Mining, Virudhunagar, and passed an order vide Rc.No.KV1/683/2024 dated 04.10.2024 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 4.61.50 hectares of Patta lands in S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk and District of Tamil Nadu State for a period of ten years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating following the conditions imposed in the precise area communication letter.
 - a) A safety distance of 7.5m shall be maintained to adjacent patta lands while quarrying operation.
 - b) Gravel quarry (operating) situated in S.F.No.88/5 over an extent of 3.13.50 Ha Pavali utkadai Chandragiripuram is the access approach road to the new quarry through the road leading to gravel quarry of Thiru.P.K.Muthuraj. therefore applicant should not make any hindrance to Gravel quarry located in S.F.No.88/5.

P.K. Sankar Raj



- c) The applicant should be appoint qualified Blaster, during blasting using mild explosive to avoid hindrance to public and adjacent agricultural lands.
 - d) The Draft Mining Plan and Environmental clearance should be submit before the grant of quarry lease.
 - e) All the labours should be registered with the labour welfare Board of Government of Tamil Nadu and to be enrolled in the group insurance Scheme.
 - f) Applicant should not engage child labour during quarry work.
 - g) The minerals should be covered with Tarpaulin during transportation without any hindrance to Transpellers and public.
4. Geological Resources is estimated at 20,26,080m³ of Rough stone and 2,25,120m³ of gravel formation and Mineable Reserves is estimated at 8,89,905m³ of Rough Stone and 1,87,500m³ 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 7,89,215m³ of Rough Stone, 1,87,500m³ of gravel formation for the period of first five years upto a depth of 40m (below ground level) and remaining quantity of 1,00,690m³ of Rough Stone will be proposed for the period of second five years upto a depth of 50m (below ground level).
 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 10km 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).

P.K. Manjivane



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.

Handwritten signature: P. K. J. J. J.



EXECUTIVE SUMMARY:

a.	Name of the Village Panchayat	:	Pavali																														
b.	Name of the Panchayat Union	:	Virudhunagar																														
c.	The proposed total Movable Reserves	:	8,89,905m ³ of Rough Stone, 1,87,500m ³ of gravel formation																														
d.	The proposed quantity of reserves (level of production) for Five years to be mined is(Recoverable reserves)	:	7,89,215m ³ of Rough Stone, 1,87,500m ³ of gravel formation																														
e.	Total extent of the area	:	4.61.50Ha																														
f.	Proposed Period of mining	:	Five Years																														
g.	Existing depth	:	It is fresh quarry lease applied area																														
h.	Proposed Depth of mining	:	40m (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. 30,69,000/- Rs. 82,50,000/- Rs. 6,70,000/- Total Project cost(A+B+C)= Rs.1,19,89,000/-																														
l.	The area applied for lease is bounded by six 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>09°35'43.90"N</td><td>77°54'08.06"E</td><td>1-2 = 163.2m</td></tr> <tr> <td>2</td><td>09°35'49.12"N</td><td>77°54'09.04"E</td><td>2-3 = 109.2m</td></tr> <tr> <td>3</td><td>09°35'52.58"N</td><td>77°54'09.87"E</td><td>3-4 = 165.8m</td></tr> <tr> <td>4</td><td>09°35'51.47"N</td><td>77°54'15.19"E</td><td>4-5 = 259.8m</td></tr> <tr> <td>5</td><td>09°35'43.22"N</td><td>77°54'13.37"E</td><td>5-6 = 51.2m</td></tr> <tr> <td>6</td><td>09°35'43.39"N</td><td>77°54'11.70"E</td><td>6-1 = 112.0m</td></tr> </tbody> </table>			Corners	Co- ordinates		Distance between the corners	Latitude	Longitude	1	09°35'43.90"N	77°54'08.06"E	1-2 = 163.2m	2	09°35'49.12"N	77°54'09.04"E	2-3 = 109.2m	3	09°35'52.58"N	77°54'09.87"E	3-4 = 165.8m	4	09°35'51.47"N	77°54'15.19"E	4-5 = 259.8m	5	09°35'43.22"N	77°54'13.37"E	5-6 = 51.2m	6	09°35'43.39"N	77°54'11.70"E	6-1 = 112.0m
Corners	Co- ordinates		Distance between the corners																														
	Latitude	Longitude																															
1	09°35'43.90"N	77°54'08.06"E	1-2 = 163.2m																														
2	09°35'49.12"N	77°54'09.04"E	2-3 = 109.2m																														
3	09°35'52.58"N	77°54'09.87"E	3-4 = 165.8m																														
4	09°35'51.47"N	77°54'15.19"E	4-5 = 259.8m																														
5	09°35'43.22"N	77°54'13.37"E	5-6 = 51.2m																														
6	09°35'43.39"N	77°54'11.70"E	6-1 = 112.0m																														

P.K. Senthil Kumar



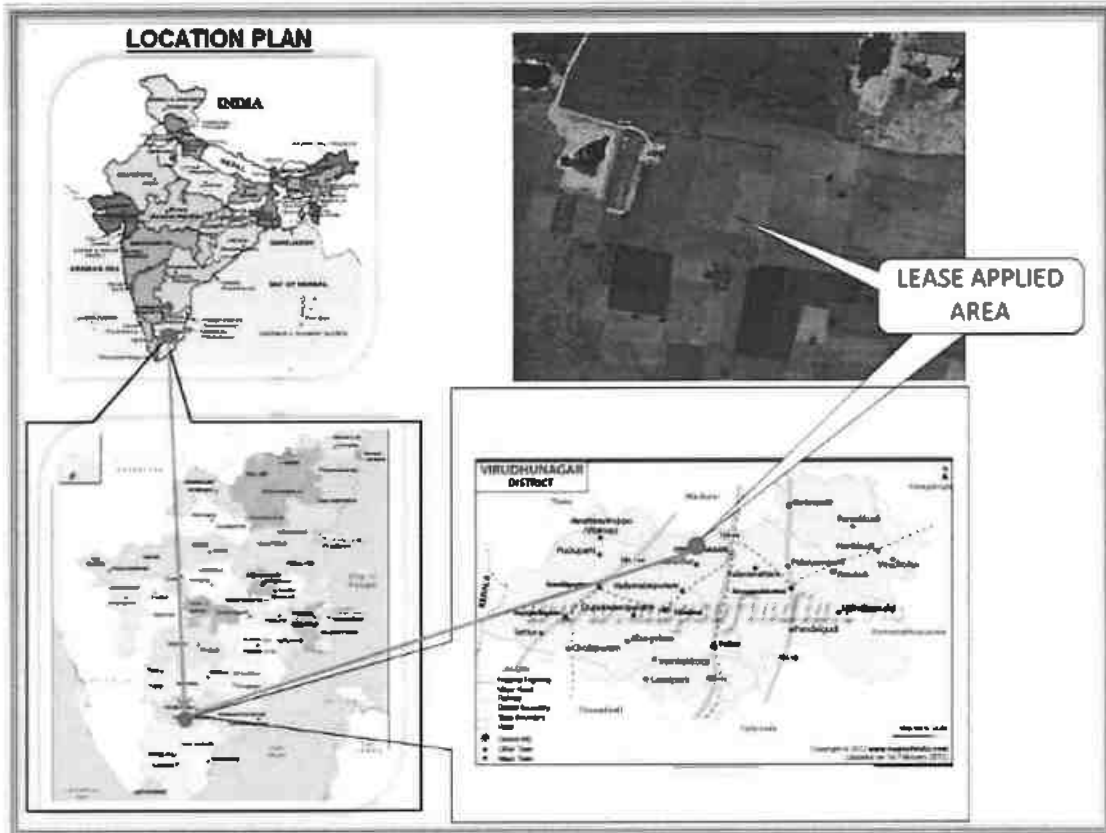
2.0 General Information:			
2.1	a.	Name of the Applicant	: Thiru.P.K.Sankar Raj,
	b.	Address of the Applicant with phone No and e-mail id if any	: S/o. Periya Kengaiya, No. 4/328, Chandragiripuram, Pavali, Virudhunagar District. Pin Code- 626103 Cell No.: 73737 13581
	c.	Status of the Applicant	: Individual
2.2	a.	Mineral Which the applicant intends to mine	: Rough Stone and Gravel.
	b.	Precise area communication letter No.	: Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Virudhunagar, vide Rc.No.KV1/683/2024 dated 04.10.2024.
	c.	Period of permission / lease granted	: The Assistant Director, Department of Geology and Mining, Virudhunagar, has grant of lease period for ten years .
	d.	Name and Address of the QP preparing Mining Plan	: N.Ravinthiran, M.Sc.,(App.Geo) Qualified Person 1699 / 1 – Madurai Road, Opp. Abcoy Garden, Sankar Nagar & (Po) – 627357. Tirunelveli District. Cell : 98421 26699 & 97502 23535.

P.K. Sankar Raj



3.0 Location:

S.No	Details of the Area:	
1	Corner Coordinates	Latitude : 09°35'43.22"N to 09°35'52.58"N Longitude : 77°54'08.06"E to 77°54'15.19"E
2	Toposheet Number	58- G/14
3	The altitude of the area	133m (MSL)
4	Extent	4.61.50Ha
5	Survey Nos	244/1
6	Village	Pavali
7	Taluk	Virudhunagar
8	District	Virudhunagar
9	State	Tamil Nadu



P.R. சந்திரசேகர்



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 applicant, vide patta no. 2537, Please refer Annexure No: IV.
c.	Toposheet No. with Latitude and Longitude	:	Topo Sheet No: 58-G/ 14 Latitude : 09°35'43.22"N to 09°35'52.58"N Longitude : 77°54'08.06"E to 77°54'15.19"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 Pavali- Moolipatti village road on north side of the area. The Nearest Railway line is Virudhunagar to Sivakasi line which is about 5.4Km on south east side of the area.

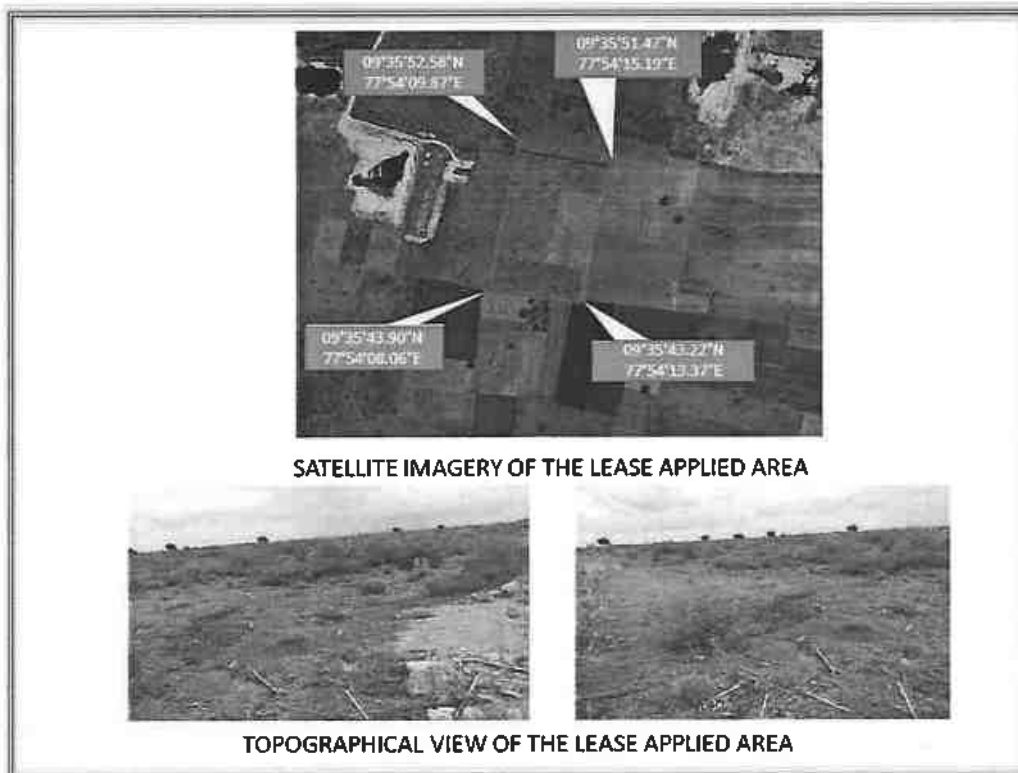


Fig. Location of the lease applied area

P.A. [Signature]



PART - A

4.0 Geology and Mineral Reserves:

4.1	a.	Topography	➤ The area applied for quarry lease is exhibits almost plain covered by Gravel formation. The massive Granitic Gneiss formation is noticed below 5m (Avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 133m (maximum) from MSL. ➤ No major river is found nearby the lease applied area. ➤ Water table is found at a depth of 66m in summer and 63m 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, Granitic Gneiss, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Granitic Gneiss which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Granitic Gneiss is part of peninsular Gneisses, a high grade metamorphic rock. The strike of the Granitic Gneiss formation is N45°E -S45°W with dipping towards SE60°. The general geological succession of the area is given as under.

P.K. சிவசுந்தரன்



				AGE	ROCK TYPE
				Recent	Gravelly soil Unconformity
				Archaean	Dolerite dyke Charnockite. Granitic Gneiss 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 the adjacent 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 50m (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 formation in m ³	Geological Resources of Rough stone in m ³
XY-AB	I	268	168	5	225120	225120	
	II	268	168	5	225120		225120
	III	268	168	5	225120		225120
	IV	268	168	5	225120		225120
	V	268	168	5	225120		225120
	VI	268	168	5	225120		225120
	VII	268	168	5	225120		225120
	VIII	268	168	5	225120		225120
	IX	268	168	5	225120		225120
	X	268	168	5	225120		225120
Total						225120	2026080

Gravel Formation : 2,25,120m³

The Geological Resources of Rough stone : 20,26,080m³

P. R. Prabhakaran



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	250	150	5	187500	187500	
	II	237	137	5	162345		162345
	III	227	127	5	144145		144145
	IV	217	117	5	126945		126945
	V	207	107	5	110745		110745
	VI	197	97	5	95545		95545
	VII	187	87	5	81345		81345
	VIII	177	77	5	68145		68145
	IX	167	67	5	55945		55945
	X	157	57	5	44745		44745
Total						187500	889905

The mineable reserve is computed as 8,89,905m³ of Rough stone and 1,87,500m³ of Gravel formation upto a depth 50m (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.

P.K. ச. சிவசுந்தரன்



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 crushers/other buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers/other buyers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining.
5.3	Proposed bench height & Width	: Quarrying of Rough Stone is proposed bench height of 5m and bench width of 5m.
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.

P.A. Srinivasan



The Yearwise Production and Development Table

Table No -3

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	50	150	5	37500	37500	
		II	43	137	5	29455		29455
		III	38	127	5	24130		24130
		IV	33	117	5	19305		19305
		V	28	107	5	14980		14980
		VI	23	97	5	11155		11155
		VII	18	87	5	7830		7830
		VIII	13	77	5	5005		5005
	Total						37500	111860
II	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250
III	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250
IV	XY-AB	I	50	150	5	37500	37500	
		II	50	137	5	34250		34250
		III	50	127	5	31750		31750
		IV	50	117	5	29250		29250
		V	50	107	5	26750		26750
		VI	50	97	5	24250		24250
		VII	50	87	5	21750		21750
		VIII	50	77	5	19250		19250
	Total						37500	187250

P.H. சிவசுந்தரன்



V	XY-AB	I	50	150	5	37500	37500	30140
		II	44	137	5	30140		30140
		III	39	127	5	24765		24765
		IV	34	117	5	19890		19890
		V	29	107	5	15515		15515
		VI	24	97	5	11640		11640
		VII	19	87	5	8265		8265
		VIII	14	77	5	5390		5390
	Total						37500	115605
Grand Total						187500	789215	

The applicant has proposed to carry out 7,89,215m³ of Rough stone and 1,87,500m³ of Gravel formation upto a depth of 40m (below ground level) for the period of first five years and remaining quantity of 1,00,690m³ of Rough Stone will be proposed for the period of second five years upto a depth of 50m (below ground level).

The proposed tentative yearwise production for 6th to 10th year is given below

Table No-4

Year	section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Mineable Reserves of Rough stone in m³
VI	XY-AB	IX	60	67	5	20100	20100
	Total						20100
VII	XY-AB	IX	60	67	5	20100	20100
	Total						20100
VIII	XY-AB	IX	47	67	5	15745	15745
		X	15	57	5	4275	4275
	Total						20020
IX	XY-AB	X	71	57	5	20235	20235
	Total						20235
X	XY-AB	X	71	57	5	20235	20235
	Total						20235
- Grand Total							100690

R.K. Senthil Kumar



5.5	Machineries to be used																										
a.	Drilling	:	It is proposed to use following machineries for quarrying rough stone																								
	S.No	Type	Nos																								
	1	Jack hammer	10																								
	2	Compressor	3																								
			Dia Hole mm																								
			Make																								
			Motive power																								
			Atlas Copco																								
			Compressed air																								
			Atlas Copco																								
			Diesel Drive																								
b.	Loading	:	Excavator of 0.90m ³ bucket capacity (with Rock breaker attachment) (2No).																								
c.	Transportation	:	Tipper 5Nos (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 ten years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc. Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. Ultimate Pit dimension is given as under, <table border="1"> <tr> <th colspan="4">Ultimate Pit dimension (M) end of Mining plan Period</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>250</td><td>150</td><td>40</td></tr> </table> <table border="1"> <tr> <th colspan="4">Ultimate pit dimension End of the lease period</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>250</td><td>150</td><td>50</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 (M) end of Mining plan Period				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)	I	250	150	40	Ultimate pit dimension End of the lease period				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)	I	250	150	50
Ultimate Pit dimension (M) end of Mining plan Period																											
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)																								
I	250	150	40																								
Ultimate pit dimension End of the lease period																											
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)																								
I	250	150	50																								

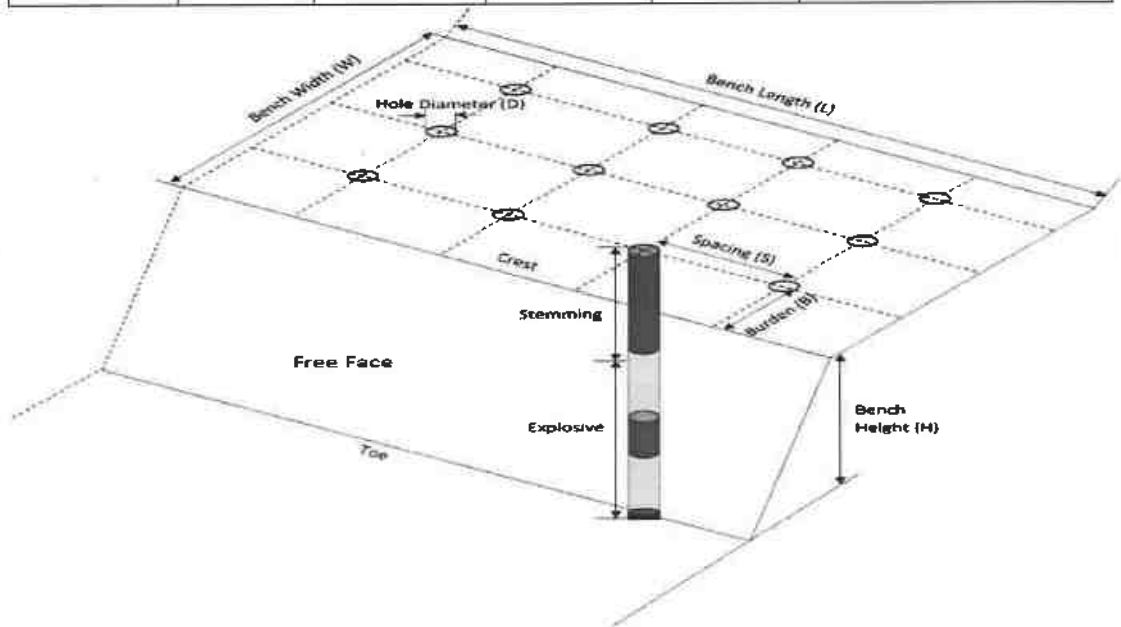
R. 25/10/24



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.

பி. சி. சி. சி.



6.3	Measures proposed to minimize ground vibration due to blasting	➤ Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. ➤ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock. <table border="1"> <tr> <td>Number of holes</td> <td>: 456</td> </tr> <tr> <td>Powder factor</td> <td>: 6Ts/Kg of explosives</td> </tr> <tr> <td>Total explosive required</td> <td>: 228Kg slurry explosives</td> </tr> <tr> <td>Charge / hole</td> <td>: 0.5Kg</td> </tr> <tr> <td>Blasting time</td> <td>: 12-2 Pm</td> </tr> </table>	Number of holes	: 456	Powder factor	: 6Ts/Kg of explosives	Total explosive required	: 228Kg slurry explosives	Charge / hole	: 0.5Kg	Blasting time	: 12-2 Pm
Number of holes	: 456											
Powder factor	: 6Ts/Kg of explosives											
Total explosive required	: 228Kg slurry explosives											
Charge / hole	: 0.5Kg											
Blasting time	: 12-2 Pm											
6.4	Storage of Explosives and safety measures to be taken while blasting.	➤ The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. ➤ The applicant ensure that will appoint the Mate (Should have Valid Blaster Certificate) during Blasting Operation.										
7.0 Mine Drainage:												
7.1	Depth of Water table	The ground water table is reported as 66m below ground level. In the proposed mining plan only 40m (below ground level) and 50m (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										

P.A. 8/10/2024



8.0 Other Permanent Structures:

8.1	Habitations / Village	:	There is no habitations situated within a radius of 300m.
8.2	Power lines (HT/LT)	:	There is no Power line (HT/LT) passing within a radius of 50m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There are four seasonal odai passing on northeast, northwest, south and southwest side of the area and is 240m, 370m, 310m and 480m away from the lease applied area.
8.4	Archeological / Historical Monuments	:	There are no Archaeological / Historical Monuments within a radius of 300m.
8.5	Road (NH, SH, Village Road etc)	:	The National Highway (NH-44) Salem - Tirunelveli is about 4.1km on east side of the area. The State Highway (SH-182) Alagapuri - Virudhunagar is about 0.9Km on northeast 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 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

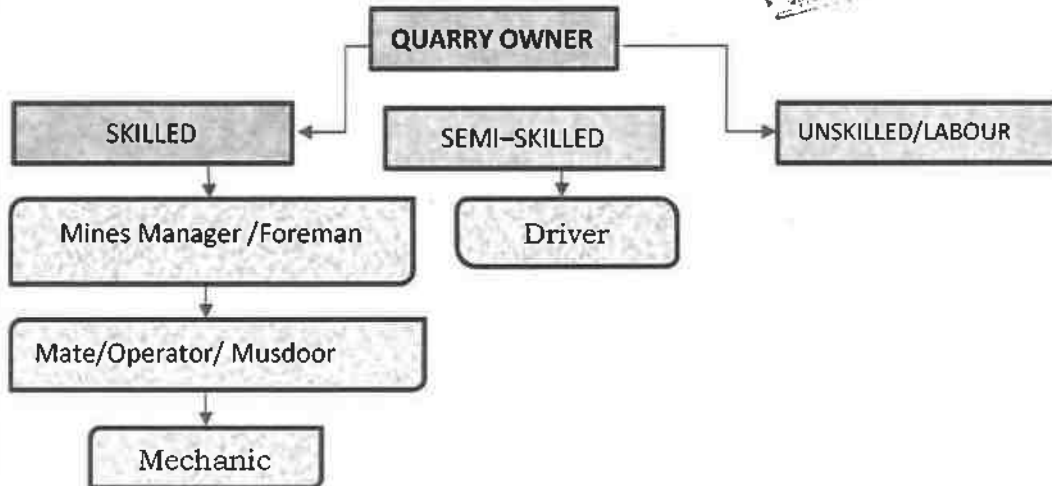
P.K. Sridharan



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	10 No.
		Mechanic	1 No.
2.	Semi-skilled	Driver	5 No.
3.	Unskilled	Labours	15Nos
			Total = 34Nos

Allowing 10% absentee, the no. of men of roll will be around 31.

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 Pavali village which is about 1.4Km on northeast side of the area.

P.H. Sankar

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 5Km (East) in Virudhunagar 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.		

Bk. சரிசரி



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-6 <table><tr><th>S. No</th><th>Name of the Village</th><th>Approximate distance & Direction from lease applied area</th><th>Approximate population</th></tr><tr><td>1.</td><td>Pavali</td><td>1.4Km - NE</td><td>600</td></tr><tr><td>2.</td><td>Kunthalpatti</td><td>2.2km - NW</td><td>400</td></tr><tr><td>3.</td><td>Kumaralingapuram</td><td>1.2km - SE</td><td>800</td></tr><tr><td>4.</td><td>Amathur</td><td>4.9km - SW</td><td>1000</td></tr></table>	S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population	1.	Pavali	1.4Km - NE	600	2.	Kunthalpatti	2.2km - NW	400	3.	Kumaralingapuram	1.2km - SE	800	4.	Amathur	4.9km - SW	1000
S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population																			
1.	Pavali	1.4Km - NE	600																			
2.	Kunthalpatti	2.2km - NW	400																			
3.	Kumaralingapuram	1.2km - SE	800																			
4.	Amathur	4.9km - SW	1000																			
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.																				

P.K. Subramanian



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 40m (below ground level) and 50m (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 50m 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 8450Sqm area is proposed to use under afforestation by planting 1014nos 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. 27,69,000
	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. 30,69,000/-

R.K. Jeyaraj



B. Operational Cost:		
1. Machineries	:	Rs.80,00,000/-
2. Fencing cost	:	Rs. 2,50,000
Total	:	Rs.82,50,000/-
C.EMP Cost:		Budget Provision for the entire quarrying period.
	:	Air Quality Sampling = Rs. 40,000/-
	:	Water Quality Sampling = Rs. 40,000/-
	:	Noise Monitoring = Rs. 20,000/-
	:	Ground vibration test = Rs. 20,000/-
Expenditure		
1. Drinking water facility		Rs.1,50,000/-
2. Sanitary Arrangements		Rs. 50,000/-
3. Safety kids		Rs. 50,000/-
4. Water sprinkling		Rs. 1,50,000/-
5. Afforestation		Rs. 1,50,000/-
Total=		Rs. 6,70,000/-
Total Project Cost (A+B+C)	:	Rs. 1,19,89,000/-
CSR Cost(2% of Total Project Cost)	:	Rs. 2,39,780/-

11.0 Mine Closure Plan:

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

P.K. Senthil Raja

12.0 Any Other Details Intend to Furnish by the Applicant:

- (i) Permission will be obtained from the District Mines Office to extract 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



N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

Place: Tirunelveli

Date: 07.10.2024

புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/683/2024

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
விருதுநகர்.

நாள்: 04.10.2024.

குறிப்பாணை



பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் மற்றும் வட்டம் - பாவாவி கிராமம் - பட்டா புல எண்.244/1 மொத்தம் 4.61.50 ஹெக்டேர்ஸ் - 10 (பத்து) வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை:**
1. திரு.பி.கே.சங்கர்ராஜ், த/பெ.பெரிய கெங்கையா, 4/328, சந்திரகிரிபுரம், பாவாவி, விருதுநகர் விண்ணப்பம் நாள்:25.06.2024.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/683/2024, நாள்: 25.06.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
 3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3288/2024, நாள்: 28.08.2024.
 4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்:11.09.2024.
 5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
 6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
 7. தொடர்புடைய ஆவணங்கள்.

விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாவி கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பில் 10 (பத்து) ஆண்டுகளுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம், மாவட்டம் மற்றும் வட்டம், சதுரகிரிபுரம், பாவாவி, க.எண்.4/328 என்ற முகவரியில் வசித்து வரும் திரு.P.K.சங்கர்ராஜ், த/பெ.பெரியகெங்கையா என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளார்.

P.K. சங்கர்ராஜ்



சாத்தூர், வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் கரங்கத்துறை, உதவி புவியியலாளர் அறிக்கையில் மனுதாரர் குவாரி உரிமம் வழங்கக் கோரிய புலம் விருதுநகர் மாவட்டம் மற்றும் வட்டம், புல எண்.244/1 பரப்பு 04.61.50 ஹெக்டேர்ஸ் நிலம் பட்டா எண்.2537-ல் பெரிய கெங்கையா மகன் பெ.கெ.சங்கரராஜ் என்பவர் பெயரில் தாக்கலாகியுள்ளது எனவும்,

குவாரி உரிமம் வழங்கக் கோரிய புல எண்.244/1-க்கு நான்குமால் விபரம்:-

- வடக்கு - சீனியாபுரம் கிராம எல்லை
- தெற்கு - புல எண்.243/1 - சிந்தலையா புஞ்சை நிலம், 242/4 - சிந்தலையா (ம) 1 நபர் நிலம்,
- கிழக்கு - புல எண்.244/2 - கார்த்தி புஞ்சை நிலம்
- மேற்கு - புல எண்.233 - ராமர் புஞ்சை நிலம்

குவாரி உரிமம் வழங்கக் கோரிய புலங்களிலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்பு பகுதிகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் கோயில், மசூதி, நினைவுச் சின்னங்கள், உயர் மற்றும் தாழ்வழுத்த மின் பாதைகள் மற்றும் இடுகாடுகள் ஏதும் இல்லை. 500 மீட்டர் சுற்றளவில் புராதன சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம் ஏதும் இல்லை. மேலும், குவாரி அமையவுள்ள இடத்திலிருந்து 300-500 மீட்டர் தொலைவிற்குள் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5-ல் (பரப்பு 3.13.50 ஹெக்டேர்) பாவாலி கிராம உட்கடை திரு.முத்துராஜ் என்பவரின் கிராவல் குவாரி அமைந்துள்ளது. விண்ணப்ப புல எண் கள்ளர் கண்டிஷன் ஜாரி, பஞ்சமர் கண்டிஷன் ஜாரி நிலங்கள், தடை ஆணை புத்தகத்தில் குறிப்பிடப்பட்டுள்ள நிலங்கள், அரசு வகைக்கு சிறப்பு ஒதுக்கீடு செய்யப்பட்ட நிலங்கள் ஏதும் இல்லை. பொது மக்களிடம் ஆட்சேபணை ஏதும் உள்ளதா என்பது குறித்து அ1 நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை.

மேற்படி, நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமையவுள்ள இடத்தின் நான்கு புறங்களிலும் மேற்படி உரிமம் கோரும் ஆஜர்பட்டாதாரர் நிலங்களே அமைந்துள்ளது. மேற்படி நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமைய உள்ள இடத்திற்கு முறையான பாதை (விருதுநகரிலிருந்து — வத்திராயிருப்பு, அழகாபுரி, ஸ்ரீவில்லிபுத்தூர் செல்லும் நெடுஞ்சாலையின் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அணுகு பாதை வசதி உள்ளது என்றும், மேற்படி திரு.பி.கே.சங்கரராஜ் என்பவர் விண்ணப்ப புலத்தில் எடுக்கப்படும் உடைகல் மற்றும் கிராவல் சீனியாபுரம் கிராம புல எண்.88/5 வழியாக பாதையாக பயன்படுத்திக்கொள்ள திரு.பி.கே.முத்துராஜ் என்பவர் சம்மதப் பத்திரம் அளித்துள்ளார் எனவும்,

P.R. சங்கரராஜ்



மேற்படி, குவாரி அமைய உள்ள கிராமத்தில் அ1 நோட்டீஸ் செய்யப்பட்டதில் பொதுமக்களிடமிருந்து நாளது தேதி வரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை எனவும் மேற்படி குவாரி அமையவுள்ள புலமானது நதிக்குடி ஊராட்சி, வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கு உட்பட்டதாகும் எனவும்,

எனவே, விருதுநகர் மாவட்டம் மற்றும் வட்டம் பாவாலி கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பு நிலத்தில் பத்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் திரு.பி.கே.சங்கரராஜ் என்பவருக்கு தமிழ்நாடு சிறுகனிம விதிகளுக்கு உட்பட்டு வழங்க பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அணுகு பாதையாக உள்ளது. எனவே, புல எண்.88/5 ல் உள்ள கிராவல் குவாரிக்கு பாதிப்பு ஏற்படுத்தாதவாறு குவாரி பணிகள் செய்தல் வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாலி கிராமம், பட்டா புல எண்:244/1 மொத்த பரப்பு 4.61.50 ஹெக்டேரில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி பத்து (10) வருடகாலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

P.K. சிவசுந்தரன்

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


4/10/24

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெறுநர்
திரு.பி.கே.சங்கர்ராஜ்,
த/பெ.பெரிய கெங்கையா,
4/328, சந்திரகிரிபுரம்,
பாவாஸி,
விருதுநகர் மாவட்டம்,


4/10/2024

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

P.R. 229 of 900

வட்டம். கிருஷ்ணன்

புல எண். 244



கிராமம்

பெயர். பரவாணி

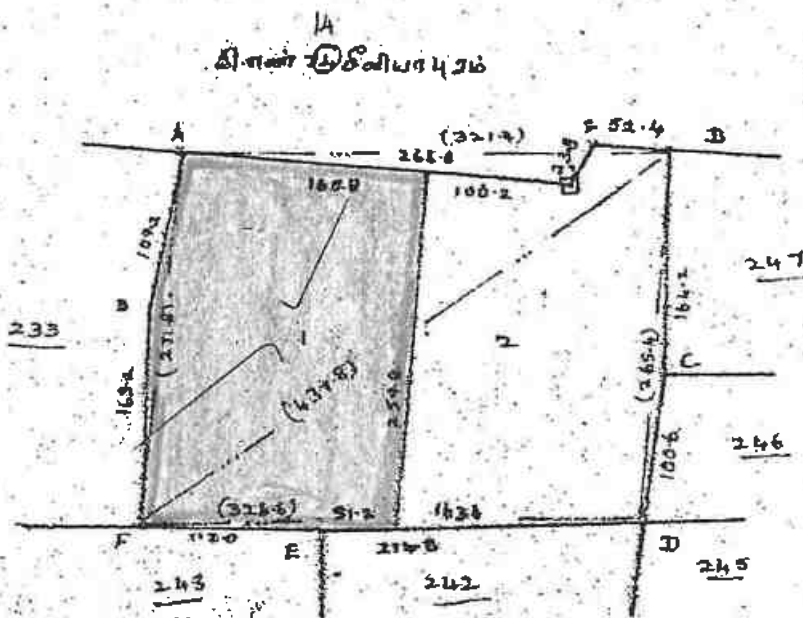
கிராம

பெயர். கிராமம்

8 ஏ 75

கிருஷ்ணன்

புல எண்.



(Signature)
கிராம நிர்வாக அலுவலர்
பரவாணி கிராமம்
விருதுநகர் வட்டம்.

3	4.0	24.0
E	3.2	24.0
C	5.8	24.0
1	6.0	24.0

வரைந்தவர். சி. கிருஷ்ணன்

23.7.24

அளவு. மீ.மீ. 5000 மீ.மீ.

சரிசெய்தவர்

LEASE APPLIED AREA

264

P.K. சண்முகம்

145



கரம நர்வரக அலுவலர்
18/10/2024
பர்வரலி கிராமம்
விருதுநர் வட்டம்.

LEASE APPLIED AREA



தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : விருதுநகர்

வருவாய் இராமம் : பாவாலி

வட்டம் : விருதுநகர்

பட்டா எண் : 2537

உரிமையாளர்கள் பெயர்

1. பெரிய கெங்கையா

மகன்

பெ.கெ. சங்கரராஜ்

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	
244	1	4 - 61.50	19.57	--	--	--	--	2023/0103/26/197377--- ----- 22-06-2023
		4 - 61.50	19.57					

குறிப்பு :



மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து

1. பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 26/05/006/02537/30627 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

2. இத் தகவல்கள் 19-06-2024 அன்று 02:04:01 PM நேரத்தில் அச்சடிக்கப்பட்டது.

3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

P.K. சங்கரராஜ்

கிராமக் கணக்கு
வட்டம்

வட்டம்

மதல் போது

2-ஆவது துறை

செருத்தர் மாவட்டம்

24 OCT 2024

செருத்தர்

பிரியல்

ல்கைத் துறை

P.k. 7-21-2026



23. பாவாலை.

					8	9	10	11			
243	3	243-1	ர	பு	...	4-2	2	4 17	0 11.5	0 49	421 க. பெருமாள் நாயக்கர்.
	4A	-4பா	ர	பு	...	4-2	2	4 17	0 17.0	0 70	421 க. பெருமாள் நாயக்கர்.
	4B	-4பா	ர	பு	...	4-2	2	4 17	0 18.0	0 77	130 க. குஞ்சாமி நாயக்கர்.
	5A	-5பா	ர	பு	...	4-2	2	4 17	0 15.0	0 62	421 க. பெருமாள் நாயக்கர்.
	5B	-5பா	ர	பு	...	4-2	2	4 17	0 18.0	0 77	130 க. குஞ்சாமி நாயக்கர்.
	6A	-6பா	ர	பு	...	4-2	2	4 17	0 22.5	0 93	240 பெ. சின்ன கெங்கா நாயக்கர்.
	6B	-6பா	ர	பு	...	4-2	2	4 17	0 43.5	1 81	729 பெ. பெரிய கெங்கா நாயக்கர்(1), குஞ்சாமி நாயக்கர்(2).
								2 03.0	8 49		
244	1	244-1	ர	பு	...	4-2	2	4 17	4 61.5	19 27	252 க. சுந்தரராஜ மூர்த்தி நாயக்கர்.
	2	-2	ர	பு	...	4-2	2	4 17	4 15.0	17 34	310 க. கோமகந்தர மூர்த்தி நாயக்கர்.
								8 76.5	36 61		
245	1	245-1	ர	பு	...	4-2	2	4 17	0 38.0	1 59	162 க. கோபால் சாமி நாயக்கர்.
	2A	-2A	ர	பு	...	4-2	2	4 17	0 58.0	2 42	262 கி. சுந்தரம் மாள்.
	2B	-2B	ர	பு	...	4-2	2	4 17	0 57.0	2 38	310 க. கோமகந்தர மூர்த்தி நாயக்கர்.
	3	-3	ர	பு	...	4-2	2	4 17	1 19.5	4 99	766 ச. முத்து வேல்(1), பொம்மையன்(2).
	4	-4	ர	பு	...	4-2	2	4 17	1 14.0	4 77	578 கோ. ராமசாமி நாயக்கர்.
								3 86.5	16 15		

கிராம நிர்வாக அலுவலர்
பாவாலை கிராமம்
விருதுநகர் வட்டம்.

24 OCT 2024

870899

சென்னைப் பல்கலைக் கழகம் University of Madras

Renewed up to 2020

அறிவியல் புலம்
FACULTY OF SCIENCE

Regional Controller of Examinations
INDIAN BUREAU OF EXAMINATIONS

ஏப்ரல்

மாதம் நடந்த

பயிற்சியைக் கனிமவியல்

தேர்வு

நா. ரவிந்திரன்

என்பவர்

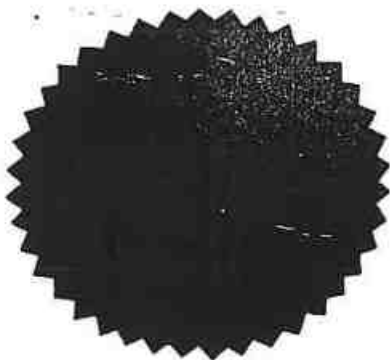
முதல்

வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேரவர்கள்

சான்றளித்தபடி அறிவியல் நிறைஞர் என்றும் பட்டத்தை அவருக்குப்

பல்கலைக் கழக இலச்சினைபுடன் வழங்குகிறது.

The Senate of the UNIVERSITY OF MADRAS hereby makes known that N. Ravinthiran has been admitted to the Degree of Master of Science, he/she having been certified by duly appointed Examiners to be qualified to receive the same in Applied Geology and was placed in the First Class, at the Examination held in April 1989.



Given under the Seal of the University.

செப்பாக்கம், Chepauk,

சென்னை, Madras.

தாள் Dated 19.12.1991

சுவினியி

பதிவாளர்

Registrar.

சுவினியி
Vice-Chancellor
13/12/91



T. N. G. S. T. No. 6040126
C. S. T. No. 488148 dt. 30-5-73

Tel : "JANATHACEM"
P. B. No. 45
Phone : 30710
(4 lines)
Quarry : 84761

Janathacem Industries Limited

Factory & Admn :
488 / 1, Sankarankoil Road,
RAJAPALAYAM - 626 117.

Mfrs : Janathacem Wall Coat

30.09.2000

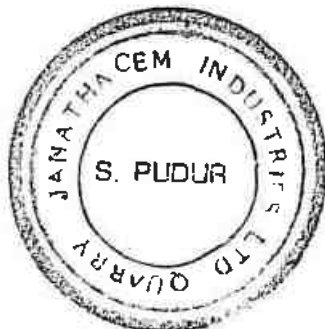
TO WHOMSOEVER IT MAY CONCERN

This is to certify that Sri N. RAVINTHIRAN, M.Sc., (Applied Geologist) S/O. R. NARAYANASAMY residing at 3-105, Kannithevanpatti village, Keelara jagularaman (Post) Rajapalayam (Taluk) Virudhunagar Dist. Pin code 626136, was employed as a Geologist from 01.09.1993 to 30.09.2000 at Our THENMALAI LIMESTONE MINES OF M/S. JANATHACEM INDUSTRIES LIMITED (formerly M/S. LIMENAPH CHEMICALS) RAJAPALAYAM.

He has been vested with the work involving prospecting, Collecting samples, Knowing the chemicals analysis etc. He was also Supervising various Mining operation including drilling, blasting and excavation by powershovel. He has been successfully carrying out his duties and has proven himself a quite efficient, competent, sincere and hard working official in the company.

He has got a total of seven years post graduate experience in the Mechanised mining field.

He deserves all the encouragement and I wish him all the success in his carrier.



For JANATHACEM INDUSTRIES LIMITED,
(FORMERLY LIMENAPH CHEMICALS)

(R. SARGUNAM)

DEPUTY GENERAL MANAGER (MINES)
THENMALAI LIMESTONE MINE



P.K. 2021 2022

T. N. G. S. T. No. 6040126
C. S. T. No. 488148 dt. 30-5-73



JANATHACEM
P. B. No. 45
Phone : 30710
(4 lines)
Quarry : 84761

Janathacem Industries Limited

Factory & Admn :
488 / 1, Sankarankoil Road,
RAJAPALAYAM - 626 117.

Mfrs : Janathacem Wall Coat

30.09.2000

TO WHOMSOEVER IT MAY CONCERN.

This is to certify that Sri.N.RAVINTHIRAN, M.Sc., (Applied Geology) S/O.R.Narayanasamy, joined in our Organisation as Geologist on 01.09.1993. Due to his Personnel reasons he submitted his resignation and the same was accepted with regret. He was releaved from his duties with effect from 30.09.2000.

During his tenure his conduct and character was good, and he carried out his duties to the best satisfaction of his superiors and Management.

We wish him all success in his life.

For JANATHACEM INDUSTRIES LTD,

(T.VENKATARAJAGOPALAN)
GENERAL MANAGER



P.K. 25/10/2000



பெ கே சங்கர் ராஜ்
P K SANKAR RAJ
பிறந்த நாள்/DOB: 08/06/1970
ஆண் / MALE
Mobile No. 9842148804

7121 3572 1296
VID:8138235310659133

எனது ஆதார், எனது அடையாளம்

முகவரி:
S/O. Puriya Kengerya, 4/329,
சந்திரகுருபுரம், பாவலி, பாவலி,
விருதுநகர்,
தமிழ்நாடு - 626103
Address:
S/O. Puriya Kengerya 4/329
CHANDRAGURUPURAM PAVALI Paval
Viduthunagar Tamil Nadu - 626103

7121 3572 1296



1047



help@tamilnadu.gov.in



www.tamilnadu.gov.in

P.K. Sankar Raj

GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY



Certificate of practical experience granted by the Manager to a candidate for a **MANAGER'S/SURVEYOR'S/FOREMAN'S/MATE'S** Certificate of competency examination under the Metalliferous Mines Regulations 1961.

R.SARGUNAM being the Manager of **THENMALAI LIMESTONE MINES, S.PUDUR** belonging to **M/S.LIMENAPH CHEMICALS, RAJAPALAYAM** do hereby certify that **Sri.N.RAVINTHIRAN S/O.R.NARAYANASAMY** (whose signature appended) worked in the above Mine from 01.09.1993 to 09.08.96 and is still working. During his term of work aforesaid he has obtained practical experience as detailed overleaf. The duties connected with his work have involved his continuous attendance at the Mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper Person to be examined for a certificate of competency.

Signature of the candidate
Note: Delete if not applicable

State name of Mineral : **LIMESTONE**

SIGNATURE OF THE MANAGER WITH DATE
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627770.

Sl No.	Particulars of practical Experience	Place of Experience (B)	Period of practical Experience (C) From -- To	Total Experience Y M D
1.	Drilling(Rock drills)	Machanised open cast	01.09.93 15.04.94	-- 7 14
2.	Blasting (small dia)	"	16.04.94 20.11.94	-- 7 14
3.	Wagon drilling	"	21.11.94 10.08.95	-- 8 19
4.	Blasting(long&large dia holes)	"	11.08.95 08.03.96	- 6 26
5.	Supervision (All mining activities)	"	09.03.96 09.08.96	-- 5 --

Two years eleven months and Thirteen days only. (Still working) Grand total 02. 11. 13

d. Average monthly output during the above period : 5000 Tons

e. Average daily employment of Men&Machinery in H.P. during the period is given below:

In below ground working	In opencast working	In all
-- Nil --	Men 126+17 Machinery 1559 H.P.	143

Signature of the candidate

Signature of the MANAGER WITH DATE
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627770.

R.K. Rajasingh

GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY



Certificate of practical experience granted by the Manager to a candidate for a **MANAGER'S/SURVEYOR'S/FOREMAN'S/MATE'S** Certificate of competency examination under the Metalliferous Mines Regulations 1961.

R.SARGUNAM being the Manager of **THENMALAI LIMESTONE MINES, S.PUDUR** belonging to **M/S.LIMENAPH CHEMICALS, RAJAPALAYAM** do hereby certify that **Sri.N.RAVINTHIRAN S/O.R.NARAYANASAMY** (whose signature appended) worked in the above Mine from 01.09.1993 to 09.08.96 and is still working. During his term of Work aforesaid he has obtained practical experience as detailed overleaf. The Duties connected with his work have involved his continuous attendance at the Mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper Person to be examined for a certificate of competency.

SIGNATURE of **MANAGER (MINES)**
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627770

Signature of the candidate
Note: Delete if not applicable
State name of Mineral : **LIMESTONE**

Sl No.	Particulars of practical Experience	Place of Experience (B)	Period of practical Experience (C) From -- To	Total Experience Y M D
1.	Mining mate	Semi-Mechanised open cast working	10.08.96 15.06.99	2 10 5
2.	Mining Foreman	,,	16.06.99 30.09.2000	1 3 14

Four years One month Nineteen days Grand total *04. 01. 19*

d. Average monthly output during the above period : 4000 Tons
e. Average daily employment of Men & Machinery in H.P. during the period is given below:

In below ground working	In opencast	working	In all
--- Nil ---	Men	102+13	115
	Machinery	1559 H.P.	

Signature of the candidate

Signature of **MANAGER (MINES)** date
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627770

P.K. 22/2/2025



renewed up to 21.12.2018



Suprabhraman
REGIONAL CONTROLLER OF MINES,
INDIAN BUREAU OF MINES
- CHENNAI

CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON TO PREPARE MINING PLANS

(Under Rule 22C of Mineral Concession Rules, 1960)

Shri N.RAVINTHIRAN resident

of 3/105, Kannithevanpatti, Keelara jakularaman (PO), Virudhunagar dt.

of R.NARAYANASAMY, having given satisfactory
evidence of his qualifications and experience is hereby granted recognition
under Rule 22C of the Mineral Concession Rules, 1960 as a Qualified
Person to prepare Mining Plans.

His registration number is RQP/MAS/130/98/A

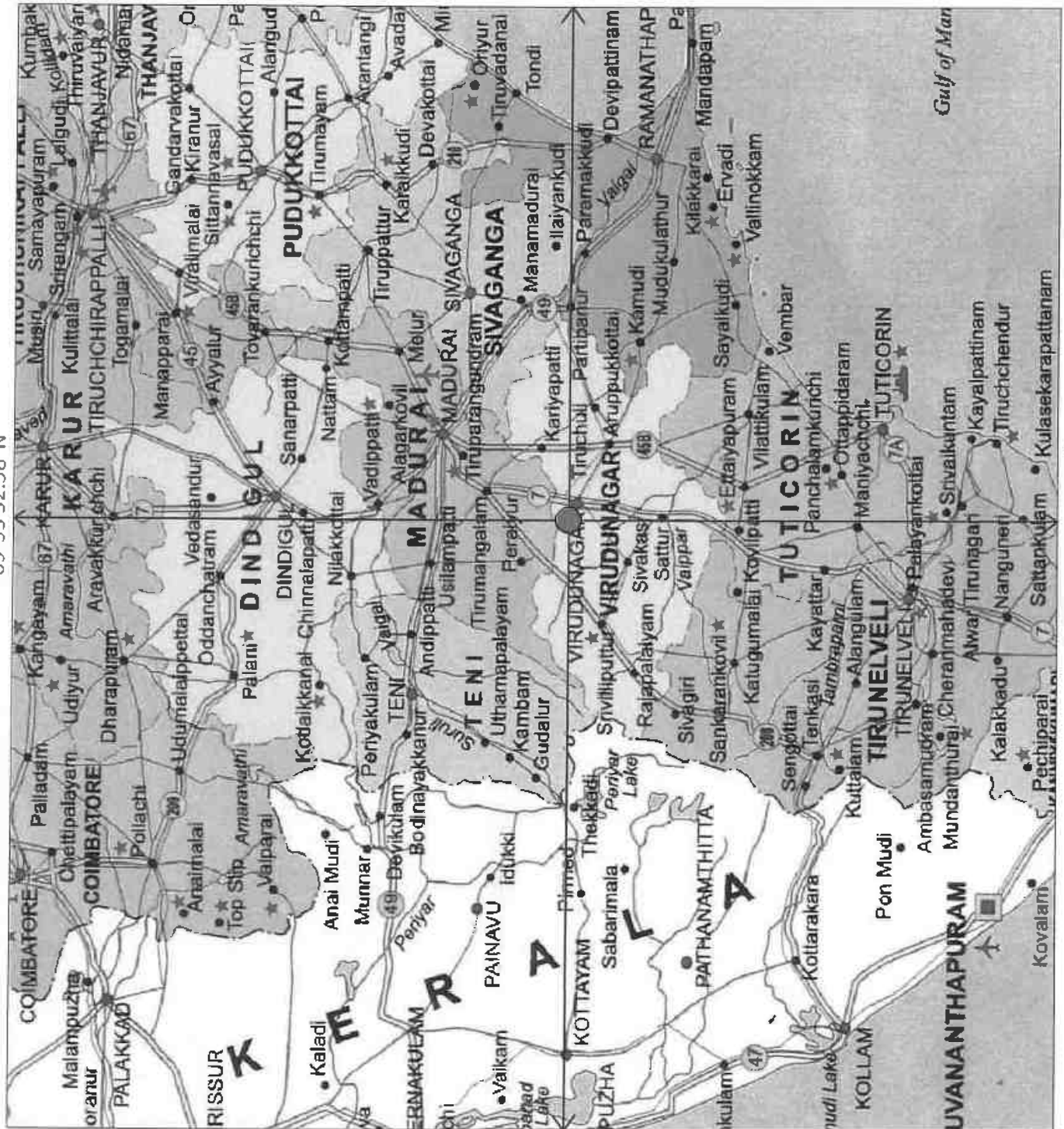
This recognition is valid for a period of two years
ending 21.12.2000

M. R. A. Murali
Regional Controller of Mines
Indian Bureau of Mines
Chennai

Place : CHENNAI
Date : 21.12.98

P. K. S. S. S. S.

09°35'52.58"N



77°54'08.06"E

09°35'43.22"N

P.K. 2024/2025



PLATE NO-I

DATE OF SURVEY : 05.10.2024

APPLICANT:

THIRU P.K. SANKAR RAJ,
S/o PERIYA KENGAIYA,
NO.4/328, CHANDRAGRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

Q. L. APPLIED AREA : ●

TOPO SHEET NO : 58 G/ 14

LATITUDE : 09°35'43.22"N to 09°35'52.58"N

LONGITUDE : 77°54'08.06"E to 77°54'15.19"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

[Signature]

N.RAVINTHIRAN, M.Sc.(App.Geo)
QUALIFIED PERSON



PLATE NO-IB

DATE OF SURVEY : 05.10.2024

APPLICANT:

THIRU.P.K.SANKAR RAJ,
S/o.PERIYA KENGAIYA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

TOPO SHEET NO : 58 G/ 14

LATITUDE : 09°35'43.22"N to 09°35'52.58"N

LONGITUDE : 77°54'08.06"E to 77°54'15.19"E

Q.L.APPLIED AREA	
7.5m SAFETY DISTANCE	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
CART TRACK	
STATE HIGHWAY	

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

N.RAVINTHIRAN,M.Sc,(App.Geo)
QUALIFIED PERSON

P.K. Sankar Raj



LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	01
TREES	16
BARREN LAND	74
HABITATIONS	04
WATER BODIES	05

PLATE NO-IA

DATE OF SURVEY : 05.10.2024

APPLICANT:

THIRU.P.K.SANKAR RAJ,
S/o. PERIYA KENGAIA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA

S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

TOPO SHEET NO : 58 G/ 14

LATITUDE : 09°35'43.22"N to 09°35'52.58"N

LONGITUDE : 77°54'08.06"E to 77°54'15.19"E

Q.L.APPLIED AREA

7.5m SAFETY DISTANCE

300M RADIUS

500M RADIUS

1KM RADIUS

APPROACH ROAD

CART TRACK

STATE HIGHWAY

BARREN LAND

TREES

SEASONAL AGRICULTURE

HABITATIONS

ODAI

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



N.RAVINTHIRAN,M.Sc,(App.Geo)

QUALIFIED PERSON

278

Dr. V. V. V. V.

158

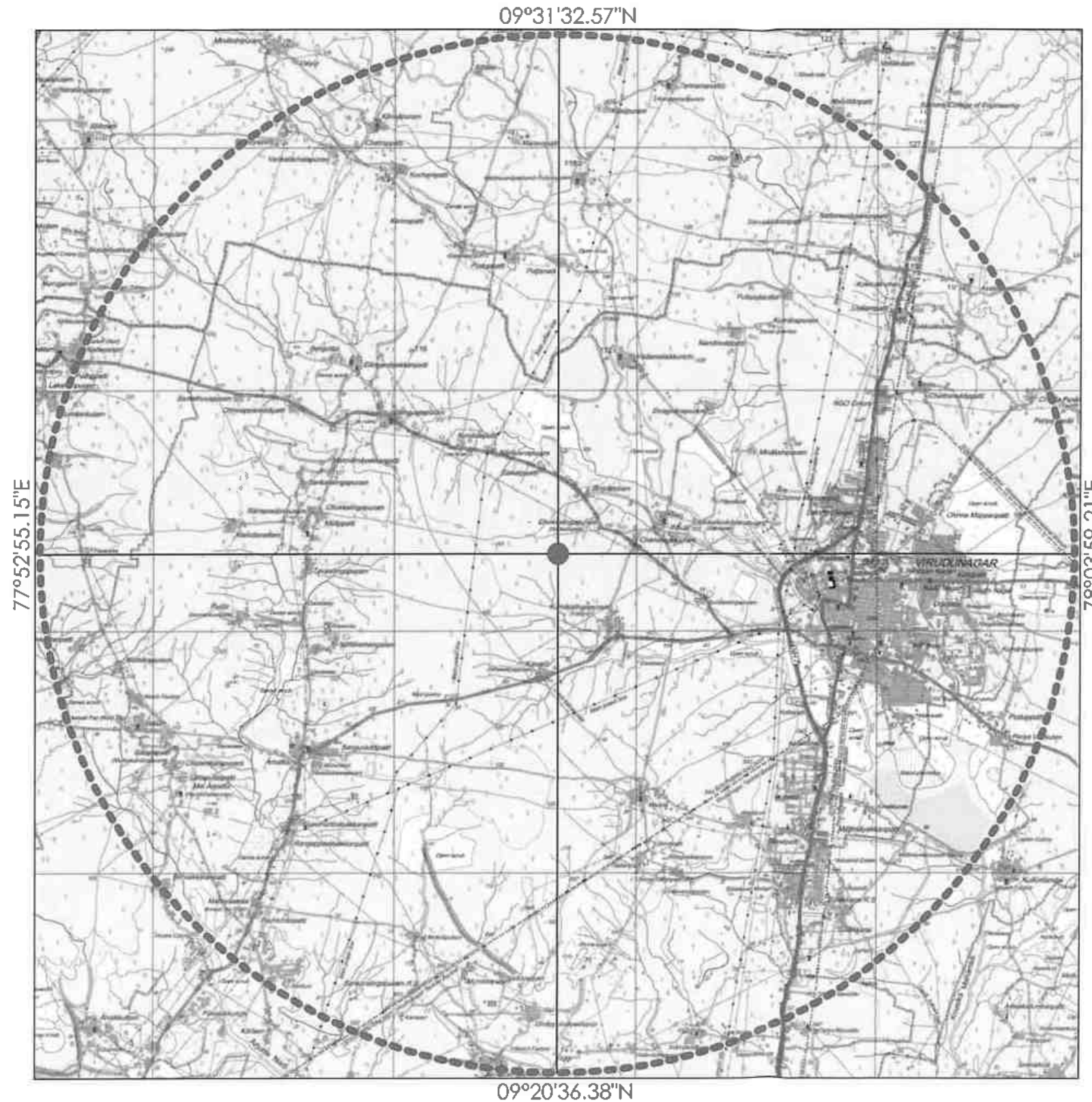


PLATE NO-IC

DATE OF SURVEY : 05.10.2023

APPLICANT:

THIRU.P.K.SANKAR RAJ

S/o.PERIYA KENGAIYA,

NO.4/328, CHANDRAGRIPUR

PAVALI,

VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,

EXTENT : 4.61.50 Ha,

VILLAGE: PAVALI,

TALUK : VIRUDHUNAGAR,

DISTRICT : VIRUDHUNAGAR.

INDEX

TOPO SHEET NO : 58 G/ 14

LATITUDE : 09°35'43.22"N to 09°35'52.58"N

LONGITUDE : 77°54'08.06"E to 77°54'15.19"E

Q.L.APPLIED AREA

10KM RADIUS

CONVENTIONAL SYMBOLS	
Boundaries of the State and District	
Boundaries of the Taluk and Panchayat	
Boundaries of the Village	
Boundaries of the Ward	
Boundaries of the House	
Boundaries of the Plot	
Boundaries of the Field	
Boundaries of the Road	
Boundaries of the Canal	
Boundaries of the River	
Boundaries of the Lake	
Boundaries of the Pond	
Boundaries of the Well	
Boundaries of the Spring	
Boundaries of the Waterfall	
Boundaries of the Dam	
Boundaries of the Bridge	
Boundaries of the Tunnel	
Boundaries of the Railway	
Boundaries of the Road	
Boundaries of the Canal	
Boundaries of the River	
Boundaries of the Lake	
Boundaries of the Pond	
Boundaries of the Well	
Boundaries of the Spring	
Boundaries of the Waterfall	
Boundaries of the Dam	
Boundaries of the Bridge	
Boundaries of the Tunnel	
Boundaries of the Railway	

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

N.RAVINTHIRAN, M.Sc, (App. Geo)
QUALIFIED PERSON



PLATE NO-ID

DATE OF SURVEY : 05.10.2024

APPLICANT:

THIRU P.K.SANKAR RAJ,

S/o. PERIYA KENGAYA,

NO.4/328, CHANDRAGIRIPURAM,

PAVALI,

VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,

EXTENT : 4.61.50 Ha,

VILLAGE : PAVALI,

TALUK : VIRUDHUNAGAR,

DISTRICT : VIRUDHUNAGAR.

INDEX

Q.L.APPLIED AREA



APPROACH ROAD



CART TRACK



STATE HIGHWAY



HABITATIONS



KEY PLAN

Not To Scale

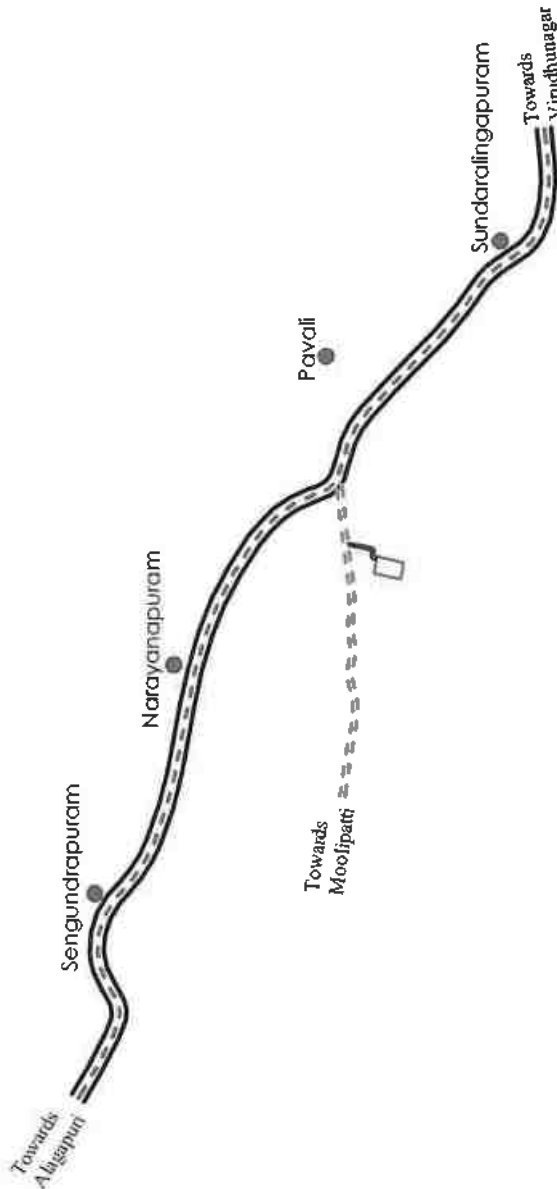
PREPARED BY:

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

[Signature]

N.RAVINTHIRAN M.Sc.(App.Geo)

QUALIFIED PERSON



P.K. Sankar Raj

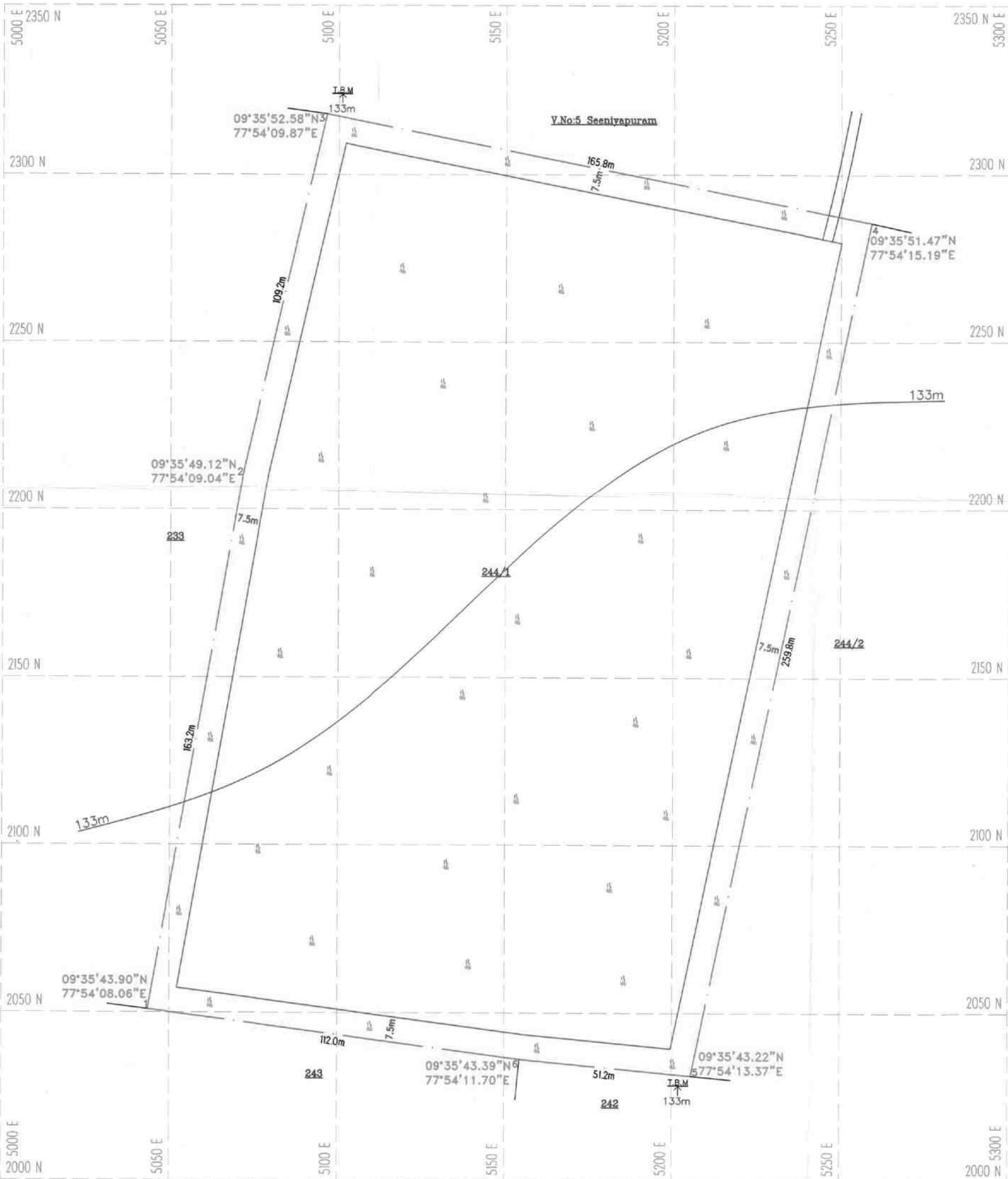
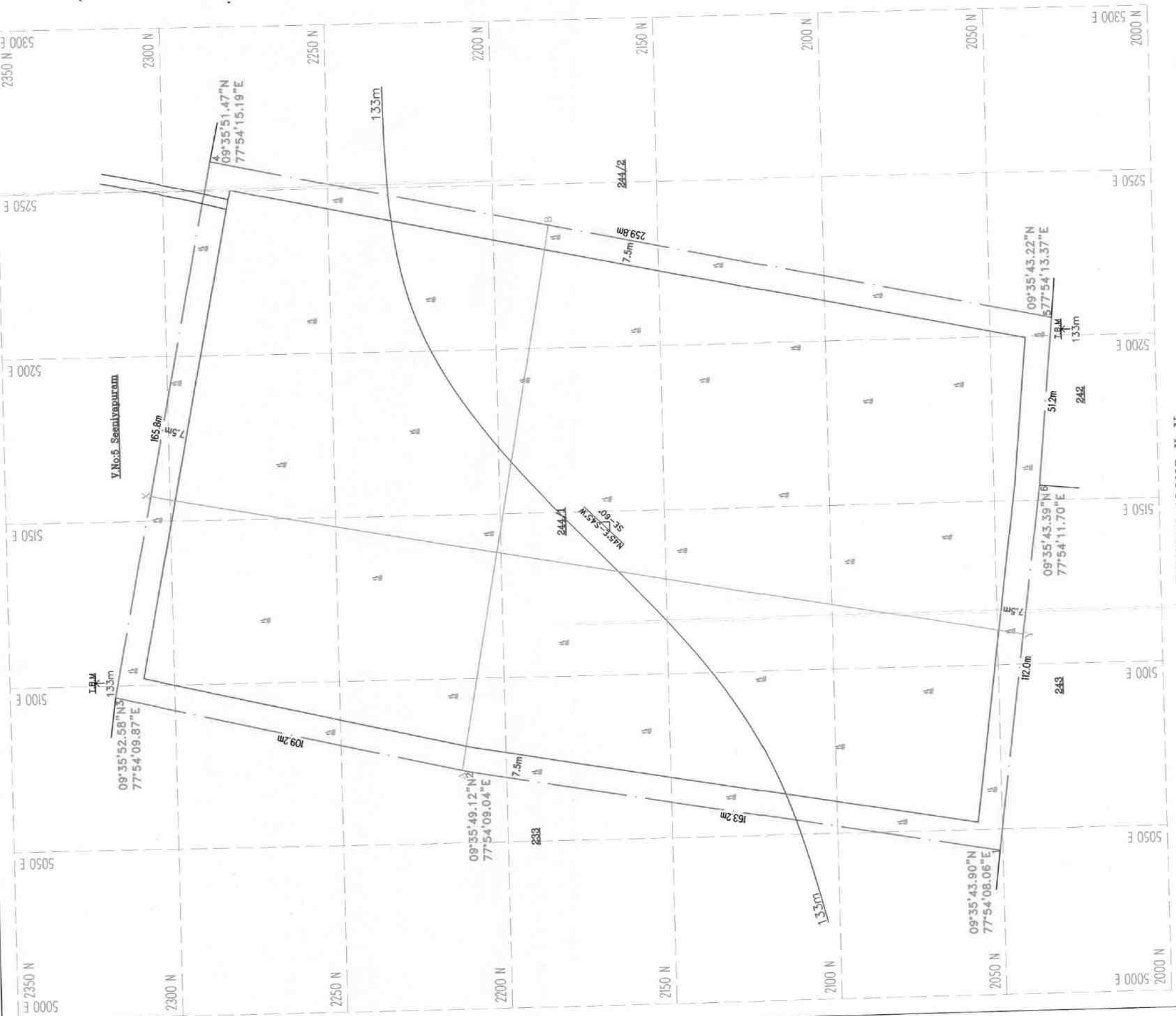
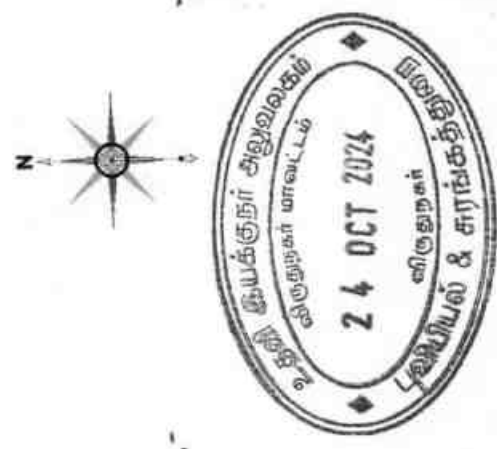


PLATE NO-II	
DATE OF SURVEY : 05.10.2024	
APPLICANT:	
THIRU/P.K.SANKAR RAJ, S/o.PERIYA KENGAIYA, NO.4/328, CHANDRAGIRIPURAM, PAVALI, VIRUDHUNAGAR DISTRICT.	
QUARRY APPLIED LEASE AREA:	
S.F.NO : 244/1, EXTENT : 4.61.50 Ha, VILLAGE : PAVALI, TALUK : VIRUDHUNAGAR, DISTRICT : VIRUDHUNAGAR.	
INDEX	
Q.L. APPLIED BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
CONTOUR	
SCRUB	
QUARRY LEASE & SURFACE PLAN	
SCALE 1 : 1000	
PREPARED BY:	
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT	
 N.RAVINTHIRAN, M.Sc., (App. Geo) QUALIFIED PERSON	

Rk. 2-துவி



SECTION ALONG X-Y

Y	RL	QLB	133.0m	128.0m	123.0m	118.0m	113.0m	108.0m	103.0m	98.0m	93.0m	88.0m	83.0m
133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m
128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m
123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m
118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m
113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m
108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m
103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m
98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m
93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m
88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m
83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m

SECTION ALONG A-B

A	RL	QLB	133.0m	128.0m	123.0m	118.0m	113.0m	108.0m	103.0m	98.0m	93.0m	88.0m	83.0m
133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m	133.0m
128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m	128.0m
123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m	123.0m
118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m	118.0m
113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m	113.0m
108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m	108.0m
103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m	103.0m
98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m	98.0m
93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m	93.0m
88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m	88.0m
83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m	83.0m

PLATE NO-III
DATE OF SURVEY : 05.10.2024

APPLICANT:
THIRU P.K.SANKAR RAJ,
S/O PERIYA KENAIYA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

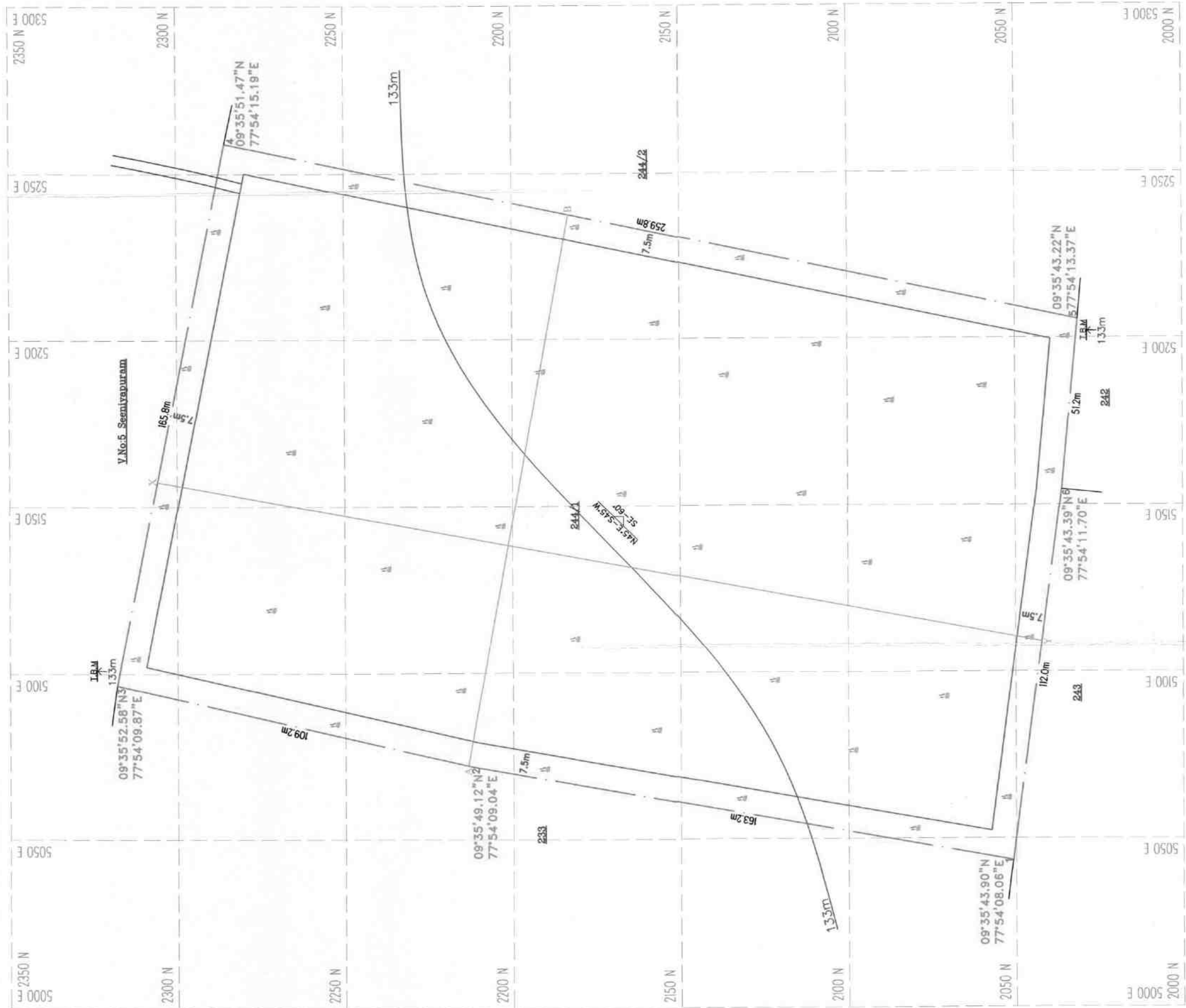
INDEX

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

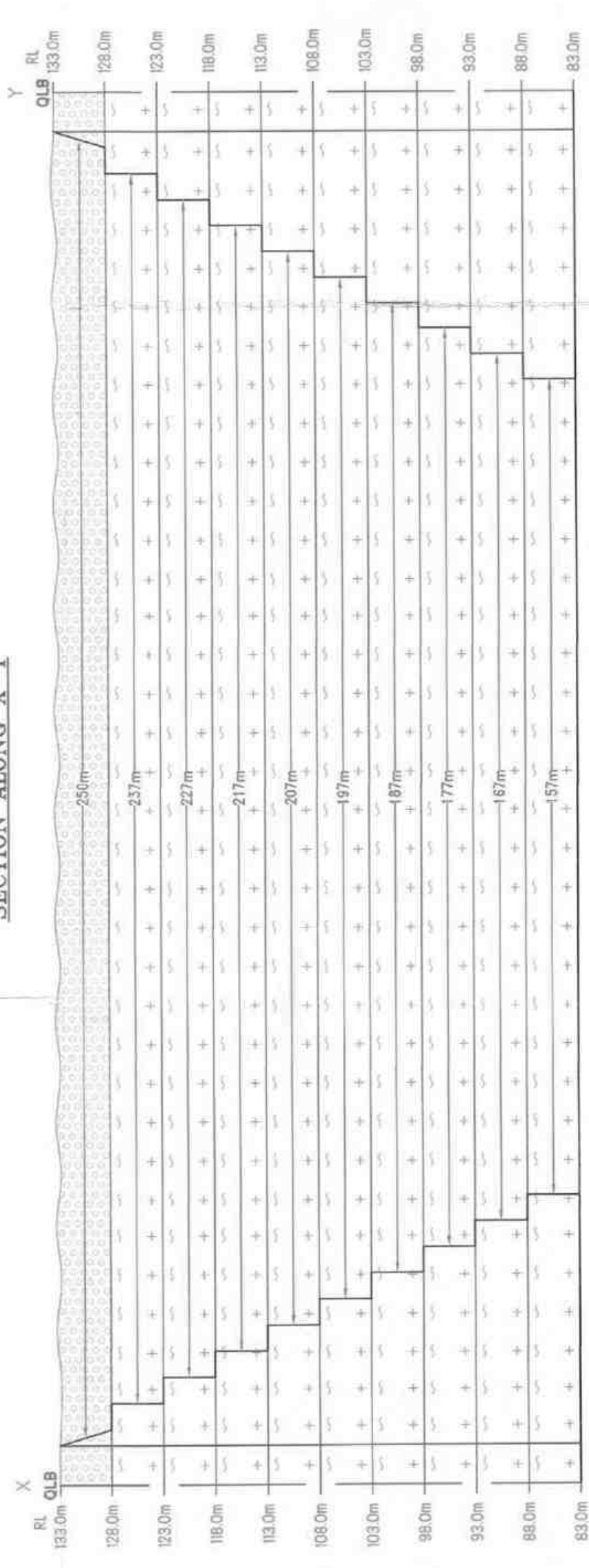
TOPOGRAPHY, GEOLOGICAL
PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

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

N.RAVINTHIRAN M.Sc.(App.Geo)
QUALIFIED PERSON



SECTION ALONG X-Y



SECTION ALONG A-B

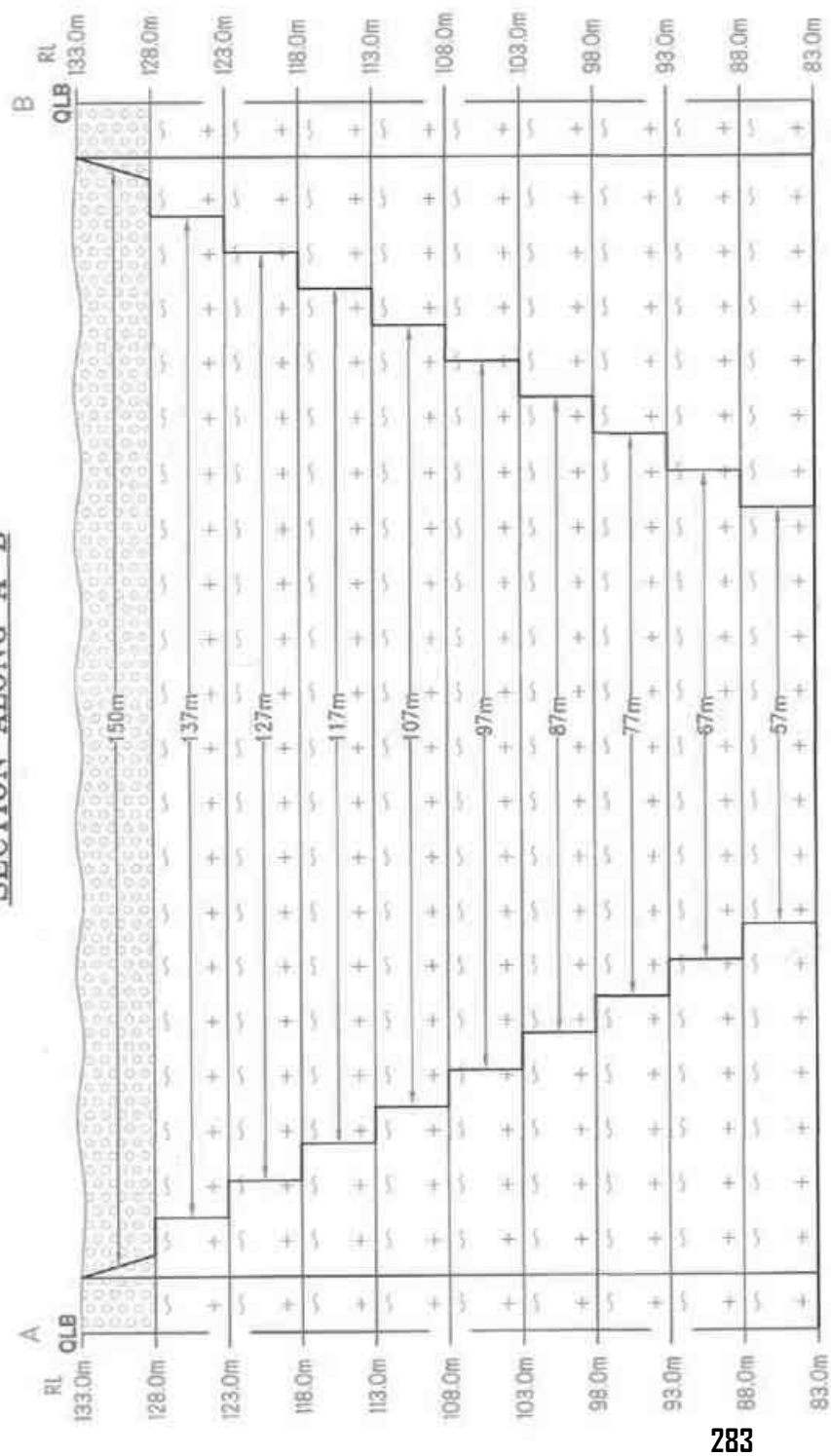


PLATE NO-IV

DATE OF SURVEY : 05.10.2024

APPLICANT:

THIRU/P.K.SANKAR RAJ,
S/O-PERIYA KENGAYA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALLI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,
EXTENT : 4.61.50 Hg,
VILLAGE : PAVALLI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

Q.L. APPLIED BOUNDARY

7.5m SAFETY DISTANCE

TEMPORARY BENCH MARK

APPROACH ROAD

CONTOUR

SCRUB

GRAVEL

ROUGH STONE

STRIKE & DIP

MINEABLE

PLAN & SECTIONS

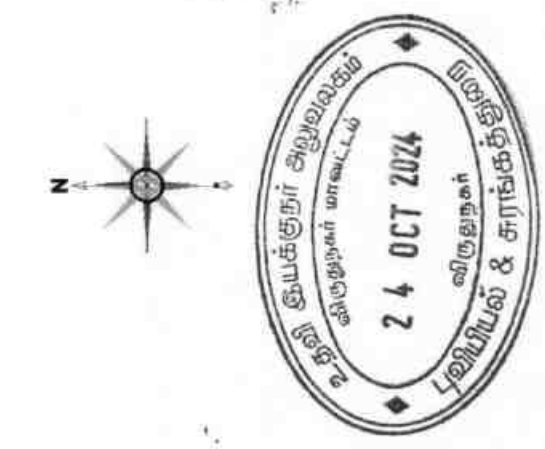
SCALE 1 : 1000

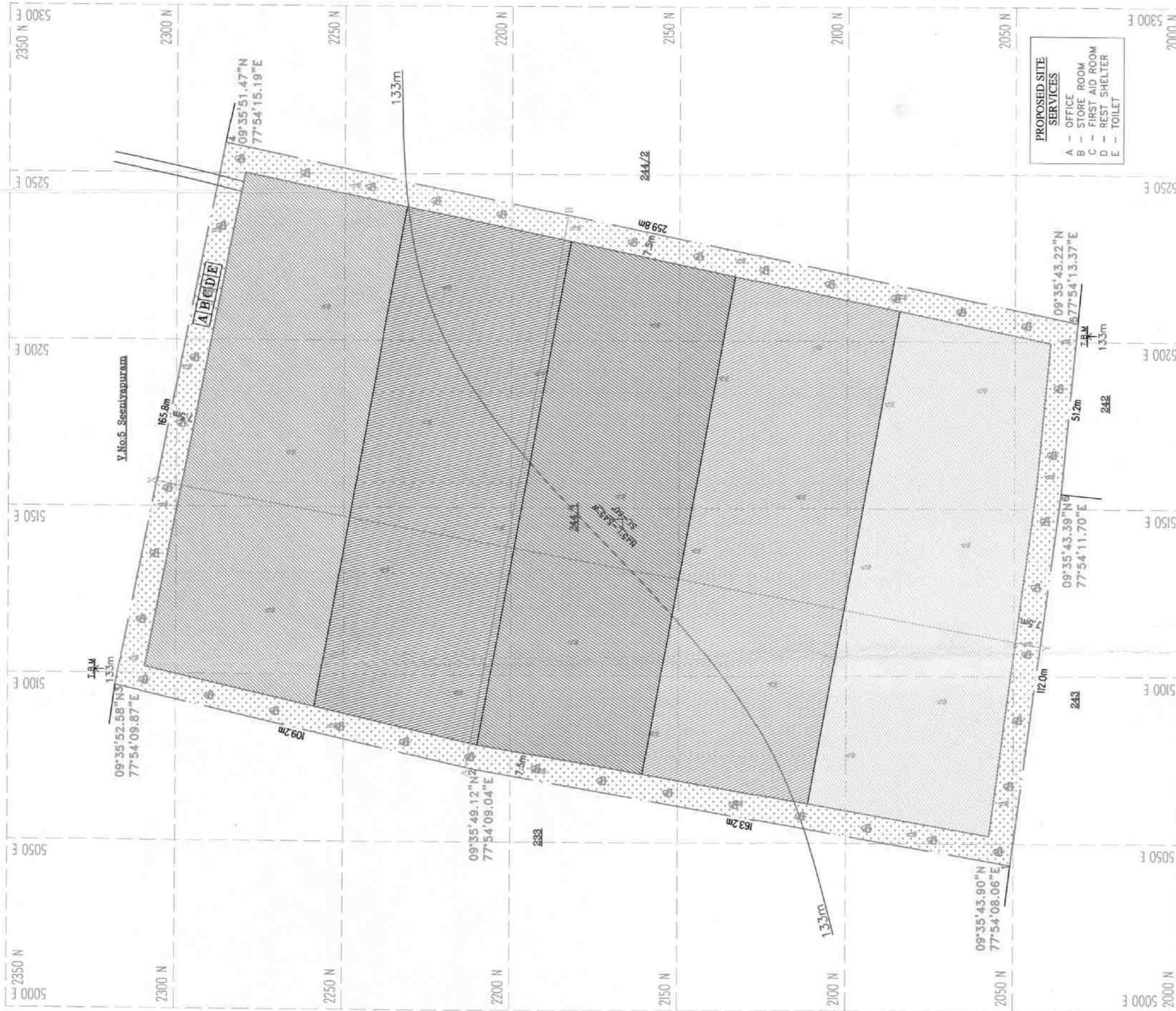
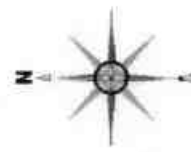
SECTIONS HOR 1:1000, VER 1:500

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


N. RAVINTHRAN M. Sc. (App. Geo.)
QUALIFIED PERSON



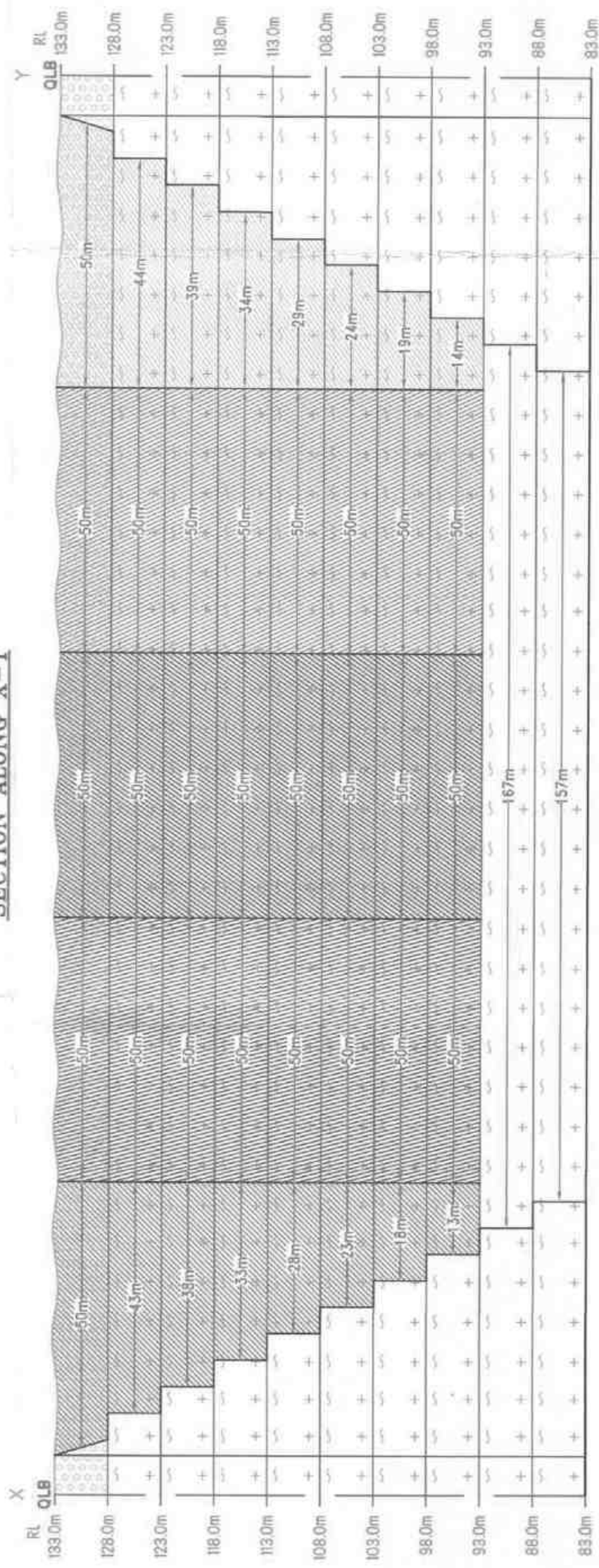


- PROPOSED SITE SERVICES**
- A - OFFICE ROOM
 - B - STORE ROOM
 - C - FIRST AID ROOM
 - D - REST SHELTER
 - E - TOILET

Proposed area to be Planted : 1.5 Ha

- Proposed area to be Quarried**
- 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

SECTION ALONG X-Y



SECTION ALONG A-B

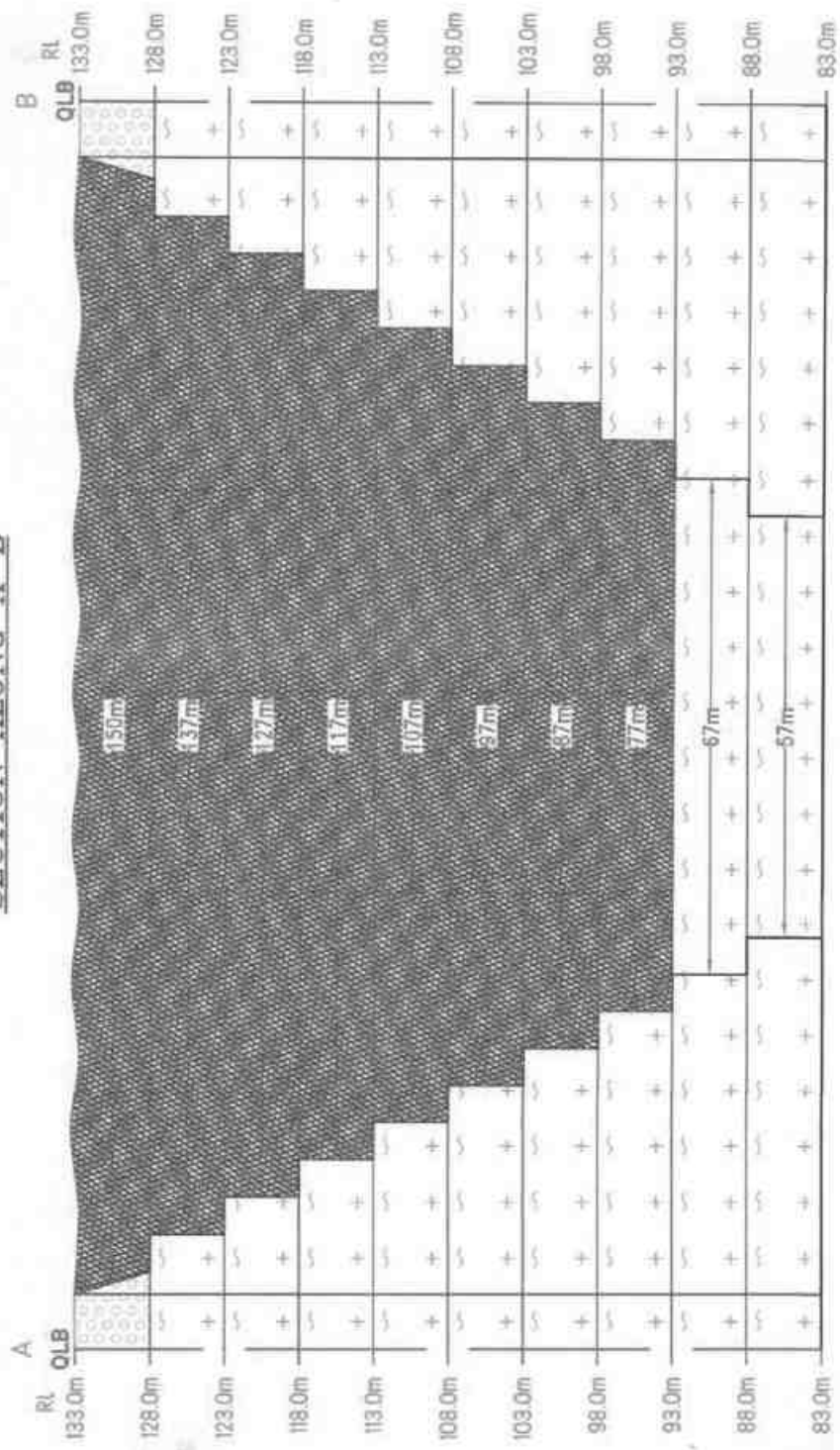


PLATE NO-V
DATE OF SURVEY : 05.10.2024

APPLICANT:
THIRU P.K.SANKAR RAJ,
S/O PERIYA KENGANA,
NO.4/528, CHANDRACIRIPURAM,
PAVALLI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALLI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

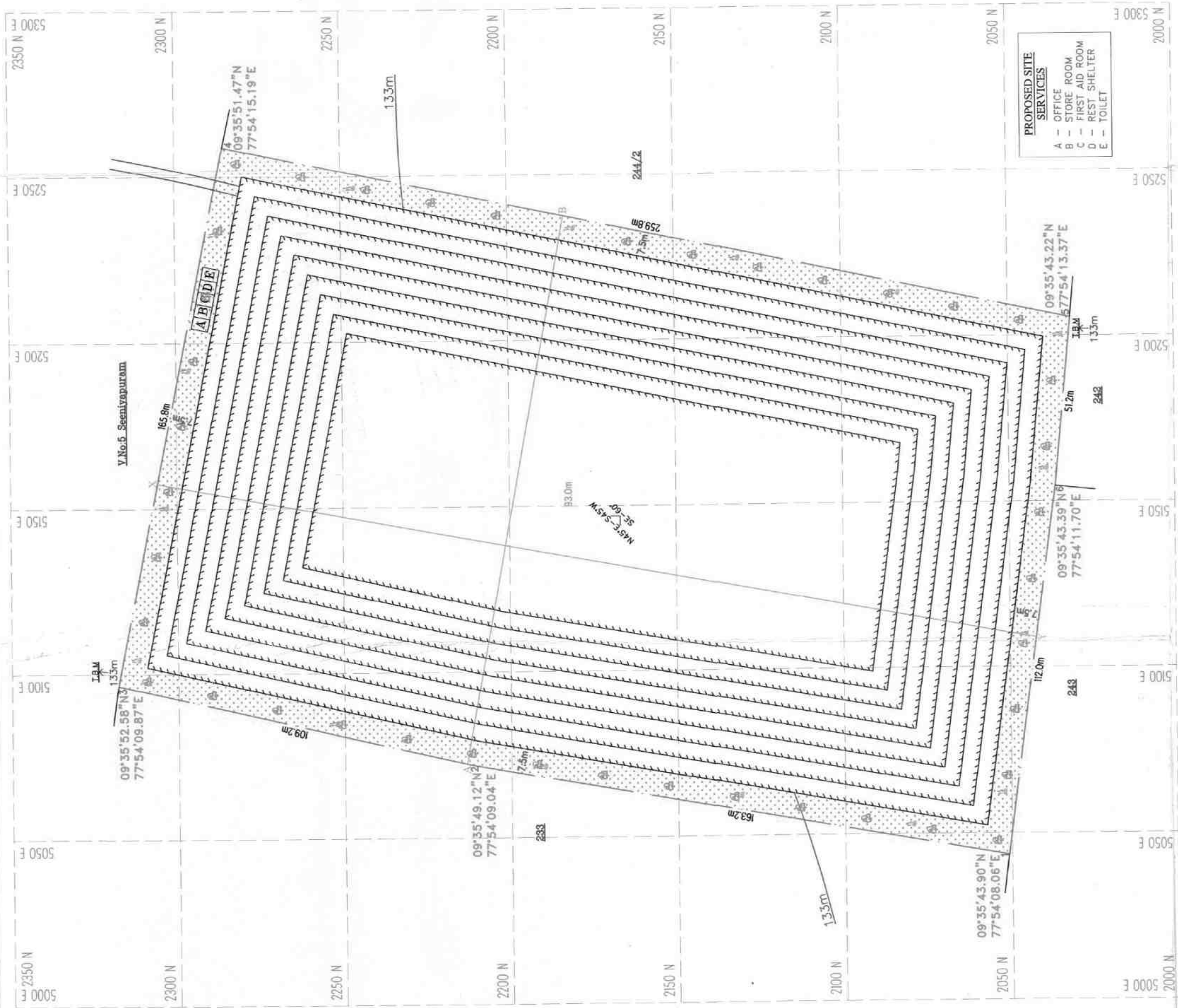
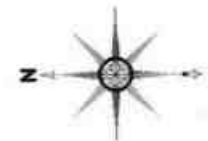
Q.L. APPLIED BOUNDARY	---
7.5m SAFETY DISTANCE	---
TEMPORARY BENCH MARK	---
APPROACH ROAD	---
CONTOUR	---
SCRUB	---
GRAVEL	---
ROUGH STONE	---
STRIKE & DIP	---

YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000

SECTIONS HOR 1:1000, VER 1:500

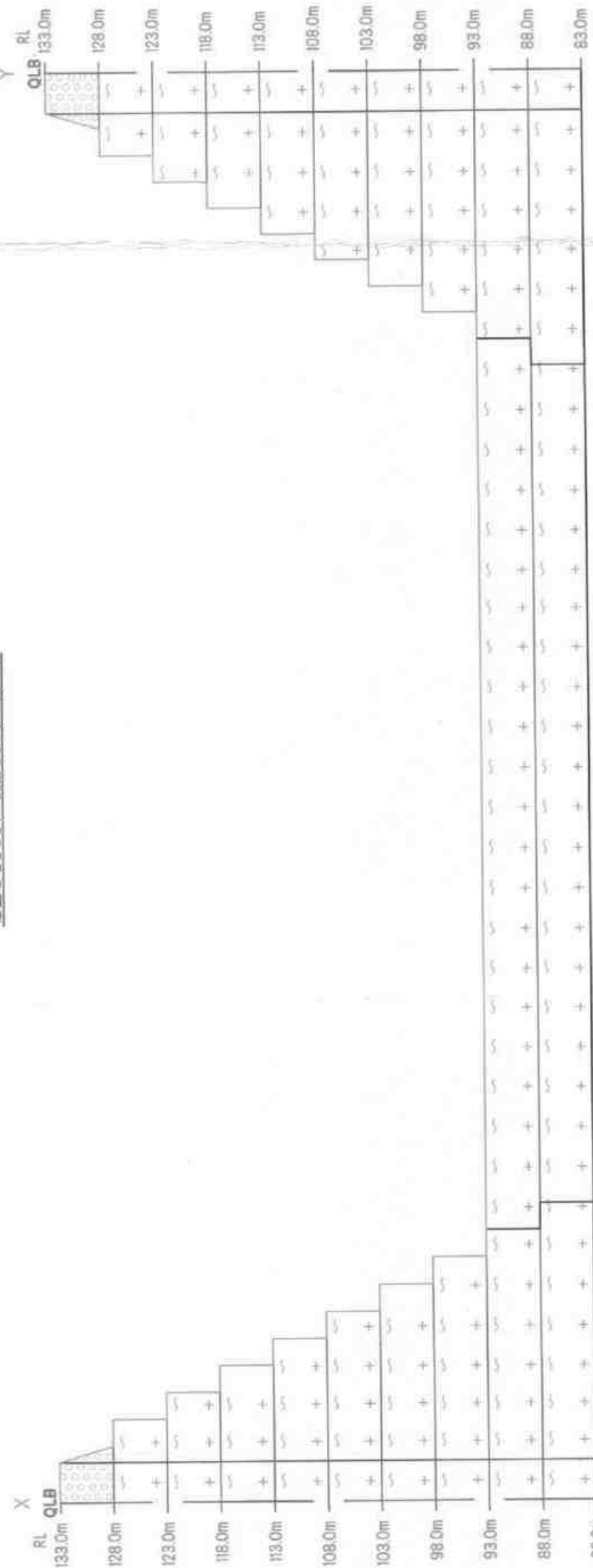
PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

QUALIFIED PERSON
N.R.VINITHAN M.Sc.(App.Geo)

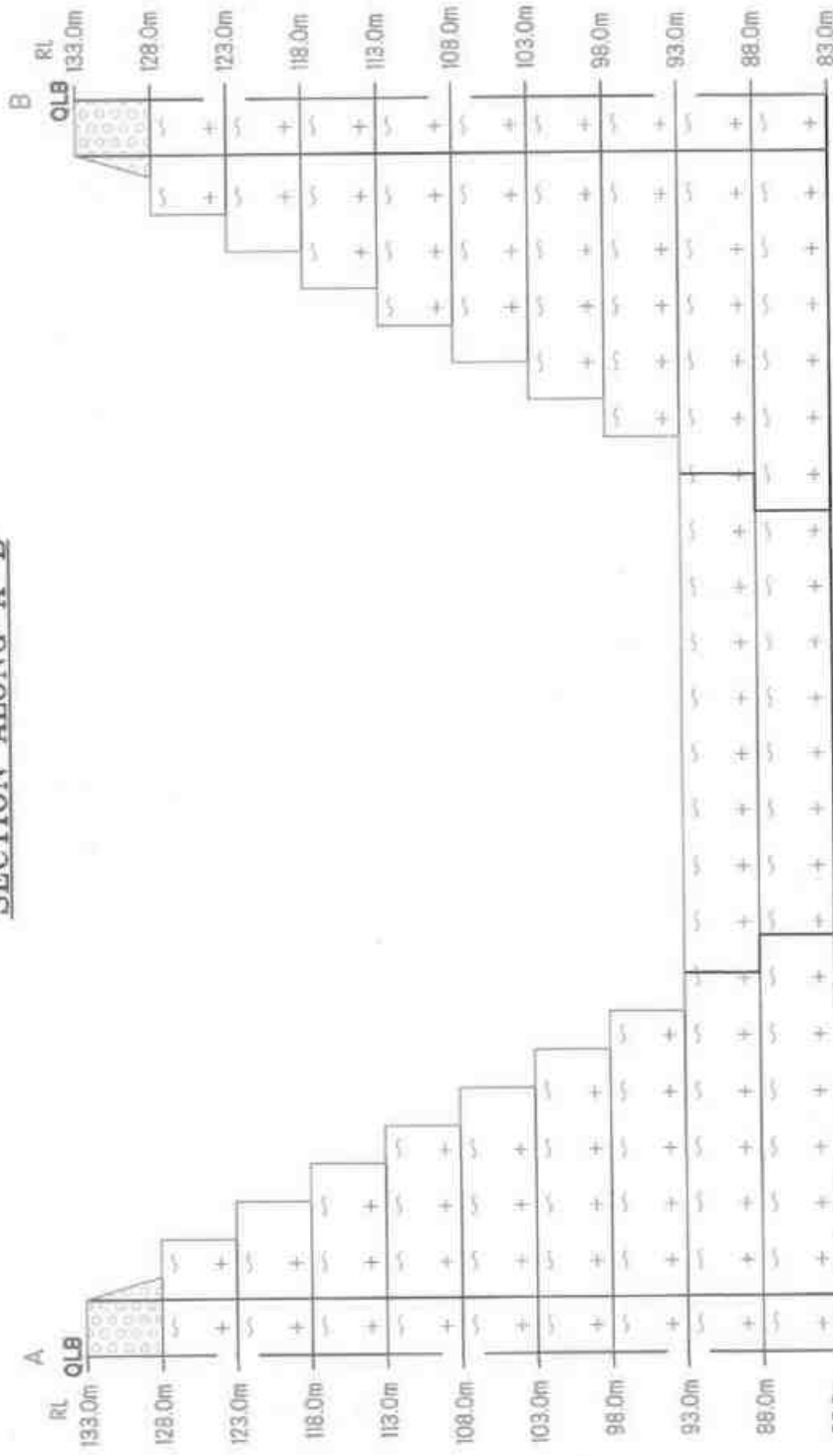


PROPOSED SITE SERVICES
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

SECTION ALONG X-Y



SECTION ALONG A-B



DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	NII	3.75.00
INFRASTRUCTURE	NII	0.01.00
ROADS	NII	0.01.00
GREEN BELT	NII	0.84.50
UN-UTILIZED AREA	4.61.50	NII
GRAND TOTAL	4.61.50	4.61.50

Ultimate Pit Dimension of End of the Mining Plan Period
1250mX150(Avg)mX40m(Max)

PLATE NO-VI
DATE OF SURVEY : 05.10.2024

APPLICANT:
THIRUP.K.SANKAR RAI,
S/O:PERIYA KENGAIYA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALLI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALLI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

Q.L. APPLIED BOUNDARY	---
7.5m SAFETY DISTANCE	---
TEMPORARY BENCH MARK	TM
APPROACH ROAD	---
CONTOUR	---
SCRUB	---
GRAVEL	---
ROUGH STONE	---
STRIKE & DIP	---
PROPOSED QUARRY PIT	---

PROGRESSIVE QUARRY CLOSER

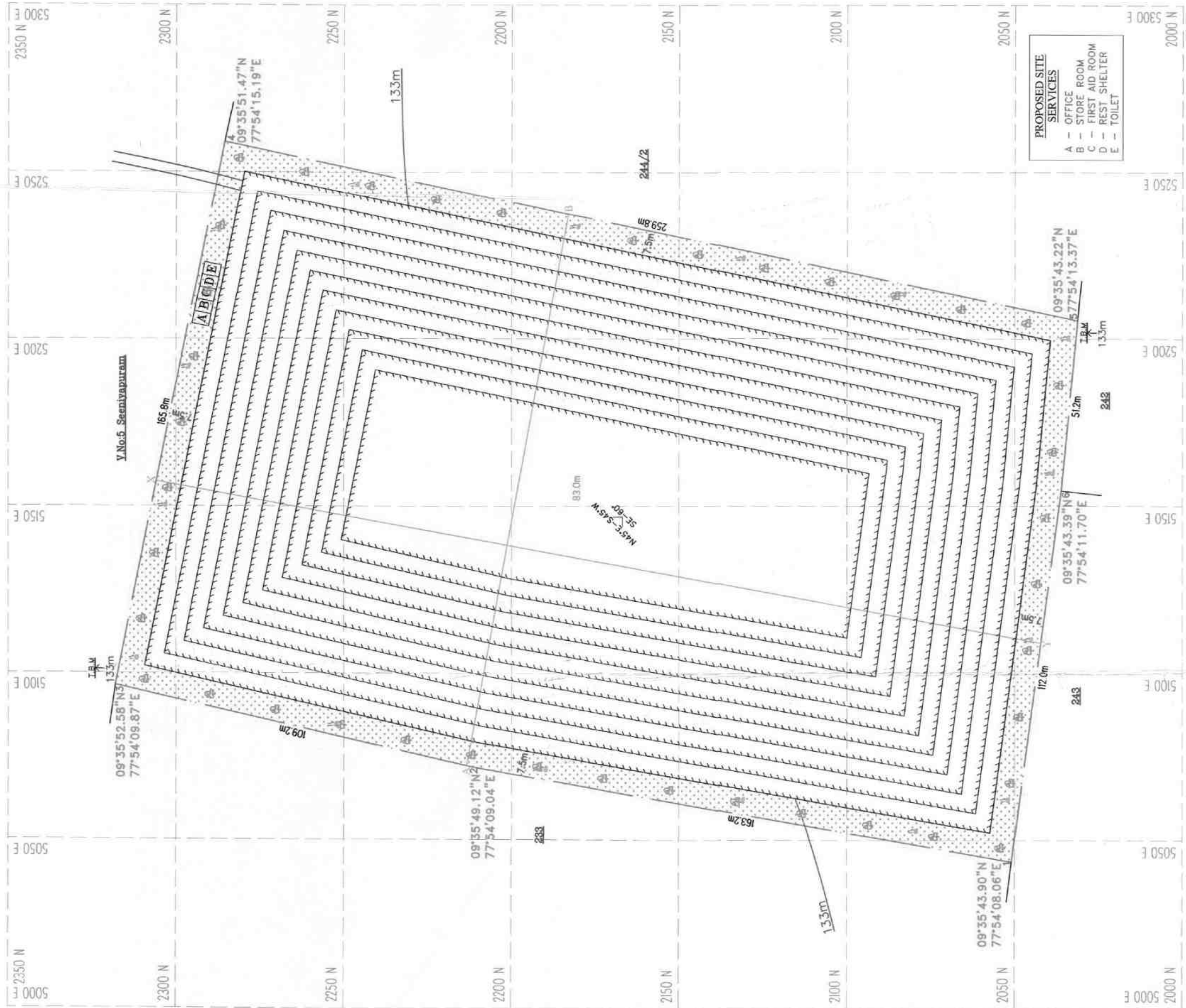
PLAN & SECTIONS

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

PREPARED BY:

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

N.RAVINATHAN M.Sc (App.Geo)
QUALIFIED PERSON



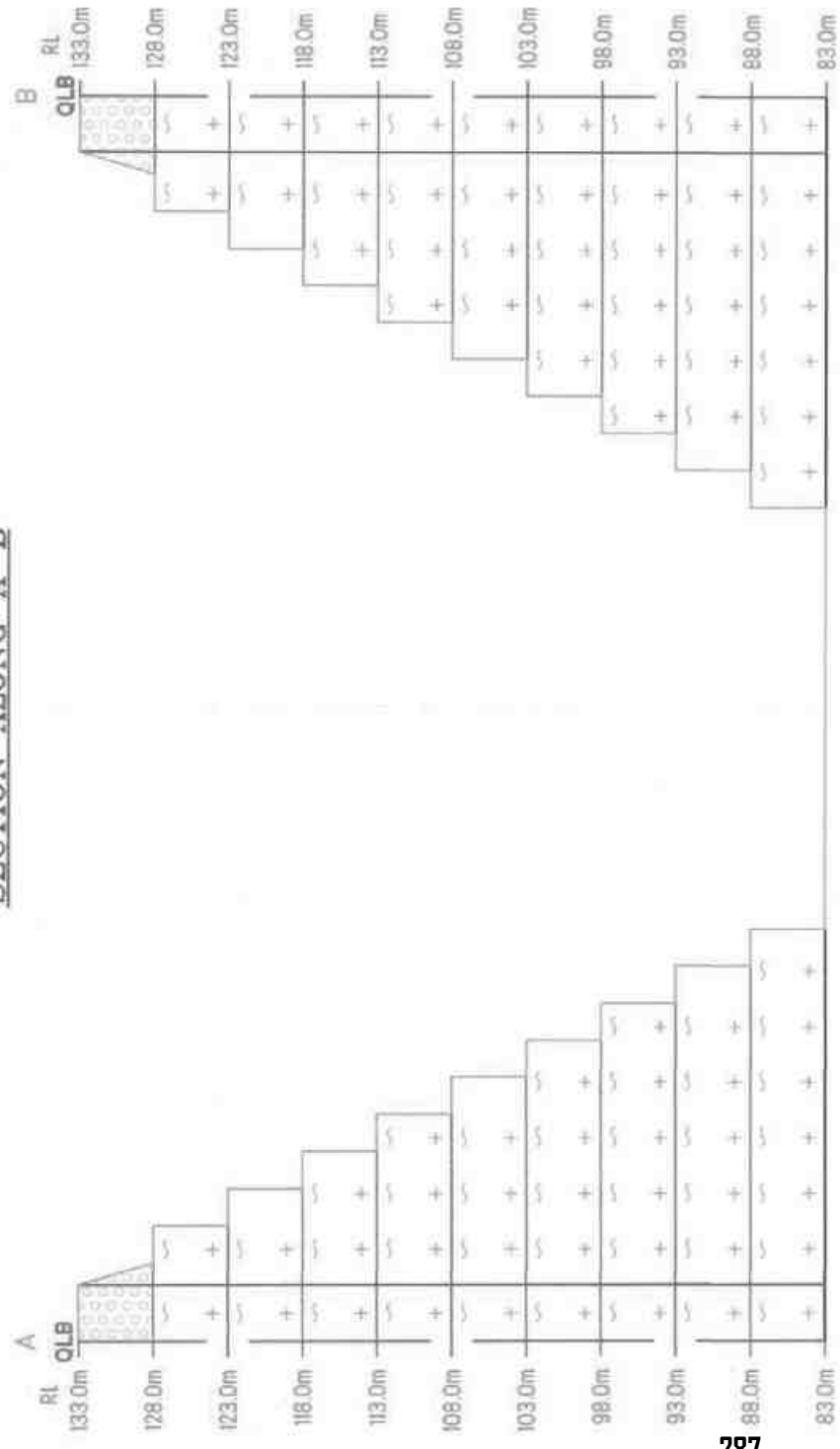
Proposed area to be Planted

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

SECTION ALONG X-Y



SECTION ALONG A-B



Ultimate Pit Dimension of End of the Quarry Lease Period
1250mX150(Avg)mX50m(Max)

PLATE NO-VII
DATE OF SURVEY : 05.10.2024

APPLICANT:
THIRUP.P.K.SANKAR RAJ,
S/O PERIYA KENGAIA,
NO.4/328, CHANDRACIRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

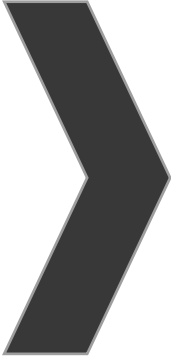
Q.L. APPLIED BOUNDARY	=====
7.5m SAFETY DISTANCE	=====
TEMPORARY BENCH MARK	=====
APPROACH ROAD	=====
CONTOUR	=====
SCRUB	=====
GRAVEL	=====
ROUGH STONE	=====
STRIKE & DIP	=====
PROPOSED QUARRY PIT	=====

CONCEPTUAL PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

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

QUALIFIED PERSON
N.RAVINTHIRAN.M.Sc.(App.Geo)

சென்னை மாநகராட்சி
சுற்றுச்சூழல் பாதுகாப்பு
24 OCT 2024
விநாயகம்
புதுப்பலி & காரங்குடி



ANNEXURE-4

From

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

To

Thiru. P.K.Sankar raj
S/O periya kengaiya,
No.4/328,Chandiragiripuram,
Pavalli village ,Virudhunagar Taluk,
Virudhunagar District-626 125.

Roc. No: KV1/683/2024, Dated: 25.10.2024

Sir,

Sub: Mines and Minerals - Minor Mineral -
Virudhunagar District - Virudhunagar Taluk -
Pavalli Village - Patta Land - S.F.Nos: 244/1
Extent 4.61.50 Hectares - Quarry lease application
preferred by Thiru. P.K.Sankar raj
S/O,Periya kengaiya, for quarrying Rough Stone
and Gravel -Details of quarries in 500 meter radius
- Regarding.

- Ref:**
1. Quarry lease application received from Thiru. P.K.Sankar raj dated:25.06.2024.
 2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/683/2024, Dated: 04.10.2024.
 3. Thiru. P.K.Sankar raj S/O periya kengaiya letter, dated: 24.10.2024.

Thiru. P.K.Sankar Raj has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.Nos: 244/1 of pavalli Village, Virudhunagr Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.No: 244/1 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

P.K. Sankar Raj

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2, 3 & 4 of the mining plan. The Geological reserves is estimated as 2026080 cbm Roughstone and 225120 cbm of Gravel. The mineable reserves is estimated as 889905 Roughstone and 187500 cbm of Gravel upto a depth of 50 m below ground level for the period of Ten years.

4) The applicant Thiru. P.K.Sankar Raj S/O periya kengaiya in the reference 3rd cited has requested to furnish details of quarries situated within 500 m radial distance from the applied area.

5) As per his request the details of quarry situated within 500 meter radius from the proposed area for obtaining Environmental Clearance as detailed below:

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

S.N o	Quarry detail	Taluk & Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	Existing Quarries:			
1.	Thiru.P.K.Muthuraj S/o.Periakengaiyah Nayakkar 4/32, Chandrakiripuram, Pavali Post , Virudhunagar	Virudhunagar Taluk and Seeniyapuram Village	88/5 & 3.13.5 (Hect)	KV1/809/2018 Dated::08.08.2020 26.08.2020 to 25.08.2025
2.	Thiru.R.Ramar S/o, Raju 4/560, Chinnavallikulam Village, Aruppukottai	Virudhunagar Taluk and Seeniyapuram & Pavali village	97/2B 232/1 232/3 & 2.58.50 (Hect)	KV1/411/2018 Dated::07.02.2019 23.02.2019 to 22.02.2024
II	Abandoned Quarry :			
1.	-----NIL-----			

P.K. Sankar Raj

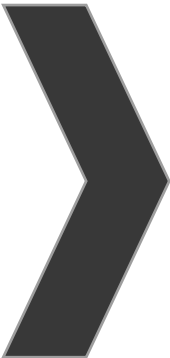
III	Present Proposed Quarry :			
1.	Thiru. P.K.Sankar raj S/O periya kengaiya, No.4/328,Chandiragi ripuram, Pavalli village ,Virudhunagar Taluk, Virudhunagar District-626 125.	Virudhunagar Taluk and Pavali village	244/1 & 4.61.50 (Hect)	KV1/683/2024 dated 04.10.2024
		TOTAL	10.33.5	


 Assistant Director,
 Geology and Mining,
 Virudhunagar.

Copy to :

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

P.K. Sankar Raj



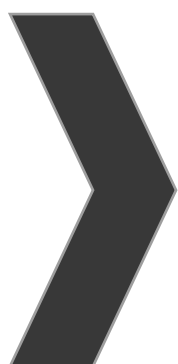
ANNEXURE-5

உதயன் அம்மம்மா
உதயன் அம்மம்மா
உதயன் அம்மம்மா

[illegible][illegible][illegible]

கிராம் நிர்வாக அலுவலர்
பாவாலி கிராமம்
விருதுநகர் வட்டம்

ப.க. பழனிசாமி



ANNEXURE-6



வட்டம். திருச்சூரூர்
புல எண் 244

பிராமம் { பெயர் பரவாணி
செறட்டர் 8 ஏ 7.5
புல எண்.



(Signature)
பிராம திருவிபர புரம்
பரவாணி பிராமம்
விருதுநகர் வட்டம்.

3	4.0	27.2
		11.3
		5
E	3.2	32.4
		30.6
		11
		26.5
C	5.8	14.5
		11
		32.4
1	6.0	16.4
		24.3

வரைந்தவர். தி. கிருஷ்ணமூர்த்தி
23.7.24
அளவு. 1 மீ. = 3000 செ.மீ

P.K. சுவாமிநாதன்



Twice over

கரம நர்வாக் பீலவர்
பாவலி சிரமம்
விருதநகர் வட்டம்.

LEASE APPLIED AREA



தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : நிருதுநகர்

வருவாய் கிராமம் : பாவாலி

வட்டம் : நிருதுநகர்

பட்டா எண் : 2537

உரிமையாளர்கள் பெயர்

1. பெரிய கெங்கையா

மகன்

பெ.கெ. சங்கரராஜ்

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	
244	1	4 - 61.50	19.57	--	--	--	--	2023/0103/26/197377--- ----- 22-06-2023
		4 - 61.50	19.57					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 26/05/006/02537/30627 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 19-06-2024 அன்று 02:04:01 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

P.K. முத்துசாமி

உதயசூர்

25/3/2024

கிராமத் துணைக்கு

ဂါလီလီ

முதல்

24/4 1 K. H. 1957

யெ.கெ. சிங்கராஜ்

திரு

12-11-1957

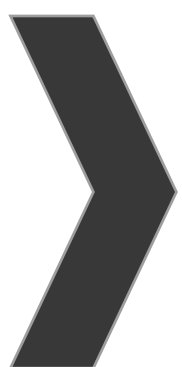
பாவலி கிராமம்

விருதுநகர் வட்டம்



						8	9	10	11		
243	3	243-1	ர	பு	...	4-2	2	4 17	0 11.5	0 49	421 க. பெருமாள் நாயக்கர்.
	4A	-4பா	ர	பு	...	4-2	2	4 17	0 17.0	0 70	421 க. பெருமாள் நாயக்கர்.
	4B	-4பா	ர	பு	...	4-2	2	4 17	0 18.0	0 77	130 க. குஞ்சாமி நாயக்கர்.
	5A	-5பா	ர	பு	...	4-2	2	4 17	0 15.0	0 62	421 க. பெருமாள் நாயக்கர்.
	5B	-5பா	ர	பு	...	4-2	2	4 17	0 18.0	0 77	130 க. குஞ்சாமி நாயக்கர்.
	6A	-6பா	ர	பு	...	4-2	2	4 17	0 22.5	0 93	240 பெ. சின்ன கெங்கா நாயக்கர்.
	6B	-6பா	ர	பு	...	4 2	2	4 17	0 43.5	1 81	729 பெ. பெரிய கெங்கா நாயக்கர்(1), குஞ்சாமி நாயக்கர்(2).
								2 03.0	8 49		
244	1	244-1	ர	பு	...	4-2	2	4 17	4 61.5	19 27	252 க. சுந்தரராஜ முர்த்தி நாயக்கர்.
	2	-2	ர	பு	...	4-2	2	4 17	4 15.0	17 34	310 க. சோமசுந்தர முர்த்தி நாயக்கர்.
								8 76.5	36 61		
245	1	245-1	ர	பு	...	4-2	2	4 17	0 38.0	1 59	162 க. கோயால் சாமி நாயக்கர்.
	2A	-2A	ர	பு	...	4-2	2	4 17	0 58.0	2 42	262 சி. சுந்தரம் மாள்.
	2B	-2B	ர	பு	...	4-2	2	4 17	0 57.0	2 38	310 க. சோமசுந்தர முர்த்தி நாயக்கர்.
	3	-3	ர	பு	...	4 2	2	4 17	1 19.5	4 99	766 ச. முத்து வேல்(1), பொம்மை யன்(2).
	4	-4	ர	பு	...	4-2	2	4 17	1 14.0	4 77	573 கோ. ராமசாமி நாயக்கர்.
								3 86.5	16 15		

சுரேஷ் கிருஷ்ணன்
பாவாலை கிராமம்
விருதுநகர் வட்டம்.



ANNEXURE-7



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4230	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4230	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	08.10.2024	Test Completed on	19.10.2024
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	67.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.5	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4231	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4231	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	08.10.2024	Test Completed on	19.10.2024
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	57.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.8	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 2



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4232	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4232	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	08.10.2024	Test Completed on	19.10.2024
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	52.6	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4233	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4233	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	09.10.2024	Test Completed on	19.10.2024
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	70.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	32.7	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	10.9	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4234	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4234	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	09.10.2024	Test Completed on	19.10.2024
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	52.3	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	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 5 of 5



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4235	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4235	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	09.10.2024	Test Completed on	19.10.2024
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	49.8	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	5.5	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4236	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4236	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	10.10.2024	Test Completed on	19.10.2024
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	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.9	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	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 7 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4237	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4237	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	10.10.2024	Test Completed on	19.10.2024
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	58.2	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	9.8	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4238	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4238	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	11.10.2024	Test Completed on	19.10.2024
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	47.4	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	5.4	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4239	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4239	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	11.10.2024	Test Completed on	19.10.2024
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	56.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.7	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4240	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4240	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	12.10.2024	Test Completed on	19.10.2024
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	47.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.5	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	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4241	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-NAKKANERI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4241	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	12.10.2024	Test Completed on	19.10.2024
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	48.2	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	4.9	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4242	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4242	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	13.10.2024	Test Completed on	19.10.2024
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	45.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.0	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	7.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4243	Report Date.	19.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-NAKKANERI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4243	Sample Received on	14.10.2024
Sample Collected by	LABORATORY	Test Commenced on	14.10.2024
Sample Collected on	12.10.2024	Test Completed on	19.10.2024
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	49.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.9	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	7.7	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


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4338	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4338	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	15.10.2024	Test Completed on	26.10.2024
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	48.6	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4339	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4339	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	15.10.2024	Test Completed on	26.10.2024
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	53.4	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	7.7	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 16



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4340	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4340	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	16.10.2024	Test Completed on	26.10.2024
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	46.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.3	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	7.4	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4341	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4341	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	16.10.2024	Test Completed on	26.10.2024
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	51.5	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	6.0	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 4 of 4



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4342	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4342	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	17.10.2024	Test Completed on	26.10.2024
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	47.8	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	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4343	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4343	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	17.10.2024	Test Completed on	26.10.2024
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	56.1	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	6.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4344	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4344	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	18.10.2024	Test Completed on	26.10.2024
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	42.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.4	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	6.4	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4345	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4345	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	18.10.2024	Test Completed on	26.10.2024
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	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.7	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 8 of 24



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4346	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4346	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	19.10.2024	Test Completed on	26.10.2024
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	60.6	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	5.9	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4347	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4347	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	19.10.2024	Test Completed on	26.10.2024
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	48.7	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	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 10 of 24

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4348	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4348	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	19.10.2024	Test Completed on	26.10.2024
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	48.6	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	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 11 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4349	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha, S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4349	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	20.10.2024	Test Completed on	26.10.2024
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	67	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.2	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	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

8 Oct
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 24

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4350	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4350	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	20.10.2024	Test Completed on	26.10.2024
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	51.7	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	5.2	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


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4351	Report Date.	26.10.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4351	Sample Received on	21.10.2024
Sample Collected by	LABORATORY	Test Commenced on	21.10.2024
Sample Collected on	20.10.2024	Test Completed on	26.10.2024
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	51.0	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	5.8	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 14 of 24



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4374	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4374	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	22.10.2024	Test Completed on	02.11.2024
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	54.2	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	5.1	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4375	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4375	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	22.10.2024	Test Completed on	02.11.2024
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	46.3	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	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.5	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 334



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4476	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4476	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	22.10.2024	Test Completed on	02.11.2024
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	43.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 3 of 334



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4477	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4477	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	23.10.2024	Test Completed on	02.11.2024
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	59.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.8	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	8.9	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

8.10.24
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4478	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4478	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	23.10.2024	Test Completed on	02.11.2024
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	49.9	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	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4479	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4479	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	23.10.2024	Test Completed on	02.11.2024
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	47.0	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	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4480	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4480	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	24.10.2024	Test Completed on	02.11.2024
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	39.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	5.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4481	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4481	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	24.10.2024	Test Completed on	02.11.2024
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	23.3	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4482	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4482	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	25.10.2024	Test Completed on	02.11.2024
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	43.6	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	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 9 of 334



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4483	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4483	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	25.10.2024	Test Completed on	02.11.2024
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	52.8	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	5.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4484	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4484	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	26.10.2024	Test Completed on	02.11.2024
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	17.8	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	6.9	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4485	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4485	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	26.10.2024	Test Completed on	02.11.2024
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	52.3	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	6.3	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4486	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4486	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	27.10.2024	Test Completed on	02.11.2024
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	46.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.4	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4487	Report Date.	02.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4487	Sample Received on	28.10.2024
Sample Collected by	LABORATORY	Test Commenced on	28.10.2024
Sample Collected on	27.10.2024	Test Completed on	02.11.2024
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	53.2	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	7.5	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4410	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4410	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	29.10.2024	Test Completed on	09.11.2024
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	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.0	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	8.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4411	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4411	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	29.10.2024	Test Completed on	09.11.2024
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	47.9	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	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 4



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4412	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4412	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	30.10.2024	Test Completed on	09.11.2024
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	51.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4413	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4413	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	30.10.2024	Test Completed on	09.11.2024
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	49.4	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	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4414	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4414	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	31.10.2024	Test Completed on	09.11.2024
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	40.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.7	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	6.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4415	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4415	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	31.10.2024	Test Completed on	09.11.2024
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	57.6	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	6.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4416	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4416	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	01.11.2024	Test Completed on	09.11.2024
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	43.2	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	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.5	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4417	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4417	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	01.11.2024	Test Completed on	09.11.2024
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	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	5.6	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 8 of 354



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4418	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4418	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	02.11.2024	Test Completed on	09.11.2024
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	56.6	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	5.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4419	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4419	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	02.11.2024	Test Completed on	09.11.2024
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	58.3	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	6.3	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 10 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4420	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4420	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	02.11.2024	Test Completed on	09.11.2024
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	51.8	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	6.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 11 of 354



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4421	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4421	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	03.11.2024	Test Completed on	09.11.2024
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	61.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.5	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Pat
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4422	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4422	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	03.11.2024	Test Completed on	09.11.2024
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	53.5	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	5.5	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Rat
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4423	Report Date.	09.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4423	Sample Received on	04.11.2024
Sample Collected by	LABORATORY	Test Commenced on	04.11.2024
Sample Collected on	03.11.2024	Test Completed on	09.11.2024
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	49.0	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	5.3	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4446	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4446	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	05.11.2024	Test Completed on	16.11.2024
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	69.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	32.2	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	10.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4447	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4447	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	05.11.2024	Test Completed on	16.11.2024
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	60.9	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	6.6	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4448	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4448	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	05.11.2024	Test Completed on	16.11.2024
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	44.6	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	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.5	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4449	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4449	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	06.11.2024	Test Completed on	16.11.2024
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	63.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.7	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	9.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4450	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4450	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	06.11.2024	Test Completed on	16.11.2024
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	54.7	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	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4451	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4451	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	06.11.2024	Test Completed on	16.11.2024
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	47.8	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	5.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Rat
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4452	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4452	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	07.11.2024	Test Completed on	16.11.2024
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	50.7	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	5.8	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4453	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4453	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	07.11.2024	Test Completed on	16.11.2024
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	56.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.5	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	9.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4454	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4454	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	08.11.2024	Test Completed on	16.11.2024
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	47.0	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	5.3	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 9 of 364



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4455	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4455	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	08.11.2024	Test Completed on	16.11.2024
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	52.2	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	5.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 10 of 10



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4456	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4456	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	09.11.2024	Test Completed on	16.11.2024
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	47.9	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	5.3	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4457	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4457	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	09.11.2024	Test Completed on	16.11.2024
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	53.6	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	7.9	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 364



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4458	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4458	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	10.11.2024	Test Completed on	16.11.2024
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	51.3	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	6.3	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4459	Report Date.	16.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4459	Sample Received on	11.11.2024
Sample Collected by	LABORATORY	Test Commenced on	11.11.2024
Sample Collected on	10.11.2024	Test Completed on	16.11.2024
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	51.2	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	5.9	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4482	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4482	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	12.11.2024	Test Completed on	23.11.2024
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	47.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.8	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	7.8	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4483	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4483	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	12.11.2024	Test Completed on	23.11.2024
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	50.9	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	5.8	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 374



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4484	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4484	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	13.11.2024	Test Completed on	23.11.2024
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	50.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4485	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4485	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	13.11.2024	Test Completed on	23.11.2024
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	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.4	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4486	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4486	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	14.11.2024	Test Completed on	23.11.2024
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	47.9	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4487	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4487	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	14.11.2024	Test Completed on	23.11.2024
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	58.8	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	6.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4488	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4488	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	15.11.2024	Test Completed on	23.11.2024
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	44.4	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	5.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4489	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4489	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	15.11.2024	Test Completed on	23.11.2024
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	55.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	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	9.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4490	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4490	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	16.11.2024	Test Completed on	23.11.2024
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	72.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4491	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4491	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	16.11.2024	Test Completed on	23.11.2024
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	56.5	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	6.0	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

8.10.24
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 10 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4492	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4492	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	16.11.2024	Test Completed on	23.11.2024
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	46.2	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	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4493	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha, S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4493	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	17.11.2024	Test Completed on	23.11.2024
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	66.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	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

8 Pat
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4494	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4494	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	17.11.2024	Test Completed on	23.11.2024
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	48.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 13 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4495	Report Date.	23.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4495	Sample Received on	18.11.2024
Sample Collected by	LABORATORY	Test Commenced on	18.11.2024
Sample Collected on	17.11.2024	Test Completed on	23.11.2024
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	50.6	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	5.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 14 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4518	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4518	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	19.11.2024	Test Completed on	30.11.2024
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	57.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.7	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

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4519	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4519	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	19.11.2024	Test Completed on	30.11.2024
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	49.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.9	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4520	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4520	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	19.11.2024	Test Completed on	30.11.2024
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	45.4	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	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.7	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4521	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4521	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	20.11.2024	Test Completed on	30.11.2024
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	62.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.9	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	9.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4522	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4522	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	20.11.2024	Test Completed on	30.11.2024
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	55.9	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	5.9	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4523	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4523	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	21.11.2024	Test Completed on	30.11.2024
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	48.2	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Rat
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4524	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4524	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	21.11.2024	Test Completed on	30.11.2024
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	40.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	5.8	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4525	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4525	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	21.11.2024	Test Completed on	30.11.2024
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	50.1	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	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4526	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4526	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	21.11.2024	Test Completed on	30.11.2024
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	46.6	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	5.3	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4527	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4527	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	22.11.2024	Test Completed on	30.11.2024
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	50.8	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	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4528	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4528	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	22.11.2024	Test Completed on	30.11.2024
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	51.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 11 of 394



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4529	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4529	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	23.11.2024	Test Completed on	30.11.2024
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	53.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.4	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	10.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4530	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4530	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	23.11.2024	Test Completed on	30.11.2024
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	45.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.1	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	7.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4531	Report Date.	30.11.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4531	Sample Received on	25.11.2024
Sample Collected by	LABORATORY	Test Commenced on	25.11.2024
Sample Collected on	24.11.2024	Test Completed on	30.11.2024
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	52.4	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	6.7	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 14 of 394



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4554	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4554	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	26.11.2024	Test Completed on	07.12.2024
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	49.5	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	5.8	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4555	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4555	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	26.11.2024	Test Completed on	07.12.2024
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	48.5	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	5.1	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4556	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4556	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	27.11.2024	Test Completed on	07.12.2024
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	28.8	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4557	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4557	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	27.11.2024	Test Completed on	07.12.2024
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	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4558	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4558	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	28.11.2024	Test Completed on	07.12.2024
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	41.4	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	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4559	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4559	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	28.11.2024	Test Completed on	07.12.2024
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	25.0	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	8.5	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4560	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4560	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	29.11.2024	Test Completed on	07.12.2024
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	48.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.1	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	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 7 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4561	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4561	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	29.11.2024	Test Completed on	07.12.2024
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	50.4	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4562	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4562	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	30.11.2024	Test Completed on	07.12.2024
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	25.7	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	8.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4563	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4563	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	30.11.2024	Test Completed on	07.12.2024
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	46.9	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	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4564	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4564	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	30.11.2024	Test Completed on	07.12.2024
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	53.5	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	6.3	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4565	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4565	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	01.12.2024	Test Completed on	07.12.2024
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	58.3	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	5.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4566	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4566	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	01.12.2024	Test Completed on	07.12.2024
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	50.5	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	5.0	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4567	Report Date.	07.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4567	Sample Received on	02.12.2024
Sample Collected by	LABORATORY	Test Commenced on	02.12.2024
Sample Collected on	01.12.2024	Test Completed on	07.12.2024
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	50.2	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	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4590	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4590	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	14.12.2024
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	72.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.5	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	12.5	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4591	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4591	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	14.12.2024
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	59.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.0	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	9.5	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

8 Paul
Verified



END OF THE REPORT

J. Gnanaprasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2 of 4



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4592	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4592	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	14.12.2024
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	44.2	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	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 3 of 4



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4593	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4593	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	14.12.2024
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	65.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.5	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	9.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4594	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4594	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	14.12.2024
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	55.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	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	8.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4595	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4595	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	14.12.2024
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	47.4	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	4.9	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




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4596	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4596	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	14.12.2024
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	44.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.5	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	6.9	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4597	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4597	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	14.12.2024
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	57.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.9	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	9.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4598	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4598	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	14.12.2024
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	41.8	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	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4599	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4599	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	14.12.2024
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	53.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.4	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	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4600	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4600	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	14.12.2024
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	48.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.3	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	8.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 11 of 23



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4601	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4601	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	14.12.2024
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	51.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.7	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	8.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 24



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4602	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4602	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	14.12.2024
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	47.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.8	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	7.7	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

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 13 of 25



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4603	Report Date.	14.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4603	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	14.12.2024
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	52.6	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	6.9	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 14 of 24



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4626	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-SANGANERI 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-4626	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	21.12.2024
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	46.2	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	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4627	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4627	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	21.12.2024
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	48.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4628	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-SANGANERI 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-4628	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	21.12.2024
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	49.2	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	5.7	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4629	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4629	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	21.12.2024
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	50.6	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	5.7	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4630	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4630	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	21.12.2024
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	49.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.6	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4631	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4631	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	21.12.2024
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	54.8	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	5.7	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4632	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4632	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	21.12.2024
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	45.3	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	5.2	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 7 of 34



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4633	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4633	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	21.12.2024
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	51.6	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	8.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4634	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4634	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	21.12.2024
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	55.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	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	8.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4635	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4635	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	21.12.2024
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	57.7	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	6.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4636	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4636	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	21.12.2024
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	45.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.0	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4637	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4637	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	21.12.2024
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	58.9	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	5.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 34



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4638	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4638	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	21.12.2024
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	52.9	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	5.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4639	Report Date.	21.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4639	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	21.12.2024
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	51.4	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	5.9	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


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4781	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4781	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	29.12.2024
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	68.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.9	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	10.2	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 1 of 444



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4782	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4782	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	29.12.2024
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	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.1	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	6.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4783	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4783	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	29.12.2024
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	45.0	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	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	6.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4784	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4784	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	29.12.2024
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	62.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.3	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	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4785	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4785	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	29.12.2024
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	51.2	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	5.1	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4786	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4786	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	29.12.2024
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	46.6	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	4.7	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4787	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha, S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4787	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	29.12.2024
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	40.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	5.9	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

8 Paal
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 7 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4788	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4788	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	29.12.2024
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	53.6	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	5.4	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4789	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4789	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	29.12.2024
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	44.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.1	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	6.7	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4790	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4790	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	29.12.2024
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	51.2	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	4.8	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4791	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4791	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	29.12.2024
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	52.0	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 11 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4792	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4792	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	29.12.2024
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	54.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.7	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	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4793	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4793	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	29.12.2024
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	50.7	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4794	Report Date.	29.12.2024

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4794	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	29.12.2024
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	52.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.9	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	9.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. K.
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4810	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4810	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	11.01.2025
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	51.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.5	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4811	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4811	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	11.01.2025
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	23.2	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4812	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-MAVADE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4812	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	11.01.2025
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	49.8	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	5.9	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4813	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-VADAMALAIKURICHI
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4813	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	11.01.2025
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	53.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4814	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4814	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	11.01.2025
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	49.9	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	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.0	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4815	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4815	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	11.01.2025
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	58.4	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	6.6	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4816	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-AAA COLLEGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4816	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	11.01.2025
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	46.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.0	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	7.1	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 7 of 464



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4817	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-KAVULUR
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4817	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	11.01.2025
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	55.6	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 8 of 14



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4818	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4818	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	11.01.2025
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	71.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.2	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	11.6	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4819	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4819	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	11.01.2025
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	58.9	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	6.4	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4820	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4820	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	11.01.2025
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	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	6.1	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

For Shrient Analytical and Research Labs Pvt. Ltd

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4821	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED 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-4821	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	11.01.2025
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	64.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.1	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	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

8 Paul
Verified



END OF THE REPORT

J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 12 of 16



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4822	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

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

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4822	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	11.01.2025
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	54.2	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	5.6	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.
CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4823	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-KUMARALINGAPURAM
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4823	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	11.01.2025
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	49.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.0	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	7.8	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

8 Paul
Verified



J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4837

Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/NO/CHE-4837	Date of Monitoring	28.12.2024/ 29.12.2024
Sample Collected by	LABORATORY		

Time in hrs	N1	N2	N3	N4	N5	N6	N7
06.00	41.7	46.3	46.6	44.5	46.4	48.1	48
07.00	50	49.8	51.3	51	53.2	50.4	49.1
08.00	54.6	47.9	49.6	45	46.5	48.7	47.4
09.00	54.1	52.5	48.9	47.3	45.5	48.7	46.7
10.00	52.9	49	48.1	46.3	46.1	47.7	45.9
11.00	52.6	47.7	48.3	43.4	44.6	46.9	45.3
12.00	54.3	46.3	45.2	43.5	40.5	44.7	43
13.00	53.9	51.9	45.5	43.5	42.5	47	43.3
14.00	51.7	46.8	45.3	46.3	45.6	52.6	43.1
15.00	52.9	53.1	47.6	50.8	43.7	46.4	45.4
16.00	54.1	50.4	49.6	43.1	44.9	48.4	47.4
17.00	53.6	49.4	48.9	41.2	47.0	47.7	46.7
18.00	51.1	50.4	50.3	46.9	43.5	49.1	48.1
19.00	50.3	49.7	52.0	49.4	41.9	50.8	49.8
20.00	49.2	44.8	46.6	47.3	42.7	45.4	44.4
21.00	50.9	42.1	47.0	45.4	37.7	45.8	44.8
22.00	44.2	36.1	48.4	44.2	38.9	49.8	46.2
23.00	41.6	35.8	40.1	41.6	39.6	39.7	37.9
24.00	40.9	36	40.1	40.9	38.9	38.6	37.9
01.00	38.4	36.6	38.4	38.4	38.2	37.9	36.2
02.00	38.6	35.8	39	38.6	40.9	39.6	36.8
03.00	38.1	37.4	37.7	38.1	39.4	37.9	35.6
04.00	38.9	39.1	37.7	38.9	38.0	38.8	36.7
05.00	41.2	41.6	40.7	41.2	37.9	39.4	38.8

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4837

Report Date.	11.01.2025

	N1	N2	N3	N4	N5	N6	N7
DAY EQUIVALENT	52.5	49.5	48.6	46.8	46.0	48.5	46.6
NIGHT EQUIVALENT	40.7	37.8	42	40.7	39.1	42.7	39.9
DAY & NIGHT EQUIVALENT	50.8	47.8	47.3	45.6	44.6	47.3	45.3

Remarks:

LOCATIONS:

N1- MINE LEASE AREA
N2-SENDUNRAPURAM
N3-KUMARALINGAPURAM
N4-AAA COLLEGE
N5-KAVULUR
N6-MAVADE
N7-VADAMALAIKURICHI

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4831	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	SOIL
Sample Mark	S1-PROPOSED MINE LEASE AREA

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4831	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.25
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	101.3
3	Dry matter content	IS 15106: 2002	%	96.32
4	Water Content	IS 15106: 2002	%	3.68
5	Organic Matter	IS 2720: Part 22: 1972	%	2.74
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	820
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	38.75
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	33.04
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	28.21
	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	3.52
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	1012
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	756
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	%	22.3
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.4

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4832	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	SOIL
Sample Mark	S2-SENDUNRAPURAM

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4832	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.15
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	95.35
3	Dry matter content	IS 15106: 2002	%	95.24
4	Water Content	IS 15106: 2002	%	4.76
5	Organic Matter	IS 2720: Part 22: 1972	%	2.12
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	586
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	47.98
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	17.65
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	34.37
	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	4.26
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	750
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	572
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	%	23.5
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.6

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4833	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu		
Sample Description	SOIL		
Sample Mark	S3-KUMARALINGAPURAM		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4833	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.54
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	84.65
3	Dry matter content	IS 15106: 2002	%	98.74
4	Water Content	IS 15106: 2002	%	1.26
5	Organic Matter	IS 2720: Part 22: 1972	%	3.14
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	1028
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	23.69
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	41.05
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	35.26
	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	2.32
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	942
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	664
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	%	20.1
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.8

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4834	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	SOIL
Sample Mark	S4-AAA COLLEGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4834	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.32
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	103.5
3	Dry matter content	IS 15106: 2002	%	97.25
4	Water Content	IS 15106: 2002	%	2.75
5	Organic Matter	IS 2720: Part 22: 1972	%	2.89
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	836
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	39.06
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	33.86
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	27.08
	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	3.75
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	1025
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	%	21.7
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.3

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4835	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu		
Sample Description	SOIL		
Sample Mark	S5-KAVULUR		

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4835	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.25
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	98.32
3	Dry matter content	IS 15106: 2002	%	95.76
4	Water Content	IS 15106: 2002	%	4.24
5	Organic Matter	IS 2720: Part 22: 1972	%	2.55
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	612
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.35
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	18.24
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	33.41
	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	4.62
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	745
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	582
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	%	21.2
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.8

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4836	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	SOIL
Sample Mark	S6-MAVADE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4836	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	11.01.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.79
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	87.59
3	Dry matter content	IS 15106: 2002	%	99.72
4	Water Content	IS 15106: 2002	%	0.28
5	Organic Matter	IS 2720: Part 22: 1972	%	3.46
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	1108
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	24.76
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	43.26
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	31.98
	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	2.85
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	946
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	686
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	%	25.1
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.7

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4824	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W1-PROPOSED MINE LEASE AREA

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4824	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	11.01.2025
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	-	7.56	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	976.4	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	580	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	321	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	70.6	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	34.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	176	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	145	-
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	76.3	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4824

Report Date.	11.01.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissibl e
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	183	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.08	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	5.24	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.34	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


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2478



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4825	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W2-SENDUNRAPURAM

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4825	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	11.01.2025
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	-	7.25	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	412.5	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	248	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	196	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	42.0	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	21.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	105	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	91.0	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	161	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	55.8	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4825

Report Date.	11.01.2025

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	12.5	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.03	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	1.61	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.36	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).

X

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2480



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4826	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W3-KUMARALINGAPURAM

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4826	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	11.01.2025
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	-	7.29	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	552.3	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	325	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	202	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	27.5	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	32.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	68.7	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	133	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	295	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	25.8	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4826

Report Date.	11.01.2025

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	17.2	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.02	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	1.17	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.21	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).

X

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2482



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4827	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W4-AAA COLLEGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4827	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	11.01.2025
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	-	7.62	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	698.2	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	420	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	267	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	56.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	30.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	142	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	125	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	295	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	104	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4827

Report Date.	11.01.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissibl e
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	20.4	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.02	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	1.4	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.38	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


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2484



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4828	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W5-KAVULUR

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4828	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	11.01.2025
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	-	7.34	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	660.2	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	398	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	254	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	59.2	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	25.4	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	148	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	106	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	282	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	97.5	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4828

Report Date.	11.01.2025

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	16.8	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.03	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.54	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).

X

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2485



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4829	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W6-MAVADE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4829	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	11.01.2025
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	-	7.68	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	477.6	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	290	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	186	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	38.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	21.3	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	97.0	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	88.9	-
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	21.3	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4829

Report Date.	11.01.2025

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	14.1	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	BDL(D.L - 0.01)	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	BDL(D.L - 1.0)	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	BDL(D.L - 0.1)	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).

X

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2488



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4830	Report Date.	11.01.2025

Customer Name & Address	Rough Stone & Gravel quarry of Thiru. P.K. Sankar Raj, extent of 4.61.50Ha,S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu
Sample Description	WATER
Sample Mark	W7-VADAMALAIKURICHI

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4830	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	11.01.2025
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	-	7.72	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1232	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	740	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	302	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	78.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	25.4	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	196.0	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	106	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	300	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	323	1000



Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045

Phone Number +91 82208 36377 Email: - info@shrientanalytical.com

www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4830

Report Date.	11.01.2025

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissibl e
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	110	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	2.82	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.39	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

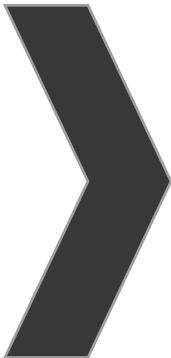
Terms and conditions:

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

LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

Page 2490



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.

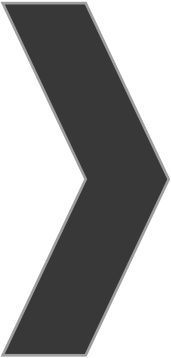
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

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

भारतीय गैर न्यायिक

बीस रुपये

रु.20



Rs.20

TWENTY
RUPEES

INDIA NON JUDICIAL

30061

30 SEP 2023

TAMIL NADU M. Prabu

Global Mining Solutions
Chennai

92AB 023464

THIS MEMORANDUM OF UNDERSTANDING (MOU) IS ENTERED INTO
ON THIS THE 30.09.2023
BETWEEN

M/s. GLOBAL MINING SOLUTIONS , duly represented by its Managing Director Mr.M.Prabhu, having its registered office at Plot No. 6 V.S. City,Kottamettupatti, Omalur, Salem - 636455, hereinafter referred to as "GMS" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors, assigns, nominees, affiliated companies, etc.) of the One Part;

AND

SHRIENT ANALYTICAL AND RESERCH LABS PRIVATE LIMITED., represented by its General Manager- Technical Mr. V.Vimal Nath its registered at 416 /15 Dhargas Road ,Perunkolathur, West Tambara, Chennai -600045,Tamil NADu "SARL" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns) of the Other Part.

(Hereinafter GMS and SARL will be individually referred to as "Party" and collectively referred to as "Parties")

WHEREAS,

- a) **GMS** is engaged in the Business of offering consultancy, EIA works, and Testing Services.
- b) **SARL** is engaged in manufacture and supply of wide range of chemicals for various water, process and waste water treatment applications. Besides having NABL accredited laboratory also.

NOW, THEREFORE IN CONSIDERATION OF THE MUTUAL PROMISES AND COVENANTS CONTAINED IN THIS MOU, IT IS HEREBY AGREED BETWEEN THE PARTIES AS FOLLOWS:

1) **GMS** will subcontract testing services of the NABL Accredited **SARL** scope for following

- ✦ Ambient Air Quality Monitoring and analysis
- ✦ Water and waste water Quality analysis
- ✦ Soil Quality Analysis
- ✦ Noise Monitoring

2) Prices will be as mutually agreed.

3) **DURATION AND RENEWAL**

This MoU is entered into initially for a period of 24 (Twenty-four) from the date of entering into this MoU, and the same is extendable for a further periods on mutually agreed terms and conditions between the parties herein.

Provided, if either party is unwilling to extend the term of the MoU for a second term. Notice in writing, of such intention not to extend the term of this MoU, should be given to the other party not later than three months before the expiry of the first term of six months.

4) **TERMINATION**

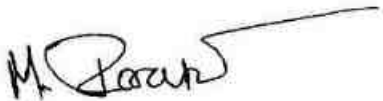
- a) Without prejudice to any other remedies both the parties may have, _____ the right at any time by giving notice in writing to the other party to _____ terminate the MoU.
- b) Termination of this MOU can be done by either party, with a 1 month _____ notice period by the terminating party. It is expected that the parties _____ will discuss any issues that arise that would lead to the need to _____ terminate this agreement prior to the written formal termination of the _____ agreement.
- c) Both the Parties shall on the termination of this MoU return to the other party forthwith any books, records, papers or other property in its possessions belonging to the other party.

5) CONFIDENTIALITY

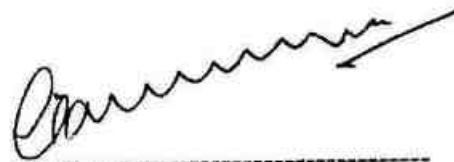
Both during the term of this MoU as well as after the termination of this MoU, the Parties are obliged to keep confidential all proprietary information on such as technical data, know-how, business and operating conditions, technical experience, working methods and the like received from the other Party and not to disclose this information to anyone other than employees, directors and officers. The Parties are obliged to make sure that their employees, directors and officers who have a need to know, at the same time as they receive the said information, are informed.

IN WITNESS WHEREOF THE PARTIES HAVE SIGNED THESE PRESENTS, THE DAY AND YEAR FIRST HEREINABOVE WRITTEN IN THE PRESENCE OF THE FOLLOWING WITNESSES:

M/S GLOBAL MINING SOLUTIONS



**M/S SHRIENT ANALYTICAL AND
RESEARCH LABS PRIVATE
LIMITED**



WITNESSES:

M. Vasantha Kumar

Name: Vasantha Kumar

Address: 315, Ramaninagar,

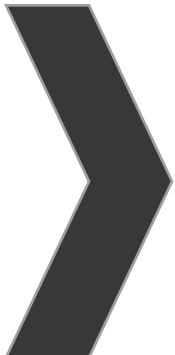
East Thiruvagavundanur, Salem-636005

J G

Name: J.Gnanaprakasam

Address: Plot No 11 Saraswathi Nagar

Old perunkolathur, Chennai-600059



ANNEXURE-10

The party of the first part is operating quarry work in the area Atchankulam Village, Kallikudi Taluk, Madurai District over and extent of survey number 244/1, 4.61.50 hectares in per Tamilnadu Govt's Consent Order No. KV1/683/2024. Dated: 04-10-2024

Whereas the party of the First Part wants blasting to be done at quarry to excavate the Blue metal stone. The blasting work is so intensive and large that the part of the first part has decided to entrust the work involved to the party of the second part on contract basis is as follows.

The party of the First part will allot the blasting operations in the above said areas to the party of the Second part who is responsible for blasting rocks and also making his own arrangement for the explosives and exploding equipments required for the work. The entire blasting in the above quarry and the possession of the blasting equipment will be handled by the party of the second part having valid explosives License No. E95317, E63073, E83537 and Shot Firer licenses issued by the Joint Chief Controller of Explosives, South Circle, Chennai and he hereby undertake the responsibility for the work entrusted.

Payments will be made periodically by the party of the first part for the quantity used, explosives consumed and hours and time of the exploding equipments put into use. Calculations will be made and settlement will be arrived every month. The rates for the items of work will as mutually agreed as marginal cost which includes cost of explosives, transportation cost and other charges for blasting work. This agreement is made for all blasting in the said area.

The Agreement is valid from the date of execution and validity of quarrying leases granted by the State Government to the party of the First part. The agreement is terminable earlier by mutual consent with a month's notice. The agreement will expire with the expiry of quarry lease.

First Party:

Second Party:

Witnesses:

1. M. Muthu Mariappan
2. S. Srinivasan



Place: SANKARANKOVIL

Date: 04-11-2024

P. S. Srinivasan

शॉट फायर करने का प्रमाणपत्र / Shot Firing Certificate
अनुसूची IV के भाग 1 की अनुसूची 10 देखें / See Schedule 10 of Part 1 of Schedule IV
नियमों के अनुसार / According to the rules / See Rule 107 of Explosives Rules, 2008

(खान अधिनियम, 1952 के अधीन न आने वाले क्षेत्रों में विस्फोट करने के लिए राक्षसता प्रमाणपत्र)
(Certificate of competency to carry out blasting of explosives in area not coming under the Mines Act, 1952)



संख्या / No.: E/SC/TN/30/2702(E152168)

प्रमाणपत्र प्राप्त करने वाले / Mr. M. Rajapandyan.

जिनका जन्म 10.06.1978 को हुआ था और No. 176/2, Muthalamman Kovil Street, Valayakulam, Madurai South T.K., MADURAI, Tamil Nadu - 625012 के निवासी हैं।
संबंधित मुख्य विस्फोटक नियंत्रक/चेयरमैन द्वारा तारीख 26/12/2023 को आयोजित शॉट फायर की परीक्षा तारीख को 26/12/2023 पूर्ण कर ली है और वह विस्फोटक अधिनियम, 1952 और उसके अधीन विरचित नियमों के उपबंधों के अधीन रहते हुए खान अधिनियम, 1952 की धारा 107 के अधीन आने वाले क्षेत्रों से अलग क्षेत्र में खान तथा संबंधित विस्फोटकों का उपयोग करते हुए विस्फोट प्रचालन करने के लिए प्राधिकृत है।

There is to certify that Mr. M. Rajapandyan, born on 10.06.1978, resident of No. 176/2, Muthalamman Kovil Street, Valayakulam, Madurai South T.K., MADURAI, Tamil Nadu - 625012 passed the shotfirer's examination held on 26/12/2023 conducted by Joint Chief Controller of Explosives, Chennai and is authorised to conduct blasting operations as mentioned below using explosives in areas other than mines coming under the purview of the Mines Act 1952 subject to the provisions of the Explosives Act, 1952 and the rules framed thereunder.

विस्फोट करने के प्राधिकृत वर्ग, प्रकार और प्रकार:

वर्ग: (ख), श्रेणी: सामान्य जमीन के ऊपर, जमीन के ऊपर ब्लास्टिंग ऑपरेशन

Authorised class, category and type of blasting

Class: (B), Category: General aboveground, All phases of aboveground blasting operations

नियम 107 का उप-नियम 107 का स्पष्टीकरण देखें / See explanation of sub-rule (1) of rule 107

यह प्रमाणपत्र 26/12/2023 (जारी करने की तारीख से पांच वर्षों तक) विधिवान्वय होगा।

This certificate shall remain valid till 26/12/2028 (five years from the date of issue)

यह प्रमाणपत्र, अधिनियम या उसके अधीन विरचित नियमों अथवा इस प्रमाणपत्र की शर्तों का कोई अधिकांश करने पर या यदि आवेदन द्वारा आवेदन प्रारूप में दी गई सूचना में कोई फर्क या विचलन होगा तो निलम्बित या अधिलक्षित कर दिया जाएगा।

This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application form.

स्थान / Place: चेन्नई / Chennai

दिनांक / Date: 26/12/2023

संयुक्त मुख्य विस्फोटक नियंत्रक / Joint Chief Controller of Explosives
दक्षिणवर्त, चेन्नई / South Circle, Chennai

पुनर्विधिवान्वयनकरण के लिए पुष्टिकरण / Endorsement for revalidation

पुनर्विधिवान्वयनकरण की तारीख
Date of Revalidation

समाप्ति की तिथि
Date of Expiry

अनुज्ञापित प्राधिकारी के हस्ताक्षर
Signature of licensing authority

जागरूकी चेतावनी: विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning: Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

P.A. श्रीरामचंद्रन

Digitally signed by Dr T L THANULINGAM
Reason: Licence No.: E/SC/TN/30/2702
Location: Chennai [E152168]
Date: 26-12-2023 15:01:51 PM

अनुज्ञापि प्ररूप एत. ई-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)

(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी भी भाग में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापि

Licence to possess, (G) for use explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापि सं. (Licence No.): E/SC/TN/22/660(E95317)

वार्षिक फीस रूपरेखा (Annual Fee Rs) 9300/-

1. Licence is hereby granted to

Mrs. LAVANYA.R (अभिभोगी / Occupier: Mrs. LAVANYA.R), D No 7, Gornathi Nagar, Sankarankoil, Town/Village - Sankarankoil, District-THIRUNELVELI, State-Tamil Nadu, Pincode - 627756.

Space for photograph of the licensee or occupier with signature

को अनुज्ञापि अनुदान की जाती है।

2. अनुज्ञापि धारी की प्रारिथति / Status of licensee: Partnership Firm

3. अनुज्ञापि निम्नलिखित प्रयोजनों के लिए विधिमाम्य है।

Licence is valid only for the following purpose

4. अनुज्ञापि विस्फोटकों के निम्नलिखित किस्में, प्रकार और मात्रा के लिए विधिमाम्य है।

Licence is valid for the following kinds and quantity of explosives: - (क) (a)

क्र. सं.	नाम और विवरण	वर्ग और प्रभाग	उप-प्रभाग	मात्रा किसी एक समय में
Sr No	Name and Description	Class & Division	Sub-division	Quantity at any one time
1	Nitrate Mixture	2.0	0	4000 Kg
2	Detonating Fuse	6.2	0	35000 Mtrs
3	Safety Fuse	6.1	0	10000 Mtrs
4	Electric and or Ordinary Detonator	6.3	0	44000 Nos

(ख) किसी एक कैलेंडर मस में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापि के लिए)

(b) Quantity of explosives to be purchased in a calendar month (applicable for licence under article 3(b) and (c))

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापि परिसर की पुष्टि होती है।

The licensed premises shall conform to the following drawing(s)

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/660(E95317)

दिनांक (Dated) 20/04/2023

19 times as above.

6. अनुज्ञापि परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:

Survey No. 1637/1, ग्राम (Town/Village): Ayyankollankandur

जिला (District): VIRUDHUNAGAR

दूरभाष (Phone)

पुलिस थाना (Police Station): Rajapalayam North

राज्य (State): Tamil Nadu

पिनकोड (Pincode): 626117

फैक्स (Fax)

7. अनुज्ञापि परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities

: One Explosives Room, a lobby and a Detonator Room

8. अनुज्ञापि समय-समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदान की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions additional conditions and the following Annexures

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, संरचना और अन्य विवरण दर्शित करते हुए।)

Drawings showing site, constructional and other details as stated in serial No. 5 above.

2. अनुज्ञापि प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापि की शर्तों और अतिरिक्त शर्तें।

Conditions and Additional Conditions of this licence signed by the licensing authority

3. दूरी प्ररूप DF-2 (Distance Form D15-2)

9. यह अनुज्ञापि तारीख 31 मार्च 2024 तक विधिमाम्य रहेगी। This licence shall remain valid till 31st day of March 2024.

यह अनुज्ञापि अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट रोट-मा के अधीन तथा उपबंधित इस अनुज्ञापि की शर्तों का अधिकमण करने या यदि अनुज्ञापि परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिलिखित की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Sec VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 06/07/2016

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives South Circle, Chennai

Transfers:

• Change in Licensee Name/Address/Status dated 16/02/2017

• Change in Licensee Name/Address/Status dated 20/04/2023

नवीनीकरण के पृष्ठोत्तर के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

30.06/2021

31.03.2026

Sd/-

Jt Chief Controller of Explosives, South Circle, Chennai

कानूनी चेतावनी: विस्फोटकों को गलत ढंग से चलाया या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning: Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

Digitally signed by P SEENIRAJ
Reason: Licence No.: E/SC/TN/22/660
Location: Chennai (E95317)
Date: 20-04-2023 16:20:48 PM

अनुमति प्रारूप एलई-7 (LICENCE FORM I.E-7)
(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 4 का अनुसूची 7 देखें)
(See article no 7 of Part I of Schedule IV of Explosives Rules, 2008)

अनुमति : सड़क वैन में विस्फोटकों के परिवहन के लिए
Licence to transport explosives in a road van



अनुमति संख्या Licence No. : E/SC/TN/252771(E/1647)
जारी करने का तिथि Issued On : 17/11/2023

1 अनुमति एतद्वारा जारी की जाती है

Licence is hereby granted to **R.L.WANYA, MESSRI BALAN EXPLOSIVES, (Occupier : R.L.WANYA)**
No.7, Gomathi Nagar 1st Street, Sankarankoyil Taluku, Tenkasi District,
District-TENKASI, State-Tamil Nadu, Pincode-627256

2 अनुमतिधारी की प्रकृति Status of licensee Partnership Firm

3 सड़क वैन की विवरण Particulars of the road van

पंजीकरण संख्या Registration No	TN 79 K 5598
वाहन का मॉडल एवं मॉडल Make and model of vehicle	MAHINDRA & MAHINDRA LTD
तटान सहित वजन Unladen weight	2090 Kg(s)
तटान सहित अधिकतम वजन Maximum laden weight	2990 Kg(s)
परिवहन के लिए अनुमति विस्फोटकों की अधिकतम मात्रा Maximum quantity of explosives permitted for transport	900 Kg(s)
इंजिन संख्या Engine No	TLN4D75638
चैसिस संख्या Chassis No	MA1ZW2TLKN6D44456
अन्य फिटिंग्स का विवरण Description of Other Fittings	
वाहन के लिए अनुमति विस्फोटकों की मात्रा Quantity of Explosives permitted to carry	900 Kg(s)

4 अनुमति परिसर निम्नलिखित अरेखण (अरेखणों) के अनुरूप होना चाहिए The licensed premises shall conform to the following drawing(s):

अरेखण संख्या Drawing No. : E/SC/TN/252771(E/1647) दिनांक dated : 17/11/2023

5 समय काल पर यथा संशोधित विस्फोटक अधिनियम, 1984 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुसूचियों के अधीन अनुमति प्रदान की जाती है।

The licence is granted subject to the provision of Explosives Act 1984 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures.

(क) अनुसूची 4 में वर्णित सड़क वैन का अरेखण (a) Drawings of the road van as stated in serial no 4 above

(ख) अनुमति प्रधिकारी द्वारा हस्ताक्षरित शर्तें (b) Conditions signed by the licensing authority

6 यह अनुमति तारीख 31 मार्च 2028 तक विधिमानी रहेगी This licence shall remain valid till 31st day of March 2028

यह अनुमति अधिनियम या उसके अधीन विहित नियमों या इस अनुमति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में संदर्भित, जहाँ भी लागू हो, या यदि अनुमति परिसर अरेखण या उसके संलग्न उपबन्धों में वर्णित गैर विवरण के अनुरूप नहीं पाए जाने पर निरस्त या प्रतिरुद्ध की जा सकती है।

This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under Conditions, wherever applicable referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक Date 17/11/2023

संयुक्त मुख्य विस्फोटक नियंत्रक Joint Chief Controller of Explosives
दक्षिणवर्त, चेन्नै South Circle, Chennai

अनुमति के नवीनीकरण हेतु पृष्ठकम Endorsement for renewal of licence

नवीनीकरण की तिथि Date of Renewal	वैधता समाप्ति की तिथि Date of Expiry	अनुमति प्रधिकारी के हस्ताक्षर Signature of licensing authority

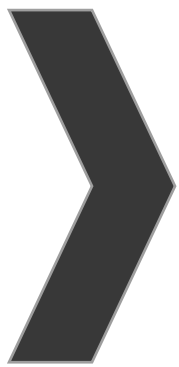
वैधानिक चेतावनी : विस्फोटकों का तापरवाही से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डित अपराध होगा।

Cautionary Warnings : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

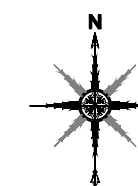
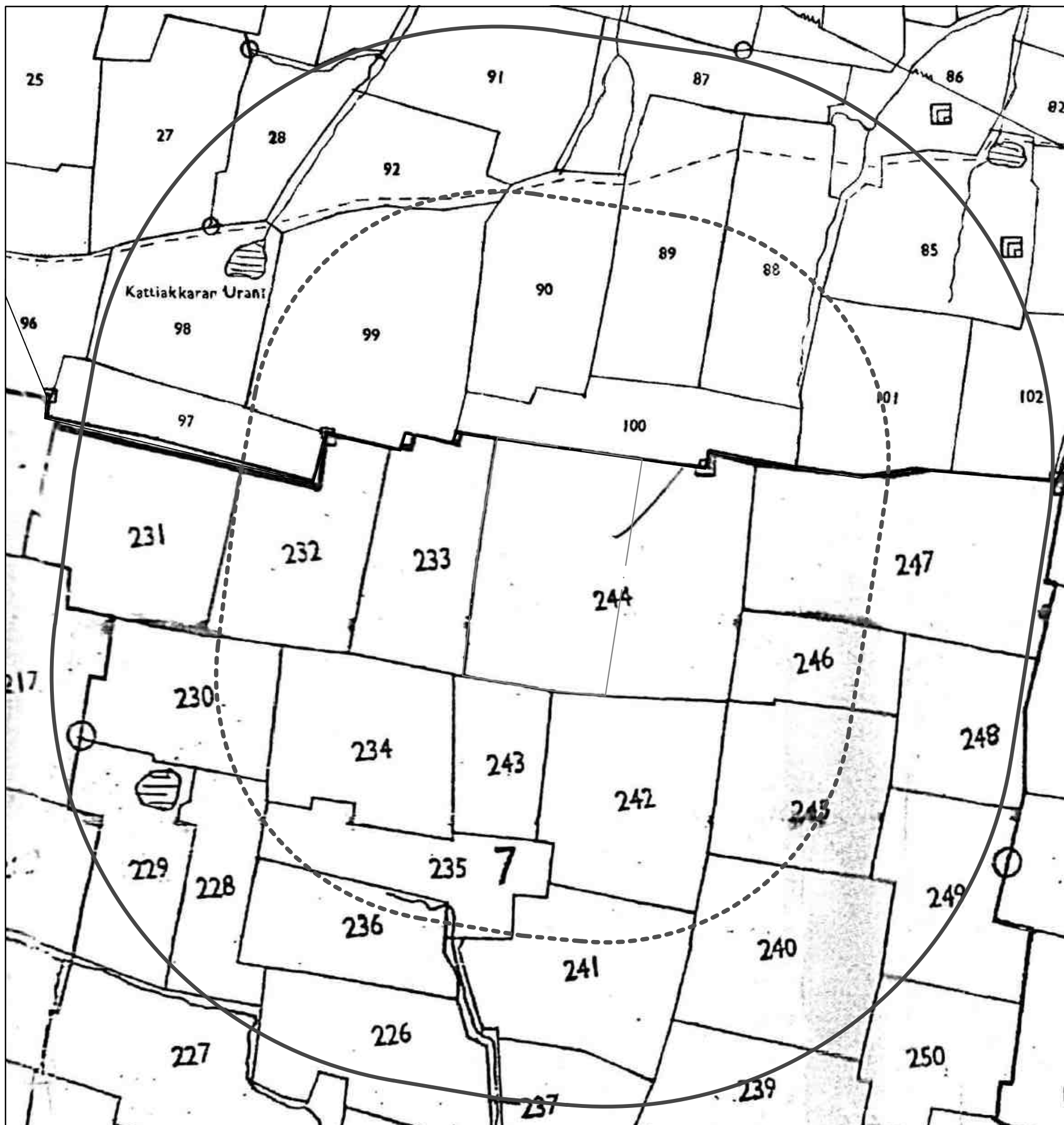
Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

P.K. Sankarankoyil

Digitally signed by G T L THANJUNGAM
Reason: Licence No. : E/SC/TN/252771
Location Chennai (E151647)
Date 17-11-2023 09:48 51 AM



ANNEXURE-11



APPLICANT:

THIRU.P.K.SANKAR RAJ,
S/o.PERIYA KENGAIYA,
NO.4/328, CHANDRAGIRIPURAM,
PAVALI,
VIRUDHUNAGAR DISTRICT.

QUARRY APPLIED LEASE AREA:

S.F.NO : 244/1,
EXTENT : 4.61.50 Ha,
VILLAGE : PAVALI,
TALUK : VIRUDHUNAGAR,
DISTRICT : VIRUDHUNAGAR.

INDEX

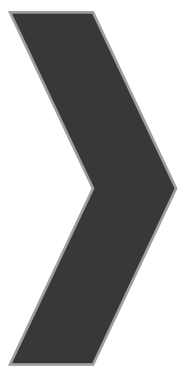
Q. L. A. AREA :

TOPO SHEET NO : 58 G/ 14

LATITUDE : 09°35'43.22"N to 09°35'52.58"N

LONGITUDE : 77°54'08.06"E to 77°54'15.19"E





ANNEXURE-12

அனுப்புநர் :-

தேவநாதம் ஐசிரியர்
2௩. சூ. தொ. பள்ளி
சந்திரகிரியூரம்
விடுதலார்க்கு சேகம்
விடுதலார்க்கு மாவட்டம்

பெறுநர் :-

P. K. சங்கரநாத்
த/ம பெரிய வெங்கையா
கிராமம் மற்றும் உடைகன் வெளி
4/32 சந்திரகிரியூரம்
மாவட்டம் பஞ்சாயத்து
விடுதலார்க்கு - 626103

பெறும் :- சி. என். ஆர். FUND-ன் பள்ளி தேவநாதம்
செய்து தருதல் - சார்பாக

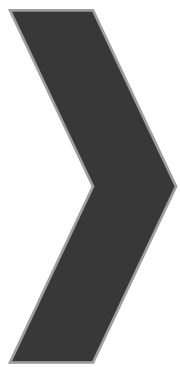
உணக்கம் தயார்.

சங்கர பள்ளி அமைக்கத் தன் மனம் சந்தையாக
உள்ளது. அதற்குத் தனக்குத் தீர்வு செய்து, கன்பகித்து அள்ளது
சிமிண்ட் துறைகளாக உடனடித் தருமாடியும், ஒரு பிசுரா
தேவநாதம் தான் அறையும் சங்கரநாத் அடியங்கி உடனடி
செய்து தருமாடி மனவாண்டன் அகட்டுத் தன் திறன்
நன்றி உணக்கம் !

உடம் : சந்திரகிரியூரம்
நாள் : 06.11.2024

செ. 6/11/24

தலைவரவர்களே,
அ. ச. தொ. பள்ளி
நம்பிக்கை-026.
தேவநாதம் தான்



ANNEXURE-13



தமிழ்நாடு TAMILNADU
P.K. SANKAR Raj
VIRUDHUNAGAR

27. 11. 2024
EK 076857
M. J. J.

ய. ரோஜி (எ) தமிழ்நாடு. மு.தா.க.
உரிமம் எண்: 6206-14/91
கச்சேரி வீதி, ஓமலூர்
கோவை மாவட்டம்

AFFIDAVIT TO SEIAA - TAMIL NADU

I, Thiru.P.K.Sankar Raj, S/o. Periya Kengaiya, residing at no. 4/328, Chandragiripuram, Pavali, Virudhunagar District.,I have applying for Environmental Clearance to SEIAA - Tamil Nadu for my proposed Rough Stone Quarry lease over an extent of 4.61.50 Ha located at the S.F.No. 244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State, do hereby solemnly declare and sincerely affirm that;

1. There are no protected areas notified under the Wildlife (Protection) Act, 1972 (NBWL) is located within a 10 km radius from the proposed quarry site.
2. There are no critically polluted areas as notified by the central pollution control board constituted under Water (Prevention and Control of Pollution) Act 1974.
3. My proposal for Corporate Environment Responsibility (CER) activities is given as follows;

P.K. Sankar Raj



PROPOSED CER ACTIVITIES	PROJECT COST (INR)	CER COST 2.0% OF PROJECT COST (INR)
To implement various social development activities for the nearby Government school	1,19,89,000/-	2,23,780/-
Revised CER budget allotted	5,00,000/-	

I assure you that, I will complete the above proposed Corporate Environment Responsibility (CER) activities before the commencement of the quarrying operations.

5. Revised EMP Cost

S. No	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment			
1	Haul Road Maintenance	0.46	0.46
2	Water Sprinkler Arrangement	8.00	1.00
3	AAQ Monitoring	0.00	0.50
4	Control Blasting (Muffle blasting)	0.00	0.10
5	Wet Drilling	0.75	0.08
6	No overloading of trucks/tippers/tractors	0.00	0.05
7	Stone carrying trucks will be covered by tarpaulin	0.00	0.23
8	Enforcing speed limits of 20 km/hr within ML area	0.25	0.00
9	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.08
10	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	11.08
11	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		9.96	13.76
Noise Environment			
12	Provision for Portable blaster shed	0.50	00.04
13	NONEL Blasting will be practiced to control Ground vibration and fly rocks	0.00	23.41
Sub-Total (B)		0.50	23.45
Water Environment			
14	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0.46	0.05
15	Installation of Bio toilet (Portable)	2.00	0.20
16	Sump Maintenance	0.00	0.20

P.K. Jaisingh



17	Dewatering Cost	0.00	2.00
Sub-Total (C)		2.46	2.45
Implementation of EC, Mining Plan & DGMS Condition			
18	Waste management (Spent Oil, Grease etc.,)	0.35	0.23
19	Environmental Parameters Display Board	0.20	0.02
20	Issue of PPE's	1.36	0.34
21	IME & PME Checkup	0.00	0.34
22	First Aid facility Provision	0.00	0.18
23	Signage & boards for safety precautions	0.10	0.02
24	Barbed Wire Fencing to quarry area	9.23	0.10
25	Parking yard Management	2.31	0.10
26	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
27	Implementation as per Mining Plan and ensure safe quarry working (Statutory)	0.00	10.80
28	Slope Stability Analysis	5.00	0.50
Sub-Total (D)		18.85	12.68
Green Belt			
29	Plantation inside ML area (3000 Nos.)	2.00	0.30
30	Plantation outside ML area (1000 Nos.)	0.30	0.03
Sub-Total (E)		2.30	0.33
Additional Key EMP Expenses			
31	Constructing Rainwater Harvesting Structure	5.00	0.10
32	Mine Closure Plan	0.50	0.00
33	Environmental Awareness Programme	5.00	0.00
34	District Green Fund	11.97	0.00
Sub-Total (F)		101.09	0.10
Grant Total (A+B+C+D+E+F)		135.16	52.17
Total EMP Cost for 10 years is 798.94 lakhs			
i.e., Rs. 135.16 Lakhs of Capital Cost + Rs. 663.78 Lakhs of Recurring cost (For 10 Years)			

6. Details of quarries located within a 500m radius from the applied mine

lease area:

Existing quarries.

P.K. Singh



Sl. No	Quarry Details	Taluk & Village	S.F.No.& Extent (Hect)	Proceedings No.& Lease period
1.	Thiru.P.K.Muthuraj, S/o.Periakengaiah Nayakkar, 4/32, Chandrakiripuram, Parvali Post, Virthunagar	Virudhunagar Taluk, And Seeniyapuram	88/5& 3.13.5 (Hect)	KV1/809/2018 Dated 08.08.2020 26.08.2020 to 25.08.2025
2.	Thiru.R.Ramar S/o.Raju 4/560, Chinnavallikulam Village Aruppukottai	Virudhunagar Taluk, And Seeniyapuram Pavali village	97/2B 232/1 232/3 & 2.58.50 (Hect)	KV1/411/2018 Dated 07.02.2019 23.02.2019 to 22.02.2024

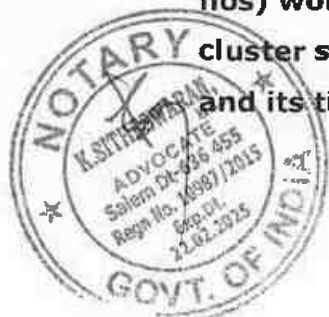
II. Abandoned quarries.

Sl.No	Name of the owner	Village S.F.no	Extent Hect	Lease period	Remarks
1.	Nil				

III. Proposed quarries.

Sl.No	Name of the Owner	Village & S.F.No.	Extent Hect	
1.	Thiru.P.K.SankarRaj, S/o. Periya Kengaiya, no. 4/328, Chandragiripuram, Pavali, Virudhunagar District.	Pavali Village, Virudhunagar Taluk 244/1	4,61.5 0	KV1/683/ 2024 Dated 04.10.2024

The total lease within the 500m radius (Proposed + Existing) (1 nos + 2 nos) works out to 10.33.50 Ha including this lease area. As such, in the cluster situation, ToR is applicable under the EIA notification of 2006 and its time-to-time amendment.



P.K. Sankar Raj

7. There will be no hindrance/disturbance due to the proposed quarrying activities to the people living nearby my proposed quarry site.

8. There are no approved habitations within a 300m radius from the periphery of my proposed quarry lease.

9. I assure you that the greenbelt will be developed and maintained before commencing the quarrying operations as proposed in the EC application.

10. I assure you that the required life insurance policy for the employees engaged in the quarrying operations will be taken without fail.

11. The existing main road connecting the quarry road will be maintained in good condition and it will be utilized for the mineral transportation.

12. I assure you that I will not engage any child for labor in the quarrying operations and I am aware that engaging child labor is punishable under the law.

13. Personnel Protective Equipment (PPE) will be provided to all the employees engaged in the quarrying operations.

14. No permanent structures, such as temples, etc., are located within a 300 meter radius of the periphery of our quarry.

15. I will erect the wire fence with barbed wires all around the periphery of the quarry lease before the commencement of mining activities.

16. The mining operations will be carried out in a systematic and scientific manner by employing a qualified statutory person as per the requirement of the Mines Act, Mines Rules, and other Guidelines issued by Govt.

17. I will inform DGMS before the commencement of mining activities.

18. To the best of our knowledge, I ensure to do the social and environmental commitments as mentioned in the mining plan.



Notary Sign & Seal

K. SITHESWARAN, BE.,
Advocate & Notary Public
Opp. BDO Office, Omaiur (Tk),
SALEM (Dt)-636 455.
Regn. No: 10987/2015.
Cell: 94435 16211

Lessee Sign & Seal

P.K. Sankar Raj
P.K. Sankar Raj