

**DRAFT EIA / EMP FOR
PROPOSED ROUGH STONE QUARRY
CATEGORY B1 - CLUSTER (CLUSTER AREA – 6.76.50 Ha.)**

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

Approved TOR Lr.No.SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023 Dated: 07.08.2023

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	378/2B2, 378/2C, 380/4A, 380/4B2 (Part) and 381/2A (Part)
VILLAGE	SERUGUDI
TALUK	MUSIRI
DISTRICT	TIRUCHIRAPPALLI
EXTENT	3.19.0 Ha
PROPOSED PRODUCTION FOR FIVE YEARS	4,09,762 M³ 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 – 6.76.50 Ha
Baseline Monitoring Period – October to December 2023

APPLICANT

**THIRU.R. RABEENDRAN
S/o. RENGARAJAN
NO.452/54.E2, V.O.C NAGAR MAIN ROAD,
LALGUDI TALUK, TIRUCHIRAPPALLI DISTRICT**

ORGANIZATION

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

April -2024



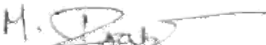
AMENDMENT PAGE

SL	Page No.	Section / Clause / Para / Line (as Applicable)	Date of Amendment	Amendment Made	Reasons of amendment	Signature of Person Authorizing Amendment
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ACKNOWLEDGEMENT

M/s. Global Mining Solutions, Salem is very much thankful to Thiru.R. Rabeendran, (Lessee) for the confidence and trust placed on our organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone Quarry over an cluster area of 6.76.50 Ha at Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu and formulating the Environmental Management Plan (EMP). We also gratefully acknowledge the cooperation and assistance provided by concerned government authorities for collection of secondary information for the preparation of EIA/EMP report. Our sincere thanks to the local people of Serugudi 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 & CC, OM no. J – 11013/41/2006-IA.II (I) dated 5th October 2011, we hereby give our undertaking for owning the content and information in the EIA/EMP report submitted for EC of the proposed Rough Stone Quarry over a cluster area of 6.76.50 Ha at Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.

For: M/s. Global Mining Solutions



Name: Manikandan Manickam

EIA Coordinator – Mining of Minerals


UNDERTAKING


In line with MOEF&CC OM no. J-11013/41/2006-IA.II (1) dated 4th Aug 2009 and its amendments, we hereby confirm that all Terms of Reference issued by Ministry of Environment, Forest and Climate Change vide Letter No: SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023, dated: 07.08.2023 for preparation of EIA/EMP report for the proposed Stone Quarry over a cluster area of 6.76.50 Ha at Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu, for the production of 4,09,762 Cu.m of Rough Stone 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

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OF INDIA**
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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 –

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		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/ACC/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

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ANNEXURE - VII

Declaration by Experts contributing to the proposed Rough Stone Quarry over a cluster area of 6.76.50 Ha at Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.

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

EIA Coordinator Name: Manikandan Manickam

Signature & Date

Period of involvement: October 2023 to December 2023.


Contact information:

M/s Global Mining Solutions

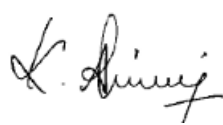





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Kottamettupatty, Omalur,

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. <u>Period: October 2023 to December 2023.</u>	

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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 2023 to December 2023.</u>	
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October 2023 to December 2023.</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 2023 to December 2023.</u>	
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: October 2023 to December 2023.</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 2023 to December 2023.</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 2023 to December 2023.</u>	

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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 2023 to December 2023.</u>	R. Dhams
9	LU	Dhanalakshmi Ramanathan	Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment. <u>Period: October 2023 to December 2023.</u>	R. Dhams
10	RH	S.V. Prashant	Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker. <u>Period: October 2023 to December 2023.</u>	S. Prashant
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. <u>Period: October 2023 to December 2023.</u>	Shisupal Sing
12	GEO	Valliappan Meyyappan	Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area. <u>Period: October 2023 to December 2023.</u>	Valliappan Meyyappan

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List of Annexures

Annexure - 1	Precise Area Communication Letter
Annexure - 2	Mine Plan Approval Letter and approved Book with annexures
Annexure - 3	Existing Quarry - Lease Deed Copy
Annexure - 4	Details of other leases within 500m radius
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Annexure - 7	Land Document
Annexure - 8	The Copy of Blasting Agreement

COMPLIANCE TO **TERMS OF REFERENCE**

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S.No	TOR Points	Reply	Page No
A. ToR in Addition to Standard ToR			
1	The PP shall submit (i) a predictive model showing the blast-induced ground vibration level to be maintained as per the DGMS provisions for the buildings / structures / habitations located within a radial distance of 500 m and (ii) the controlled blast design for the proposed quarry thereby minimizing the impacts due to blasting operation.	The PP will use controlled blasting techniques with Nonel to ensure that dust generation, noise, and vibration levels remain within the prescribed limits. A predictive model will be incorporated in the final EIA/EMP Report.	-
2	The PP shall analyze the cumulative pollution load including the crusher on the surrounding environment and the data shall be furnished in EIA report.	The details will be incorporated in the Final EIA/EMP Report.	-
3	The PP shall study and explore the technical feasibility & economic implications of installing conveyor belt system such as In-Pit Crushing Conveying (IPCC) Technology in place of the conventional 'Truck' transport system of ROM to the crusher location for ensuring environmental sustainability.	Conveyor option has been examined /worked out. In view of the terrain, it is not found to be feasible. However, in future conveyor transportation option shall be reviewed for implementation.	-
4	The PP shall submit a 'Conceptual Mining Plan and section (layout)' indicating the accessible ramp from the surface to the pit bottom keeping the benches intact for the dimension as stipulated in the Approved Mining Plan.	Conceptual Plan and its section drawing are given in Figure 2.9.	91
B. ANNEXURE I			
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:		-

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	<ul style="list-style-type: none"> 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. 	All the documents will be attached with Final EIA/EMP Report.	-
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.	A letter received from VAO is 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	The Enumerations survey to locate the structures within 300m radius from the proposed quarry site are detailed in section 3.5 of Chapter 3.	96

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	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 I km of the proposed quarry.	Hydro-geological study to evaluate the impact of proposed mining activity on the groundwater table, Open wells, and water bodies such as rivers, tanks, canals, ponds etc., located nearby the proposed mining area 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.	The details are given in section 3.7.7 of Chapter 3.	128												
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 provided in 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 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	<p>As per approved Mining plan, the existing pit dimension are below,</p> <table border="1"> <thead> <tr> <th>Pit No</th> <th>Length (m)</th> <th>Width (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>60</td> <td>19</td> <td>6 BGL</td> </tr> <tr> <td>II</td> <td>66</td> <td>36</td> <td>8 BGL</td> </tr> </tbody> </table> <p>The slope stability study will be conducted once the depth reach 20 m BGL. The depth proposed for this quarry is 46 m BGL. However, measures to ensure Slope stability is given in section 7.6 of Chapter 7.</p>	Pit No	Length (m)	Width (m)	Depth (m)	I	60	19	6 BGL	II	66	36	8 BGL	-
Pit No	Length (m)	Width (m)	Depth (m)												
I	60	19	6 BGL												
II	66	36	8 BGL												

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	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 slope stability study will be conducted once the depth reach 20 m BGL. The depth proposed for this quarry is 46 m BGL. However, measures to ensure Slope stability is given in section 7.6 of Chapter 7.	-
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, IIII 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.	The control measures for reducing ground vibration due to blasting is provided under section 4.4.5.4 of Chapter 4.	171
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 already operated this proposed Mine Lease area from 18.06.2012 to 17.06.2015 vide lease deed No. 13206 dated: 18.04.2012 and the copy of the same is enclosed as Annexure-3.	
12	If the proponent has already carried out the mining activity in the proposed	The area applied for quarry lease is already mined out by	

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	mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	the same lessee for the period from 18.06.2012 to 17.06.2015.	
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	<p>Quantity of minerals mined out.</p> <ul style="list-style-type: none"> • Highest production achieved in any one year • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 		
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	<p>All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, as shown in below Figures.</p> <p>Project coordinates superimposed in satellite imagery and given as Figure No – 3.6 in Chapter – 3.</p> <p>The geology and geomorphology map are provided in Figure No.3.17, 3.18, Chapter 3.</p>	104,135 to 139

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		The Soil map is provided under Figure No. 3.19 a, Chapter-3. The 10km Radius Index plan showing buffer zone is given in Figure No.3.7 in Chapter – 3.	
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	The work is in progress.	-
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,	Photographs of the site are provided in Figure 2.6 of Chapter-2. As per Precise Order condition No. 2, PP have provided safety distance of 10m & 7.5 m for Government land and patta land respectively. Green belt will be developed over an area of 0.62 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.	The geological reserves is 14,32,575 m ³ of rough stone and 31,835 m ³ of topsoil. The mineable reserves is 4,09,762 m ³ of rough stone. The proposed total production quantity is 4,09,762 m ³ upto a depth of 46 m below ground level for the period of five years. Details are given in Chapter 2.	81
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	Complied. Please refer Fig. 10.1	208

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	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.	Hydro-geological study to evaluate the impact of proposed mining activity on the groundwater table, Open wells, and water bodies such as rivers, tanks, canals, ponds etc., located nearby the proposed mining area will be incorporated in the Final EIA/EMP Report.	-
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.	95
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,	cumulative impact study due to mining operations are given in Section 7.4 of Chapter 7 and Chapter 4.	146 & 193

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	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.	Rain water harvesting Plan is given in section 4.3.4 of chapter 4. Water balance is shown in Figure 4.1.	157 & 158
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.	79, 102 & 127
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 top soil 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	Not Applicable No proximity to Critically polluted areas.	-

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	operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TMCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.		
27	Description of water conservation 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 4.3.4 of Chapter 4.	158
28	Impact on local transport infrastructure due to the Project should be indicated.	The entire mined out mineral will be transported to own crusher located at 200 m in western side of the project area.	-
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.	A detailed tree survey was carried out within 300 m radius and the results have been discussed in Section 3.7.7 of Chapter 3.	128

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30	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. The budget details for the progressive mine closure plan are shown in Table 2.12.	89, 90 & 200
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Accepted. It will be done.	-
32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native 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 4.6.3 under Chapter 4.	177
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	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	

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	coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	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.	191
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.	187
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 4.8 of Chapter 4.	180
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 3.7.14, 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.	139

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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 3.7.14, 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.	139
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.	202
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.	The area applied for quarry lease is already mined out by the same lessee for the period from 18.06.2012 to 17.06.2015. No mining activity has been carried out after the quarry period.	
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.	A detailed environment management plan has been prepared following the suggestion made by SEAC, as shown in Chapter 10. The sworn affidavit stating to abide the	

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		EMP for the entire life of mine will be incorporated 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	
Annexure 'B'			
Cluster Management Committee			
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	There are one existing quarry and this proposed project are located 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	Agreed. Details of the Operation plan for cluster mining operations will be submitted once we get environmental clearance for this proposed project in the cluster area.	-

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	quarry in the form of route map and network.		
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	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.	
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Environmental policy for the cluster will be framed by the cluster management committee and the policy will be in accordance with EPA Act, 1986 and its amendments, guidelines by MoEF&CC/SEIAA and other regulatory bodies. This policy will be displayed in the quarry.	-
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Agreed. It will be complied as mentioned in the Point No.4	-
8	The committee shall furnish the Emergency Management plan within the cluster'	Agreed. It will be complied as mentioned in the Point No.4	-
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Agreed. It will be complied as mentioned in the Point No.4	-
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Agreed. It will be complied as mentioned in the Point No.4	-

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11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Agreed. It will be complied as mentioned in the Point No.4	-
Impact study of mines			
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following		
a	Soil health & soil biological, physical land chemical features.	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 & 4.6 of Chapter 4 respectively.	124, 151 & 172
b	Climate change leading to Droughts, Floods etc.	No significant impact on climate change due to this project. This proposed mining activity is a small scale mining extent of 3.19.0 Ha. of patta land. The surrounding environment is already subjected to mining activities and based on the past weather data its inferred that there is no much of change in the climate data of the region and the district profile has no records or past history of climate change leading to droughts and floods. The minor impact to climate change will be controlled by	146

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		<p>adopting suitable mitigation measures.</p> <p>The anticipated impact and its mitigation measures for various environmental attributes are detailed in chapter 4.</p>	
c	<p>Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.</p>	<p>Considering that the quantum of production is less, only 2 nos of excavator, 4 tippers will be engaged. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 310 number of plants will be planted inside the mine lease and 1285 nos will be planted outside the mine lease area.</p>	-
d	<p>Possibilities of water contamination and impact on aquatic ecosystem health.</p>	<p>The total water requirement is 7.0 KLD. It will be outsourced from the nearby villages. So no impact in the project area due to water usage.</p> <p>The wastewater generation in the form of runoff water during rainy season will be collected in the bottom quarry through proper drainage pattern and the collected water will be used for plantation and dust suppression during dry season. However,</p>	154

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		there is no wastewater discharge from this quarry is being anticipated. So, possibilities of water contamination and impact on aquatic ecosystem health is not envisaged.	
e	Agriculture, Forestry & Traditional practices.	There are no Agriculture, forest area and traditional practices within the project area. However, there are some agricultural land around the project site. It may be affected due to the quarry operation as such dust particles sedimentation in the agricultural land. It will be controlled at the source level by proper dust suppression as such wet drilling, controlled blasting and water sprinkling on the project roads and project surrounding roads. As per Air Quality Modelling, the impact of the air quality limited to 400m radius. So, there is no impact for the Agriculture, Forestry & Traditional practices located within 10km radius.	-
f	Hydrothermal/Geothermal effect due to destruction in the Environment.	The proposed quarry operation is Opencast Semi-Mechanized operation with drilling, blasting, excavation, loading and transportation. So the effect of Hydrothermal/Geothermal is not envisaged.	-

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g	Bio-geochemical processes and its foot prints including environmental stress.	This is a simple mining operation, so bio-geochemical processes are not envisaged.	-
h	Sediment geochemistry in the surface streams.	Nearby water bodies: Pond - 170m (SW) Kuttai 1 - 190m (SE) Seasonal odai - 295m (SW) Kulam 1 - 1.4km (S) Kulam 2 - 2.1km (W) Kulam 3 - 3.7km (S) Odai - 3.0km (NW) Rudrajkombai Ar - 7.0km (NE) Cauvery River - 8.7km (SW) Due to mining operation there may be minimum impact to the said water bodies due to dust sedimentation. It will be controlled by wet drilling, water sprinkling and plantation.	-
Agriculture & Agrobiodiversity			
13	impacts on surrounding agricultural fields around the proposed mining Area.	Agreed. It is described in the point no. 12 (e) of this ToR Compliance Annexure-B	-
14	impacts 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 & 4.4.6 of Chapter 4 respectively. There is no schedule I species of animals observed within study area as per Wildlife Protection	124, 151 & 172

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		Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.	
15	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	There is no standing trees or vegetation within the mine lease area.	-
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	The ecological details have been provided in Section 3.7.7 under Chapter 3 and measures have been provided in Section 4.6 under Chapter 4.	128 & 172
17	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.	146
18	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 4.1 under Chapter 4.	147
Forests			
19	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife	Forest in buffer Zone: Mavilippatti R F – 1.3km (E) Talamalai R F – 5.5km (W) Viramachampatti R F – 9.5km (NE)	172

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		<p>The anticipated impact and its mitigation measures for biological environment are detailed in section 4.6 of Chapter 4.</p> <p>The project proponent shall do barbed wire fencing work and develop a green belt around the lease area to prevent wildlife from entering the site.</p>	
20	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 4.6 under Chapter 4.	172
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Not Applicable.	-
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no protected areas, National Parks, environmentally sensitive areas Corridors and Wildlife pathways near project site. The list of RF details within 10 km radius are given below, Mavilippatti R F – 1.3km (E) Talamalai R F – 5.5km (W) Viramachampatti R F – 9.5km (NE)	-
Water Environment			
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies	Two rivers are passing in the buffer zone of the study area. (Rudrajkombai Ar – 7.0km (NE) and Cauvery River – 8.7km	

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	such as rivers, tanks, canals, ponds etc. within I km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	(SW)). A detailed hydrogeological report will be included in the final EIA/EMP report.	
24	Erosion Control measures.	Garland drainage structures will be constructed around the lease area to control the erosion. Erosion control measures are detailed in section 4.2.3 of Chapter 4.	151
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas	The matter has been discussed under Chapter 4.	154
26	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.	-
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment by the activities.	The impacts of the proposed project on the surrounding environment have been discussed in Chapter 4.	154
28	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts	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	128

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		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.	
29	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 under Chapter 4.	151
30	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 4.3 of Chapter 4. The mining area consists of hard compact rock, hence no major water seepage is expected from the periphery. The ultimate pit depth of mining is 46 m bgl. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.	154
Energy			
31	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the Energy shall be furnished	The measures taken to control noise, air, water, and dust have been given under Chapter 4.	146
Climate Change			
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including	Only the best equipment will be used, and it will be properly and regularly maintained. Regular vehicular emission tests will be	-

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	development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	conducted on the transport vehicles to ensure minimal carbon emissions. To further reduce carbon emissions, a good greenbelt plan has been planned.	
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.		-
Mine Closure Plan			
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	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. The budget details for the progressive mine closure plan are shown in Table 2.12.	89 & 90
EMP			
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 10.	204
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The capital cost of Rs. 22.19 Lakhs and the recurring cost of Rs. 140.74 Lakhs for five years have been allocated under the EMP budget. The breakup of the same is given in Table 10.2 of Chapter 10.	210
Risk Assessment			
37	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.	187

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Disaster Management Plan			
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid,/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster Management plan are detailed in section 7.3, Chapter 7.	191
Others			
39	The project Proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	The VAO certificate of 300 m radius is attached in the Annexure 5.	-
40	As per the MoEF& cc office memorandum F.No.z2-6512017-tA.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.	-
41	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated	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	-

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	during mining may be investigated and reported.	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.	
C. Standard ToR			
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	The PP has already operated this proposed Mine Lease area from 18.06.2012 to 17.06.2015 vide lease deed No. 13206 dated: 18.04.2012 and the copy of the same is enclosed as Annexure-3.	-
2	A copy of the document in support of the fact that the proponent is the rightful lessee of the mine should be given.	This proposed project area is classified as Patta land registered in the name of the Applicant, vide patta No.303. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7.	-
3	All documents including approved mine plan, EIA and public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	Noted & agreed. All documents including approved mine plan, EIA and Public Hearing are compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and is in the name of the lessee.	-
4	All corner coordinates of the mine lease area, superimposed on a High -	Project area is superimposed on Satellite imagery is enclosed in	104, 136 to 139

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	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).	Figure No.3.6. Project area boundary coordinates superimposed on Toposheet & Surface Features around the project area covering 10km radius – Figure No. 3.7. Geology map of the project area covering 10km radius - Figure No. 3.17. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3.18.	
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 following map in 1:50,000 Scale: Geology map of the project area covering 10km radius – Figure No. 3.17. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3.18.	136 to 139
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	(a) Precise Area Communication: The Project Proponent has obtained Precise Area Communication from the Assistant Director, Department of Geology and Mining, Tiruchirappalli, vide RC.NO. 427/kanimam/2022dated 17.05.2023. The letter copy enclosed as Annexure – 1. (b) Mining Plan Approval: The project proponent has prepared mining plan under rule L9(I),41 &42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been	-

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		approved by the Assistant Director, Dept. of Geology & Mining, Tiruchirappalli vide RC.NO.427/Mines/2022 dated 02.06.2023. The approval letter along with approved plan is enclosed as Annexure - 2.	
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.	The proponent will frame a well-planned environmental policy. Its details are provided under Section 10.1, Chapter-10. Monitoring Mechanism is detailed under Section .10.3.	204 - 208
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 are detailed under section 7.2, Chapter-7. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.4.5.5, Chapter-4.	171 & 187

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9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	Noted & Agreed The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.	-
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary. national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.7.6.2 Of Chapter-3. The land use pattern at present and at the end of the quarrying period has been provided in Table 2.4, Chapter-2. The Conceptual plan of mine lease area is shown in Figure No- 2.9.	127, 79 & 91
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 utilized. Hence, there is no external overburden dump involved.	-
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	There is no Forest Land involved in the proposed project area. The proposed project area is a patta land. Approved Mining Plan is enclosed in Annexure - 2.	-

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	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.	Not Applicable. The proposed project area does not involve any Forest Land.	-
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act,2006 should be indicated.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.	-
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Mavilippatti R F - 1.3km – E Talamalai R F - 5.5km – W Viramachampatti R F - 9.5km – NE	-
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	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.	-

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	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 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 detailed study of flora and fauna composition in the core and buffer zone of the project has been made. The details are furnished in section 3.7.7.	128
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	Not Applicable	-

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	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).	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 shifting 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 3.19.0 Ha is a patta land. There is no population within the ML area. Hence, the question of R& R does not arise.	-
22	one season (non-monsoon) [i.e. March-May (Summer Season); October-	Baseline Data were collected for One Season (Post Monsoon	95

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	<p>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.</p>	<p>Season) October - December 2023 as per CPCB Notification and MoEF & CC Guidelines and Detailed in Chapter - 3.</p>	
23	<p>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.</p>	<p>Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view and Detailed in Section 4.3.5.3.</p> <p>Air Quality Modelling For Cluster are detailed in section 7.4.2.1 of Chapter 7.</p>	<p>162 to 167</p> <p>195</p>

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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 7.0 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.	157
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 4.3.4. The total water requirement for the project will be 7.0 KLD comprising Drinking and domestic 2.0 KLD, Dust suppression 3.5 KLD, Greenbelt 1.5 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose.	157 & 158

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		The water balance diagram for the same is shown in Figure No 4.1.					
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.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Section 4.3.	154				
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-ali4 shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 46 m bgl and water table is found at a depth of 55-58 m BGL.	-				
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Not applicable	-				
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A	<table border="1"> <tr> <td>Site Elevation above MSL</td> <td>143 m from MSL</td> </tr> <tr> <td>Ultimate Depth</td> <td>46 m bgl</td> </tr> </table>	Site Elevation above MSL	143 m from MSL	Ultimate Depth	46 m bgl	-
Site Elevation above MSL	143 m from MSL						
Ultimate Depth	46 m bgl						

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

	schematic diagram may also be provided for the same.	Ground water	55 & 58 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. 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.	Greenbelt Development Plan & Recommended Species proposed for Greenbelt Development are detailed in Section 4.6.3.	0.62 hectares of land are allotted for greenbelt development.	177
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	This is a small quarry and the production is very less. 4 Nos. of 5T/10T tippers will be used for transport. The trips will be minimum. Hence no major impact on transport is expected		-

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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.	93
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.	89
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Details of occupational health and safety aspects are given under the Section 4.8 & Section 10.4.	180 & 209
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,	202

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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.	Environmental Management plan details are given in Chapter 10.	204
39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	During public hearing process, the opinions and demands of the people will be noted. The replies and commitment made by the proponent along with time bound action plan wherever applicable will be provided in Final EIA/EMP report.	-
40	Details of litigation pending against the project, if any, with direction /order passed 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. 1,00,14,000/- CER Cost is Rs.5.0/- lakhs EMP Cost	210

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		Capital Cost is Rs. 22.19/- Lakhs Recurring Cost is Rs. 140.74/- for five 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.	191
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.	202
44			
A	Executive Summary of the EIA/EMP Report	Yes, Enclosed	-
B	All documents to be properly referenced with index and continuous page numbering.	All the documents are properly referenced with index and continuous page numbering.	-
C	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Yes, Complied	-
D	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/ NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project,	Baseline monitoring results are detailed in Chapter 3. Original Baseline monitoring reports will be made available during appraisal of the project.	95
E	Where the documents provided are in a language other than English, an English translation should be provided.	Yes, complied	-
F	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, complied	-

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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- I 1013/41/2006-IA.11 0) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & Agreed	-
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.	Noted & Agreed	-
I	As per the circular no. J-I I0I I161812010-1A.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance the existing operations of the project, should be obtained from the Regional office of Ministry of Environment, Forest and Climate Change, as may be applicable.	Yes, Complied	-
J	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any,	Surface Plan and Geological Plan - Figure No. 2.3.	75

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	clearly showing the land features of the adjoining area.		
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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

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

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

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

This proposal is towards obtaining environmental clearance for Rough Stone Quarry located at survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu, for production capacity of 4,09,762 m³ of Rough Stone and 15,788 m³ of Top soil for 5 years. The mining plan has prepared and same was approved by Assistant Director, Dept. of Geology & Mining, Tiruchirappalli vide Rc.No.427/2022/Mines dated 02.06.2023. The PP has already operated this proposed Mine Lease area from 18.06.2012 to 17.06.2015 vide lease deed No. 13206 dated: 18.04.2012 and the copy of the same is enclosed as Annexure-3.

This proposed project comes under cluster classification, based on the Assistant Director, Geology & Mining, Tiruchirappalli letter, vide Rc.No.427/2022/Mines dated 05.06.2023. So this project has to obtain Terms of Reference for conducting EIA studies. One abandoned and one existing quarries found within the 500m radius of this project site. Total Cluster area without expired lease (1 Proposed + 1 Existing) is 6.76.5 Ha including this lease area are detailed in below Table.

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

Table – 1.1 Cluster Mines Details			
Sl. No	Extent	Proponent	Status of lease
1	3.95.5 Ha	Thiru.D.Dharmalingam S.F.No:411/1 (Part)	Abandoned
2	3.57.5 Ha	Thiru.D.Krishnamoorthy S.F.Nos:365/1, 369/1 and 370/1,	Existing
3	3.19.0 Ha	Thiru.R.Rabeendran, S.F.Nos: 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part)	Proposed
Total extent is 6.76.5 Ha including this proposed project and excluding Abandoned quarry.			

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/434467/2023. The ToR proposal was placed in 394th SEAC meeting, dt 21.07.2023. Then ToR has been issued by the SEIAA vide Lr.No.SEIAA-TN/F.No.10166/SEAC/TOR-1517/2023 dated 07.08.2023 to prepare the draft EIA report as per the recommended ToR for conducting Public hearing and obtaining Environmental Clearance from the SEIAA.

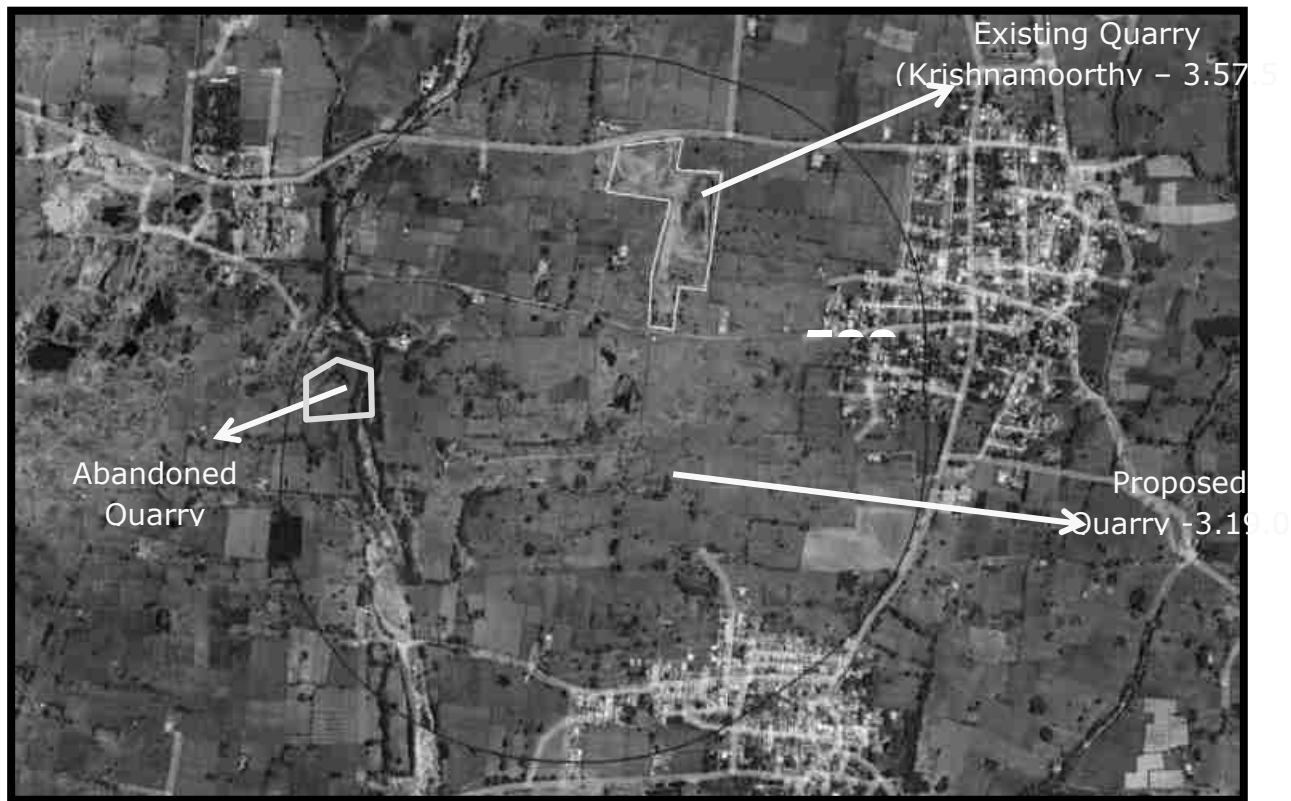


Figure 1.1 Satellite Image showing cluster quarries

1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1 IDENTIFICATION OF PROJECT

The applicant Thiru. R. Rabeendran, proposed to continue mining activity in the existing quarry for the period of five years in patta land over an area of 3.19.0 Ha located in survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2 (Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu. The existing quarry was operated by the proponent for the period of 18.06.2012 to 17.06.2015 vide lease deed No. 13206 dated: 18.04.2012.

Table -1.2 Project Identification

Name of the Project	Rough Stone Quarry of Thiru.R. Rabeendran
	S.F No.378/2B2, 378/2C, 380/4A, 380/4B2 (Part) and 381/2A (Part)
Location of the Project	Village: Serugudi

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	Taluk: Musiri
	District: Tiruchirappalli
	State: Tamil Nadu
Extent	3.19.0 Ha.
Type of Land	Patta Land registered in the name of the Applicant, vide patta No.303. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -8.

1.2.2 IDENTIFICATION OF PROJECT PROPONENT

Table -1.3- Details of Project PropONENT

Name of the Project PropONENT	Thiru.R. Rabeendran
Communication address	S/o. Rengarajan No.452/54.E2, V.O.C Nagar main road, Lalgudi Taluk, Tiruchirappalli District, Pin code -621703.
Mobile No.	9843622300

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 NATURE AND SIZE OF THE PROJECT

The quarrying operation is proposed to be carried out by Opencast semi Mechanized Mining Method by jack hammer drilling, slurry blasting by forming 5.0 m bench height and 5.0 m bench width. Excavator and tippers are proposed for Loading and transportation. Geological Resources are estimated as 14,32,575 m³ of Rough Stone, 31,835 m³ of Topsoil formation whereas Mineable reserves are estimated as 4,09,762 m³ of Rough Stone, 15,788m³ of Topsoil formation up to the depth of 46m below ground level. The production shall be 4,09,762 m³ of Rough Stone, 15,788 m³ of Topsoil formation for five years up to the depth of 46m bgl. The above said reserves and productions are as per Approved mining plan.

1.3.2 NATURE OF THE PROJECT

Sector	1(a) Non-Coal Mining
Type	Proposed to continue mining activity in the existing quarry.
Category	B1 (Cluster Situation)
Mineral	Minor mineral of Rough Stone

1.3.3 LOCATION OF PROJECT

The proposed Quarry lease area is situated at S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2 (Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu. The area lies in the north latitude of **11°03'00.35"N to 11°03'10.89"N** and eastern longitude of **78°24'38.33"E to 78°24'43.99"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.

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

1.5 REGULATORY COMPLIANCES

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

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

1.5.1PRESENT LEGAL STATUS

Table 1.4 – Present Legal Status

Sr. No	Description	Issuing Authority	Status	Letter Number	Date	Reference
1	Precise Area Communication	Assistant Director, Department of Geology and Mining, Tiruchirappalli	Received	Rc.No.427/2022/Kanimam	17.05.2023	Annexure - 1
2	Mine Plan Approval	Assistant Director, Dept. of Geology & Mining, Tiruchirappalli	Approved	Rc.No.427/2022/Mines	02.06.2023	Annexure - 2
3	District Survey Report	Collector, Dept. of Geology and Mining, Tiruchirappalli	Authenticated	As per S.O.3611(E),dated 25.07.2018	25.07.2018	-
4	Details of other leases within	Assistant Director, Dept. of Geology & Mining, Tiruchirappalli	Obtained	Rc.No.427/2022/Mines	05.06.2023	Annexure - 3

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	500m radius					
5	NOC for features within 500 m radius	VAO, Serugudi village	Obtained	-	12.06.2023	Annexure - 4
6	Earlier Lease Deed	Collector, Tiruchirappalli	Obtained	deed No. 13206	18.06.2012 to 17.06.2015	Annexure - 5

1.5.2 SCREENING

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

1.5.3 SCOPE OF THE STUDY

In line with the prescribed Terms of Reference (TOR), the area comprising 10 km radius around the proposed mine lease boundary is considered as the study area. The EIA/EMP report has been prepared following the generic structure specified in the EIA Notification 2006. The detailed studies have been conducted as per prescribed Standard TOR issued by SEIAA, Tamil Nadu vide Lr.No.SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023, dated: 07.08.2023. The point wise compliance for the ToR has been incorporated in this EIA/EMP report.

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

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

The scope of study broadly covered as below,

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

1.6 NEED AND JUSTIFICATION OF THE PROJECT

- Proposed mining project will fulfill the local market requirement for real estate and infrastructure industry. This project will also provide employment to local people helping them earn livelihood.

- Employment generated consequent to the mining activity in the project will be benefit local and rural population and will have multiplier effects on local economy.
- The Project will give tremendous boosts to the local and regional economy benefiting the population.
- The social benefits arising out of this proposal can be expressed in terms of increase in the standards of living of local population, educational opportunities, training and development of skills etc.

1.7 STRUCTURE OF THE REPORT

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

1. Introduction

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

2. Project Description

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

3. Description of the Environment

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

4. Anticipated Environmental Impacts & Mitigation Measures

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

5. Analysis of Alternatives (Site And Technology)

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

6. Environmental Monitoring Program

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

7. Additional Studies

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

8. Project Benefits

This chapter presents the benefits from this project

9. Environmental Cost Benefit Analysis

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

10. Environmental Management Plan

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

11. Summary and Conclusion

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

12. Disclosure of Consultant

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

2.0 PROJECT DESCRIPTION

2.1 TYPE OF THE PROJECT

The proposed activity is the extraction of Rough Stone by open cast semi mechanized mining method and proposed to produce 4,09,762 m³ of Rough Stone, 15,788 m³ of Topsoil formation for five years up to the depth of 46m bgl.

2.2 LOCATION OF THE PROJECT

The proposed quarry project is located in survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu as shown in Figure 2.1. The area is represented by Survey of India Toposheet No. 58 I/08. The lease boundary with Geo Co-ordinates is shown in Figure 2.2. The area lies in the northern latitude of **11°03'00.35"N to 11°03'10.89"N** and eastern longitude of **78°24'38.33"E to 78°24'43.99"E**. Latitude and Longitude of all boundary pillars are given in Table 2.1 and the satellite imagery of the project site is shown in Figure 2.2.

Table 2.1 Boundary Coordinates of the Project

Corners	Co- ordinates	
	Latitude	Longitude
1	11° 03' 00.42"N	78° 24' 38.33"E
2	11° 03' 03.38"N	78° 24' 38.66"E
3	11° 03' 03.38"N	78° 24' 39.98"E
4	11° 03' 04.64"N	78° 24' 40.34"E
5	11° 03' 07.81"N	78° 24' 40.21"E
6	11° 03' 07.79"N	78° 24' 40.61"E
7	11° 03' 10.89"N	78° 24' 40.77"E
8	11° 03' 10.63"N	78° 24' 41.30"E
9	11° 03' 09.87"N	78° 24' 43.85"E
10	11° 03' 07.70"N	78° 24' 43.75"E
11	11° 03' 04.33"N	78° 24' 43.32"E
12	11° 03' 04.37"N	78° 24' 43.99"E
13	11° 03' 02.97"N	78° 24' 43.91"E
14	11° 03' 00.35"N	78° 24' 40.25"E

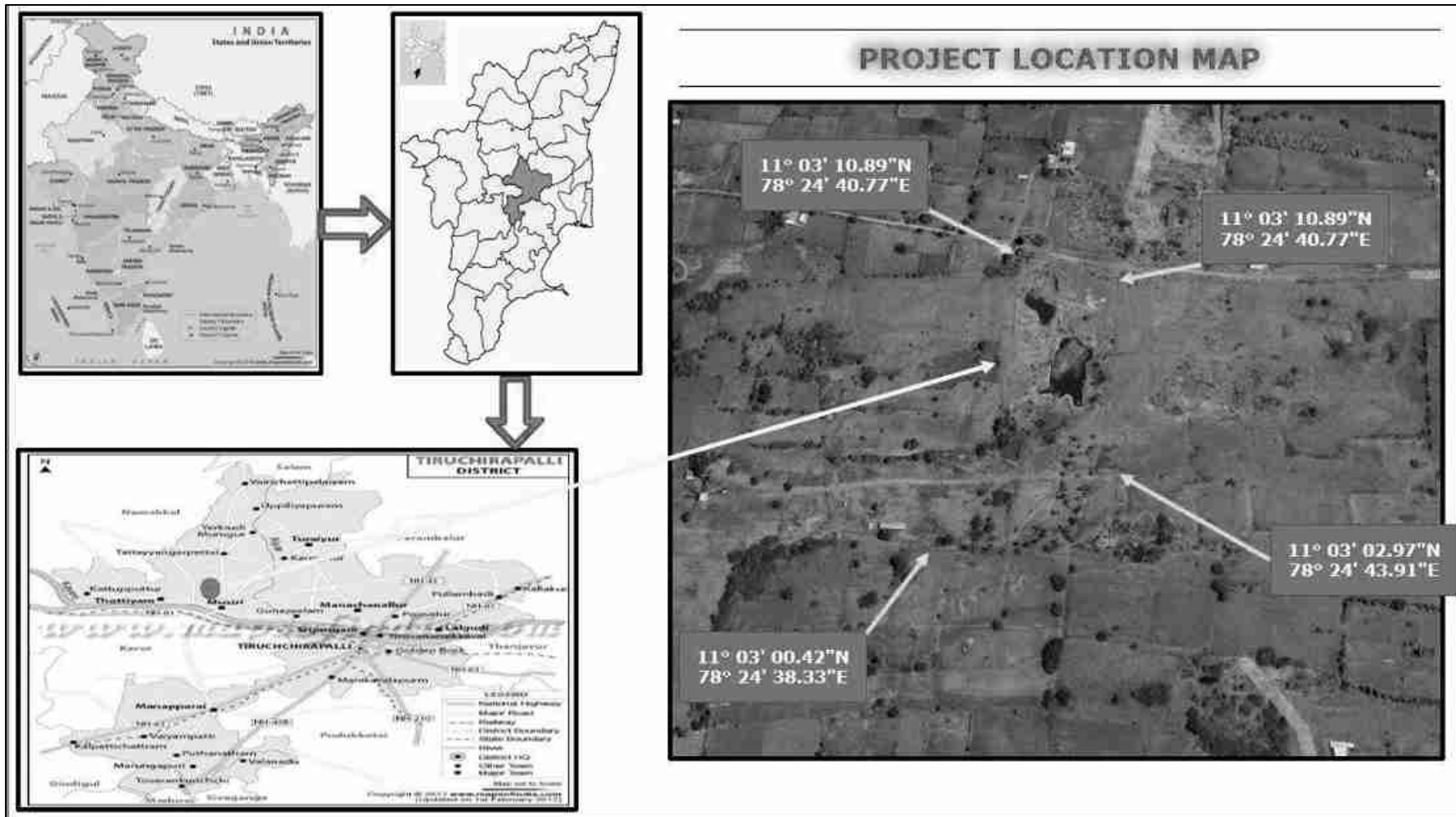


Figure 2.1 Location Map

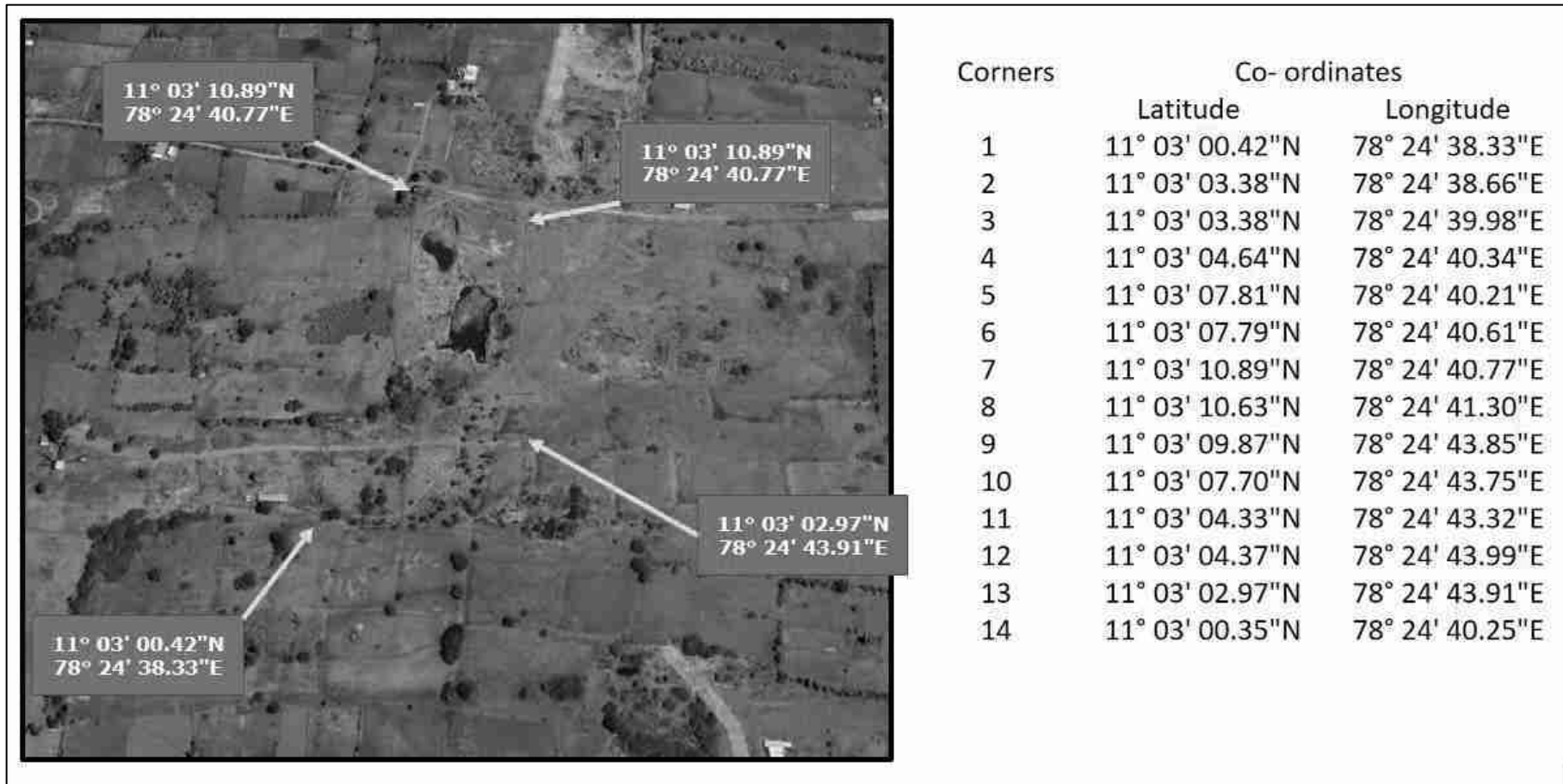


Figure 2.2 Google Map showing corners coordinates

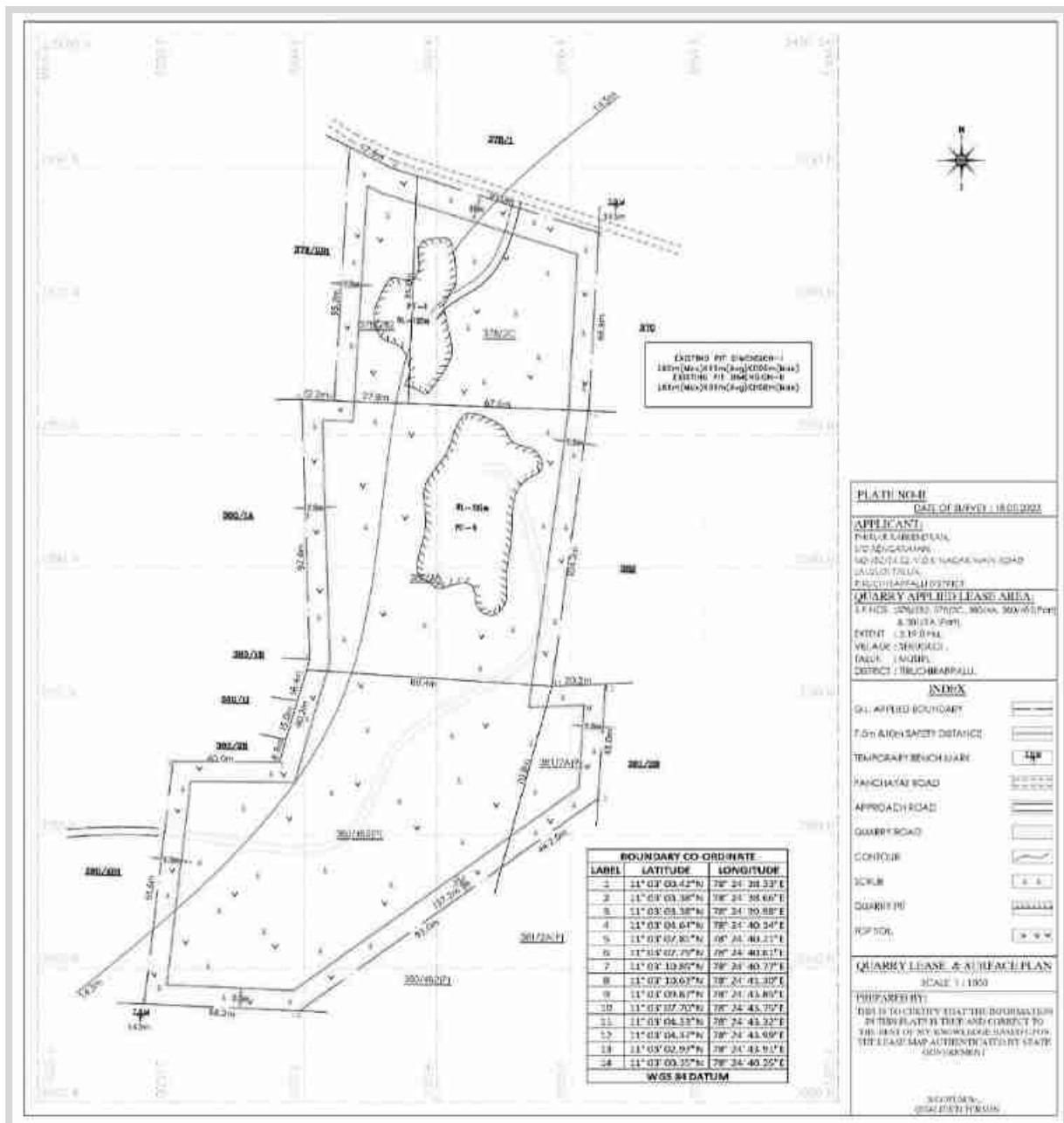


Figure 2.3 Lease Plan

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

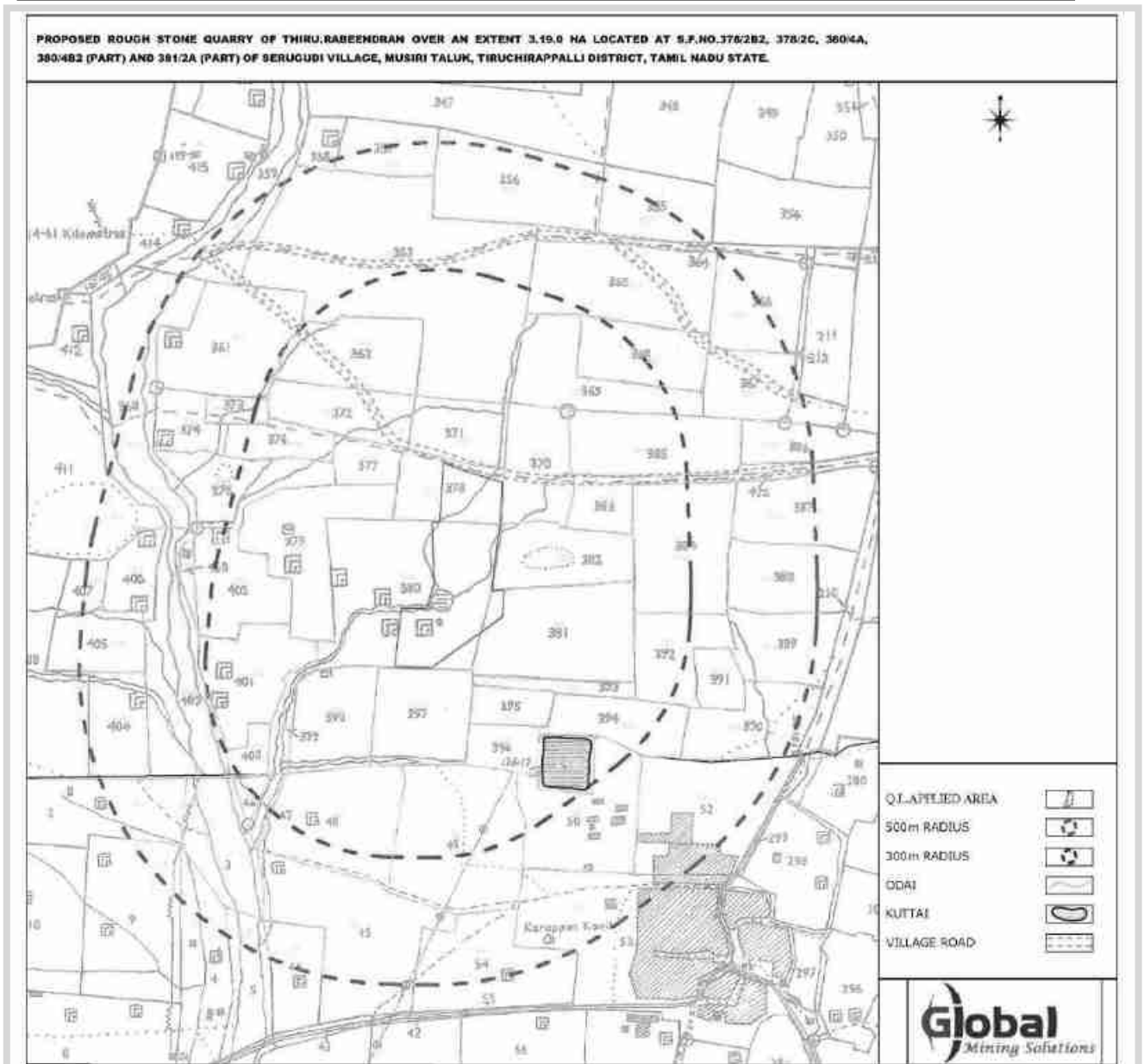


Figure 2.4 VILLAGE MAP SHOWING 300m AND 500m RADIUS OF THE PROJECT AREA

2.2.1 LEASE DETAILS

This proposed project area is classified as Patta land registered in the name of the Applicant, vide patta No.303. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7. & does not fall within 10 km radius of any Eco – sensitive zone, Wild life Sanctuary, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves. The M.L area details are presented in below Table.

Table 2.2 Mine Lease Area and its Ownership

Location	S.F. No	Area in Ha	Patta no	Remarks
Serugudi Village Musiri Taluk Tiruchirappalli District	378/2B2	0.23.5	303	It is a Patta land in the name of the Applicant, vide Patta No.303. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7
	378/2C	0.52.0		
	380/4A	1.00.0		
	380/4B2 (Part)	1.29.0		
	381/2A (Part)	0.14.5		
Total		3.19.0		

Site Connectivity

- ✦ The area is accessible from Serugudi – Pappapatti village road in northern side of the project site.
- ✦ The Nearest Railway line is Karur – Tiruchirappalli line which is about 11.5Km on southern side of the area.
- ✦ The National Highway (NH-381B) Namakkal– Musiri about 8.9km on Southern side of the area.
- ✦ The State Highway (SH-161) Thathaiyangarpet – Namakkal is about 8.5km on Northeastern side of the area.

Table 2.3 Site Connectivity

Nearest Roadway	The National Highway (NH-381B) Namakkal– Musiri - 8.9km – (S). The State Highway (SH-161) Thathaiyangarpet – Namakkal - 8.5km (NE).
Nearest Village	Serugudi – 0.5 km (NE) Papapatti – 1.2 Km (NW) Soorampatti – 0.5 km (SE) Appananallur – 3.1 km (SW)
Nearest Railway	Karur – Tiruchirappalli line which is about 11.5Km on southern side of the area.
Nearest Airport	Tiruchirappalli – 45.0 Km (SE)

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Figure 2.5 Approachability Map



Figure 2.6 Site Photographs

2.3 LAND USE PATTERN OF THE PROJECT AREA

The entire project site is Patta land registered in the name of the Applicant, vide patta No.303. The copy of the Patta, Adangal and A-Register are enclosed as Annexure -7. The land use pattern of the mine lease area as of today and conceptual stage given in Table No. 2.4.

Table 2.4 Land use pattern of the Project area

Description	Present Area in Ha.	Area in use during the quarrying period (Ha)
Quarrying pit	0.35.0	2.54.0
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Greenbelt	0.01.0	0.62.0
Unutilized	2.82.0	Nil
Total	3.19.0	3.19.0

During operation & in the Post mining stage, the Safety Zone of 0.62.0 Ha., will be planted and maintained with 330 numbers of saplings. In the conceptual stage, the quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

2.4 TOPOGRAPHY AND DRAINAGE

The area applied for quarry lease is exhibits almost plain topography covered by top soil. The massive Charnockite formation is noticed below 1 m (Avg) top soil and sloping towards Southeastern side of the area, the altitude of the area is above 143 m (maximum) from MSL. No major river is found nearby the applied area.

2.5 GEOLOGY

2.5.1 REGIONAL GEOLOGY

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

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Lithology	Group	Age
Alluvium, Soil and Morrum		Recent
Ferrogeneous sandstone		Tertiary
Marl and Marly Limestone		Upper Cretaceous
Clastic bedded limestone and Marl		
Massive pink coral limestone Grey Shale		Lower Cretaceous
Conglomerate and Sandstone		Upper Gondwana
-----Unconformity-----		
Syenite Complex Ultra-basic complex(s)	Alkali Group	Proterozoic
Mixed gneisses, amphibolites, pyroxenites, calc-gneisses, Charnockite, Garnetiferous Gneiss and Crystalline rocks	Charnockite Group	Archaean

2.5.2 LOCAL GEOLOGY

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

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

Age	Rock Formation
Recent	Topsoil
Unconformity	
Archaean	Dolerite dyke
	Charnockite
	Peninsular
	Gneissic complex and Calc Gneiss

2.6 SIZE AND MAGNITUDE OF THE OPERATION

The proposed activity is the extraction of Rough Stone by open cast semi mechanized mining method over an extent of 3.19.0 Ha and to produce 4,09,762 m³ of Rough Stone, 15,788 m³ of Topsoil formation for five years up to the depth of 46m bgl. The details of geological and mineable reserves in the lease area have been provided below in the subsequent sub section.

2.7 RESOURCES AND RESERVES

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

2.7.1 GEOLOGICAL RESOURCES

The quarrying is restricted up to a depth of 46m Below ground level only. Availability of Resources is given below.

Table 2.5 Available Geological Resources

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Topsoil in m³	Geological Resources of Rough stone in m³
XY-AB	98	160	1	15680	15680	
	98	160	45	705600		705600
Total					15680	705600
XY-CD	80	101	1	8080	8080	
	80	101	45	363600		363600
Total					8080	363600
XY-EF	85	95	1	8075	8075	
	85	95	45	363375		363375
Total					8075	363375
Grand Total					31835	1432575

Topsoil Formation : 31,835m³

The Geological Resources of Rough stone : 14,32,575m³

2.7.2 ALREADY EXCAVATED

The area has been quarried in earlier operation the existing pit dimension are given below.

Table 2.6 – Already Excavated Area

Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	60	19	6m below ground level
II	66	36	8m below ground level

2.7.3 MINEABLE RESERVES

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

Table 2.7 – Available Mineable Reserves

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Topsoil in m ³	Mineable Reserve of Rough stone in m ³
XY-AB	I	91	144	1	13104	13104	-
	II	89	140	5	62300	-	62300
	III	82	127	5	52070	-	52070
	IV	76	114	5	43320	-	43320
	V	70	101	5	35350	-	35350
	VI	63	88	5	27720	-	27720
	VII	57	75	5	21375	-	21375
	VIII	50	62	5	15500	-	15500
	IX	37	49	5	9065	-	9065
	X	24	36	5	4320	-	4320
Total						13104	271020
XY-CD	I	29	52	1	1508	1508	-
	II	29	48	5	6960	-	6960
	III	31	36	2	2232	-	2232
	III	80	69	3	16560	-	16560
	IV	80	55	5	22000	-	22000
	V	80	42	5	16800	-	16800
	VI	80	29	5	11600	-	11600
	VII	79	16	5	6320	-	6320
Total						1508	82472
XY-EF	I	24	49	1	1176	1176	-
	II	23	47	5	5405	-	5405
	III	66	63	5	20790	-	20790
	IV	59	50	5	14750	-	14750
	V	53	37	5	9805	-	9805
	VI	46	24	5	5520	-	5520
Total						1176	56270
Grand Total						15788	409762

The available mineable reserve is computed as 4,09,762 m³ of Rough stone and 15,788 m³ of Topsoil formation upto a depth of 46m below ground level only.

2.8 PROCESS DESCRIPTION AND TECHNOLOGY

2.8.1 PROCESS DESCRIPTON

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

- Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy buyers.
- Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.
- The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. The process diagram is provided in Figure 2.7. The Geological and production plan and cross section for the 5 years period and conceptual plan and conceptual cross section is given in Figure No. 2.9

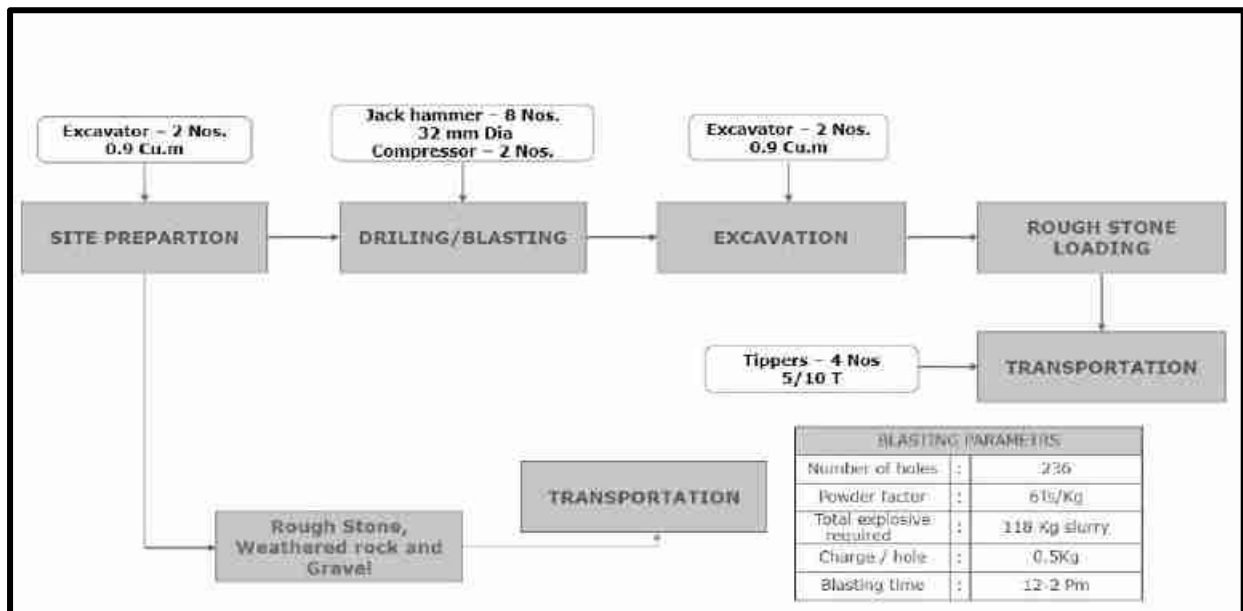


Figure 2.7 Process Flow Diagram

Table 2.8 – Machinery Details

S.NO	Name of the Equipment	Capacity	Requirement
1	Jack hammer	32 mm Dia	8
2	Compressor	-	2
3	Excavator	0.9 Cu.m	2
4	Tippers	5 / 10 T	4

2.8.2 DRILLING AND BLASTING PARAMETERS

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

Diameter of the hole	32-36 mm
Spacing	0.6m
Depth	1 to 1.5 m
Burden of hole	0.6m
Pattern of hole	Zigzag
Inclination of hole	70 ⁰ from horizontal
Number of holes	236
Powder factor	6Ts/Kg of Explosives
Total explosive required	118 Kg slurry Explosives
Charge / hole	0.5Kg
Blasting time	12-2 Pm

2.8.3 TYPE OF EXPLOSIVE

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

2.8.4 STORAGE OF EXPLOSIVES

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

2.8.5 PRODUCTION SCHEDULE

The year wise production schedule upto lease period of 5 years (Depth -46m BGL) is given below, the year wise production is given in Figure 2.8.

Table 2.9 Year wise Production Plan

Year	Pit No. (s)	Over burden	ROM ore/ Mineral	Topsoil in m ³	Mineable reserve of rough stone in m ³
I	1	Nil	99903	15788	84115
II	1	Nil	82202	0	82202
III	1	Nil	80070	0	80070
IV	1	Nil	81755	0	81755
V	1	Nil	81620	0	81620
Grand Total				15788	409762

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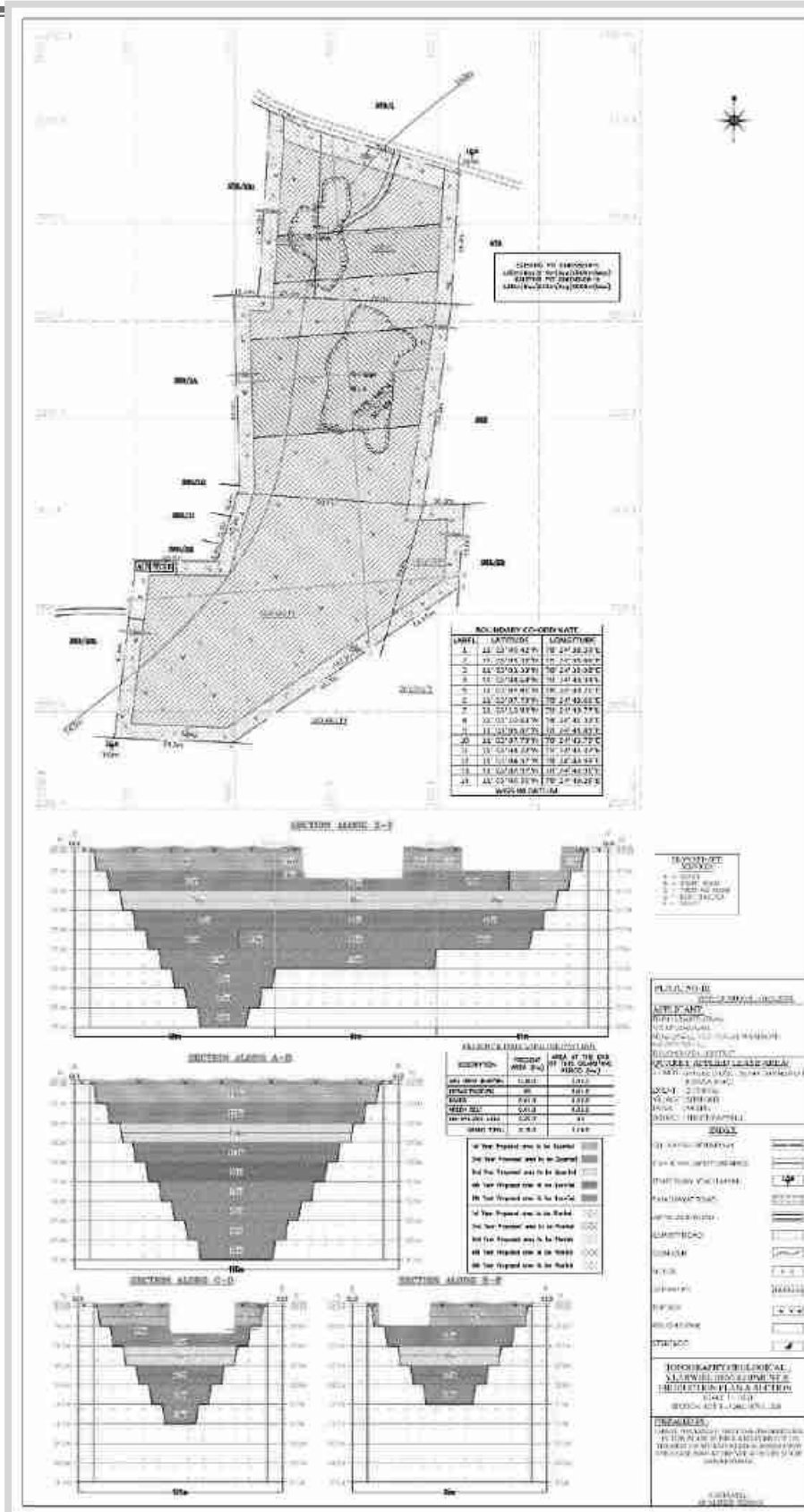


Figure 2.8 Production Plan and Cross Section

2.8.6 DISPOSAL OF WASTE

The overburden in the form of topsoil, after excavation topsoil will be preserved along the boundary barrier and utilized for afforestation purpose.

2.9 CRUSHER PLANT, WASHING PLANT AND WATER RECYCLING UNIT

The PP has proposed to install Crusher and washing plant with water recycling unit of capacity 250 TPH in the existing crusher plant and the crusher plant is located at 205 m in SW direction from this Quarry. The approval status is in progress and the equipment details are described below.

S No	EQUIPMENTS DETAILS	Qty	Capacity
1	Grizzly Feeder	1	350 TPH
2	Primary Reduction – Primary Jaw crusher 250 TPH	1	250 TPH
3	Pan Feeder	3	300 TPH
4	Secondary Reduction - Hydraulic Cone Crusher 220 TPH	1	220 TPH
5	Third Stage of Reduction – VSI (Vertical Shaft Impact Crusher) 200 TPH	1	200 TPH
6	Vibrating Screen 4 Deck	1	500 TPH
7	Dual Slope Screen 4 Deck	1	500 TPH
8	Pro wash _ Produces washed sand	1	150 TPH
9	Water Recycling Unit-Treatment Plant	1	250 TPH
10	Belt Conveyors 1000 – 500 mm	1 Lot	

Crusher Plant Manufacturing Process:

Primary Reduction – Primary Jaw crusher 250 TPH

The stones extracted from the quarry by blasting shall reduce into sizes below 600mm by crawler mounted excavators and jack hammers. The reduced sizes below 600 mm carted by Dump Trucks shall feed into primary Jaw crusher for

further reducing the size of the stones below 180 mm. The output material coming from the above Primary crusher shall pass through a conveyor and dumped in a stockpile.

Secondary Reduction - Hydraulic Cone Crusher 220 TPH

Materials from stockpile shall pass through a conveyor and feed into the above said Hydraulic Cone crusher through a vibratory feeder. The output materials coming from the cone crusher shall pass through a conveyor and feed into a vibrating screen. In the vibrating screen the materials will get segregate into varied sizes and pass through designated conveyors and accumulate in assigned/different product stockpiles. The materials retained by the screen shall redirect into the cone crusher for further reduction of size as desired. The desired products from the Secondary cone crusher are mainly WMM - Wet Mix Macadam, GSB - Granular Subbase and aggregates of Size 40mm and crusher dust.

The sizes below 30mm shall pass through a conveyor and feed into the Third Stage Reduction unit called VSI - Vertical Shaft Impactor.

Third Stage of Reduction - VSI (Vertical Shaft Impact Crusher) 200 TPH

In the third stage the materials are feed into VSI, there the size of the stones are further reduced and shaped into desired product of sizes 20mm, 12mm, 6mm and as sand particles of size ranging from 0 - 4.25mm. The sand product that segregated from the secondary vibratory screen shall pass over to sand washing unit.

M Sand and P Sand Production

The materials of size ranging from 0 -4.25mm shall pass through a conveyor and feed into a sand processing unit called as Pro wash unit, there the feed material shall mix with water at high velocity in Hydro cyclone unit and passes through high frequency vibrating screen. The undesired sand particles of size below 150 microns will be separated from the sand and washed away into the water treatment unit called Thickner unit. Simultaneously, the desired final product M sand & P Sand separated by a sand classifier and dewatering unit shall pass through conveyors and accumulate in the product stockpile.

2.10 CONCEPTUAL MINING PLAN / FINAL MINE CLOSURE PLAN

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

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

Table 2.10 - Ultimate Pit Dimension

Pit	Length in m (Max)	Width in m (Max.)	Depth in m (Max.)
I	246	103	46

Table 2.11 Post mining Land use Pattern

Description	Present Area in Ha.	Area in use during the quarrying period (Ha)
Quarrying pit	0.35.0	2.54.0
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Greenbelt	0.01.0	0.62.0
Unutilized	2.82.0	Nil
Total	3.19.0	3.19.0

- At the end of life of mine, the excavated mine pit / void of 2.54.0 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 (0.62.0 Ha.) will be developed along the safety barrier and top benches and 0.03 ha are approach road and Infrastructure.
- The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

Table 2.12 Mine Closure Budget

Activity	Capital Cost in Lakhs	Recurring Cost/Annum in Lakhs
Plantation inside ML area (310 Nos)	0.62	0.09
Plantation outside ML area (1285 Nos)q	3.85	0.38
Barbed Wire Fencing to quarry area	6.38	0.10
Total	10.85	0.57

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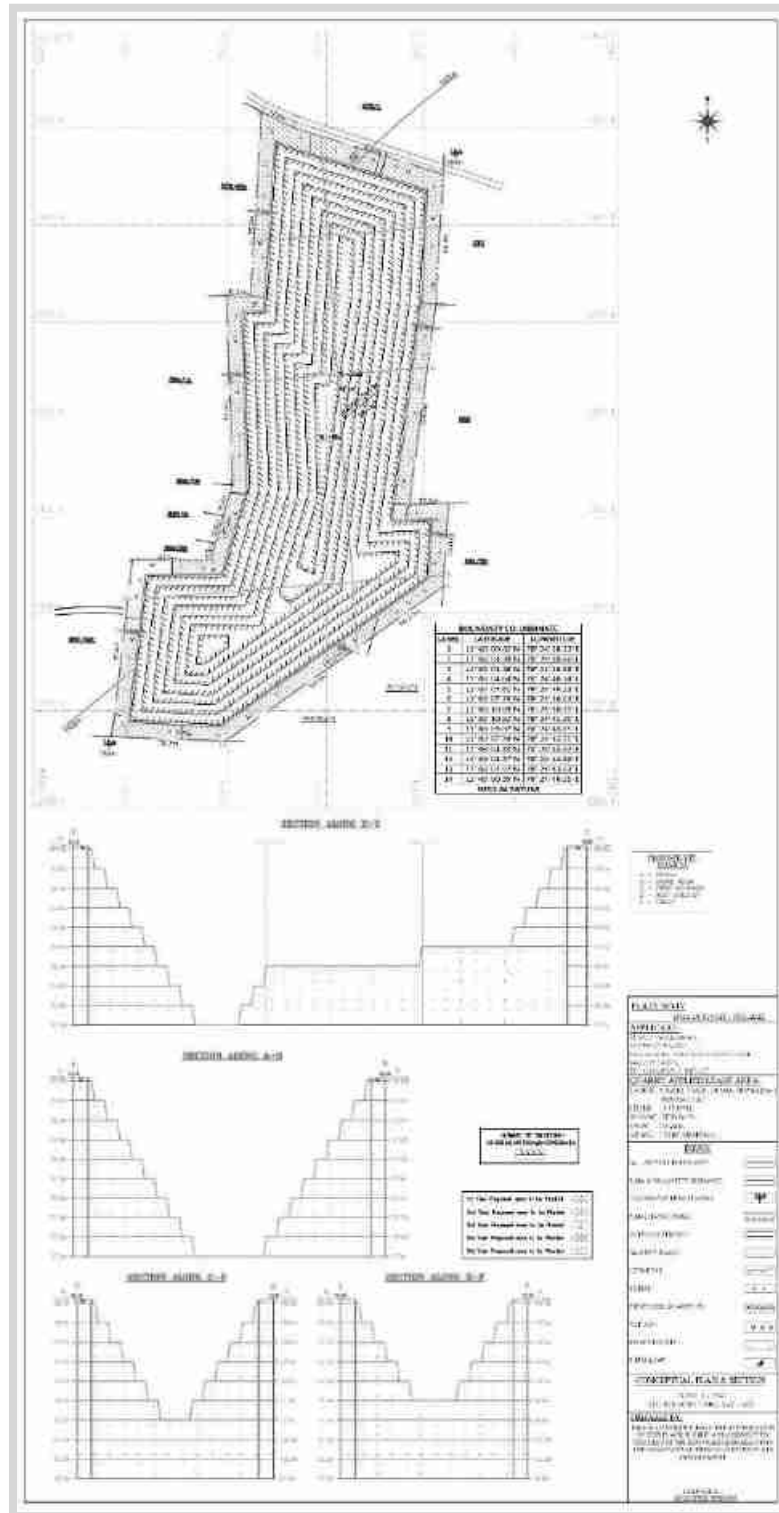


Figure 2.9 Conceptual Plan and Cross Section

2.11 PROJECT REQUIREMENT

2.11.1 WATER REQUIREMENT AND SOURCE

The total water requirement estimated for the quarry is 7.0 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 2.13 Details of Water requirement

Activity	Water Requirement in KLD
Drinking & Domestic	2.0
Dust Suppression	3.5
Greenbelt Development	1.5
Total	7.0

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 FUEL REQUIREMENT

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

i) For Rough Stone

Per hour excavator will consume	16 liters /hr
Per hour excavator will excavate	50 m ³ of Rough Stone
For 4,71,330m ³	4,09,762 /50 = 8195
So, Diesel consumption	=9427 X 16 litres =1,31,120 litres of HSD

ii) For Top Soil

Per hour excavator will consume	10 liters /hr
Per hour excavator will excavate	100 m ³ of Weathered Rock
For 57,622m ³	15,788/100 = 158
So, Diesel consumption	=158 X 10 litres =1580 litres of HSD

The Total fuel consumption is around 1,32,700 litres of HSD for the entire period of life (5 years).

2.11.4 EMPLOYMENT GENERATION

The project will provide employment opportunities totally to 30 persons directly and 30 indirectly.

Skilled	Operator	12 Nos
	Mechanic	1 No
	Mines Manager	1 No
	Fore Man / Mate	2 Nos
Semi-Skilled	Driver	4 Nos
Unskilled	Labours	10 Nos
Total		30 Nos

2.11.5 INFRASTRUCTURE REQUIREMENT

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

2.11.6 PROJECT COST

The total project cost of this Rough stone Quarry is Rs. 1, 00, 14,000/-

2.11.7 PROJECT IMPLEMENTATION SCHEDULE

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

Table 2.14 : Proposed Schedule of Implementation

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

3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

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

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

3.2 STUDY AREA

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

- Micro-meteorological monitoring in one of the representative locations.
- Ambient air quality study comprising gaseous, particulate matter at 6 different locations.
- Water quality analysis in 6 different locations (Ground Water).
- Noise levels monitoring in 6 different locations
- Soil quality analysis in 3 locations.
- Flora & Fauna status.
- Land use & Land Cover.
- Hydrological study.
- Socio-economic survey.

3.3 STUDY PERIOD

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

3.4 MONITORING LAB

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

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

Table 3.1 Structures within 300 m radius

RANGE	NO. OF STRUCTURES	Ref. Code	STRUCTURES DETAILS
0-50 m	2	1 & 2	Small Temple & Own Labour shed
50-100 m	1	3	Cow Shed
100-150 m	3	4,5 & 6	Two Houses & Unused Hallow Block Shed
150-200 m	Nil	-	Nil
200-250 m	1	7	House
250-300 m	2	8 & 9	Farmhouse & Cow Shed

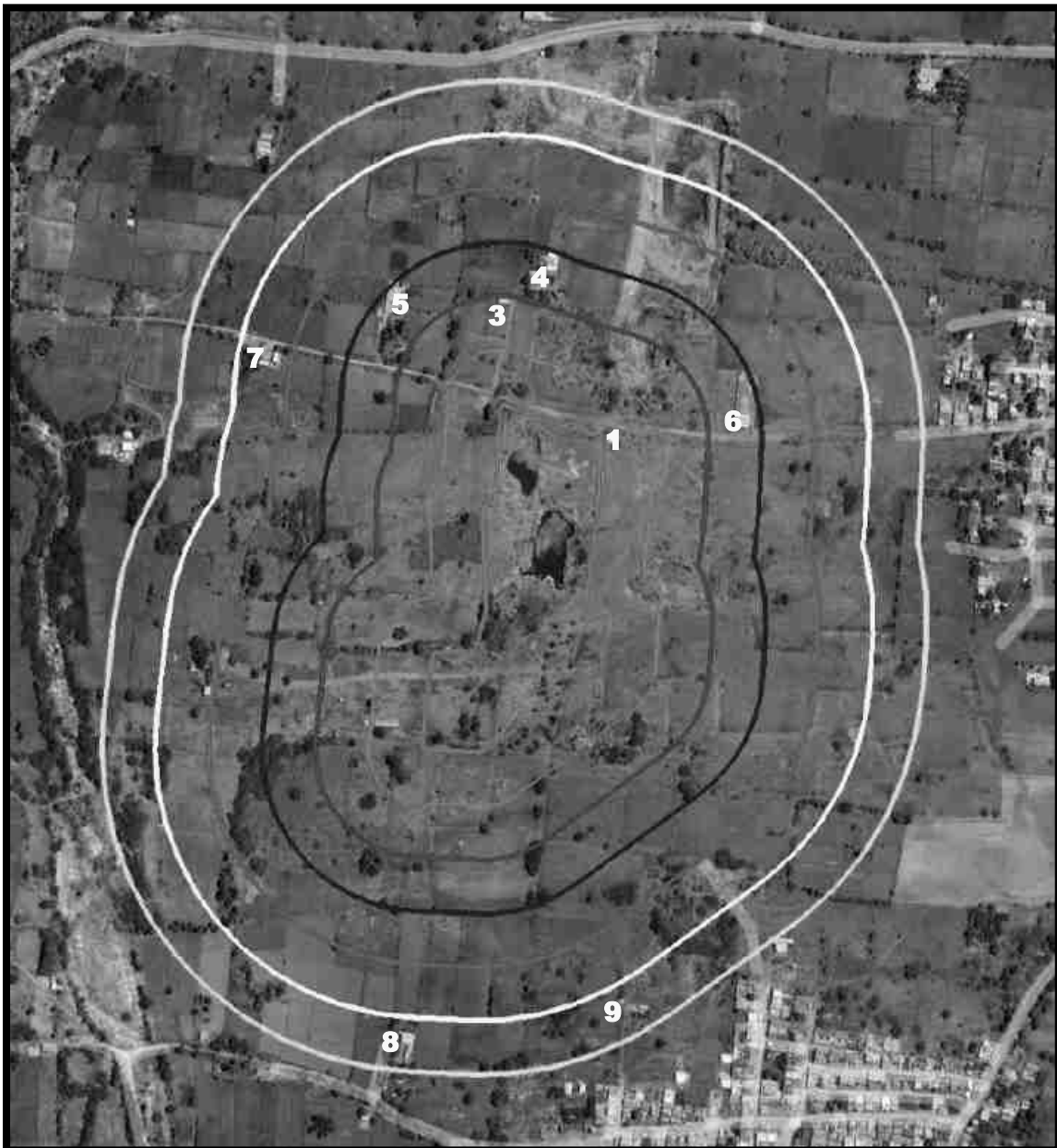


Figure 3.1 Structures within 300 m radius

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



1. Small Temple (10m NE)



2. Own Labour Shed 25m (W)



3. Cow Shed 92m (N)



4. House 118m (N)



5. House 135m (NW)



6. Unused Hollow block Shed 124 m NE



7. House 212 (NW)



8. Farmhouse 267m (S)








9. Cow Shed 272m (SE)

Figure 3.3 Photographs on Enumerations of the Structures within 300 m Radius



Figure 3.4 Environmental Features within 300 m radius

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

	
<p>1. Kuttai 190m (SE)</p>	<p>2. Soorampatti Village 315m (SW)</p>
	
<p>3. Odai 340 (SW)</p>	<p>4. Serigudi Village 330m (SE)</p>
	
<p>5. Crusher 205m (SW)</p>	
<p>Figure 3.5 Photographs on Environmental Features within 300 m radius</p>	

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- 3.7 and satellite image showing 10 km radius is given in Figure 3.6.

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

S.NO	Particulars	Description																						
1.	Latitude & Longitude	Latitude: 11°03'00.35"N to 11°03'10.89"N Longitude: 78°24'38.33"E to 78°24'43.99"E																						
2.	Toposheet No.	58 I / 08																						
3.	The altitude of the area	143 m (MSL)																						
4.	Topography	Plain Terrain																						
5.	Land use of M.L. area	Patta Land																						
6.	Extent of the Lease area	3.19.0 Ha.																						
7.	Nearest Highway	The National Highway (NH-381B) Namakkal- Musiri - 8.9km (S). The State Highway (SH-161) Thathaiyangarpet - Namakkal - 8.5km (NE).																						
8.	Nearest Railway Station	Karur - Tiruchirappalli line - 11.5 km (S)																						
9.	Nearest airport	Tiruchirappalli Airport - 45.0 Km - SE																						
10.	Nearest Village	Serugudi - 315 m (E) Surampatti - 320 m (S)																						
11	Water Bodies	<p>Core Zone - NIL</p> <p>Buffer Zone</p> <table border="1"> <thead> <tr> <th colspan="2">Within 1 km Radius</th> </tr> </thead> <tbody> <tr> <td>Pond</td> <td>170m - SW</td> </tr> <tr> <td>Kuttai 1</td> <td>190m - SE</td> </tr> <tr> <td>Seasonal odai</td> <td>295m - SW</td> </tr> <tr> <th colspan="2">1 km to 10 km Radius</th> </tr> <tr> <td>Kulam1</td> <td>1.4km - S</td> </tr> <tr> <td>Kulam 2</td> <td>2.1km - W</td> </tr> <tr> <td>Kulam 3</td> <td>3.7km - S</td> </tr> <tr> <td>Odai</td> <td>3.0km - NW</td> </tr> <tr> <td>Rudrajkombai Ar</td> <td>7.0km - NE</td> </tr> <tr> <td>Cauvery River</td> <td>8.7km - SW</td> </tr> </tbody> </table>	Within 1 km Radius		Pond	170m - SW	Kuttai 1	190m - SE	Seasonal odai	295m - SW	1 km to 10 km Radius		Kulam1	1.4km - S	Kulam 2	2.1km - W	Kulam 3	3.7km - S	Odai	3.0km - NW	Rudrajkombai Ar	7.0km - NE	Cauvery River	8.7km - SW
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Cauvery River	8.7km - SW																							

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

12.	Historical Places/Places of Tourist/ Archeological site	Nil within 10 km radius
13.	Environmental Sensitive areas, Protected areas , National Park/ Wildlife Sanctuaries/Biosphere Reserves/Tiger Reserves/Migratory Corridors; Migratory routes etc	NIL within 10 km radius
14	Seismic Zone	Zone II (Least active)
15	Reserved/Protected Forest	Mavilippatti R F - 1.3km - E Talamalai R F - 5.5km - W Viramachampatti R F - 9.5km - NE
16	Interstate boundary	NIL

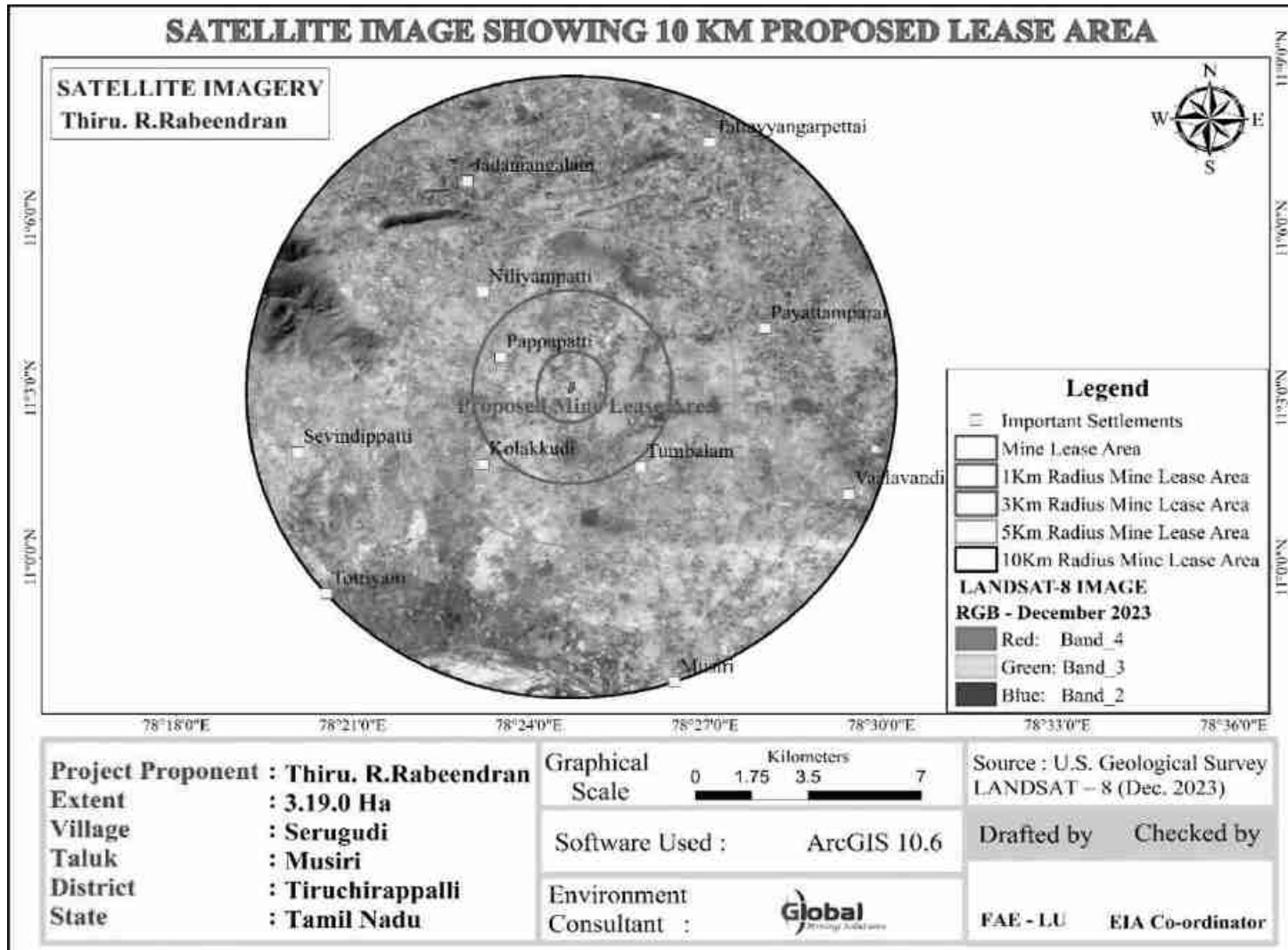


Figure 3.6 Satellite Image of the Study Area

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

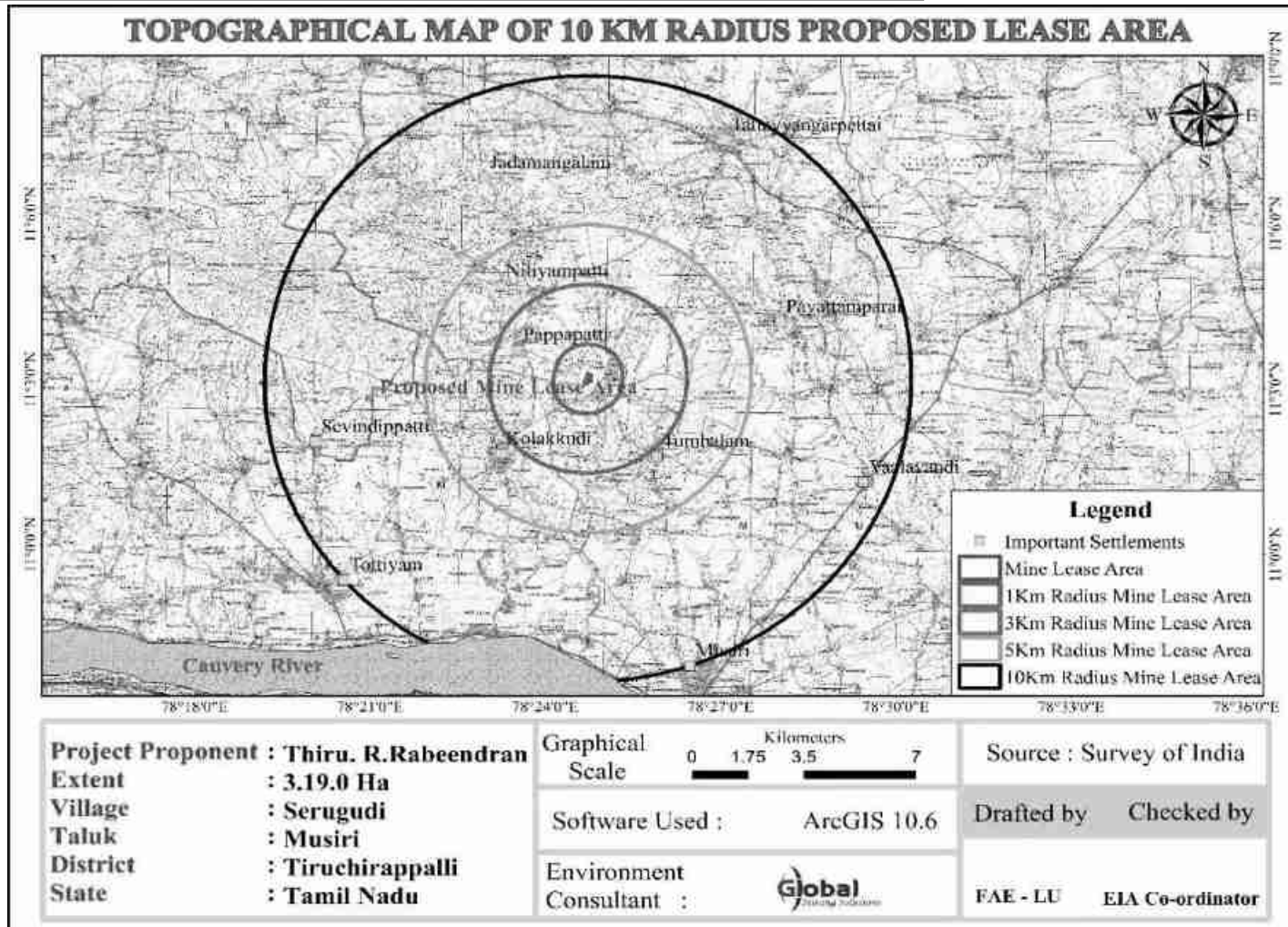


Figure 3.7 Topo map Showing Study Area



Figure 3.8 Google Image showing 1 km radius

3.7 EXISTING ENVIRONMENTAL SCENARIO

3.7.1 MICRO- METEOROLOGY

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

3.7.1.1 CLIMATE AND RAINFALL DATA

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

Table 3.3 Rainfall Data

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

Seismic Sensitivity

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

Table 3.4 Meteorological Data Recorded at Site

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

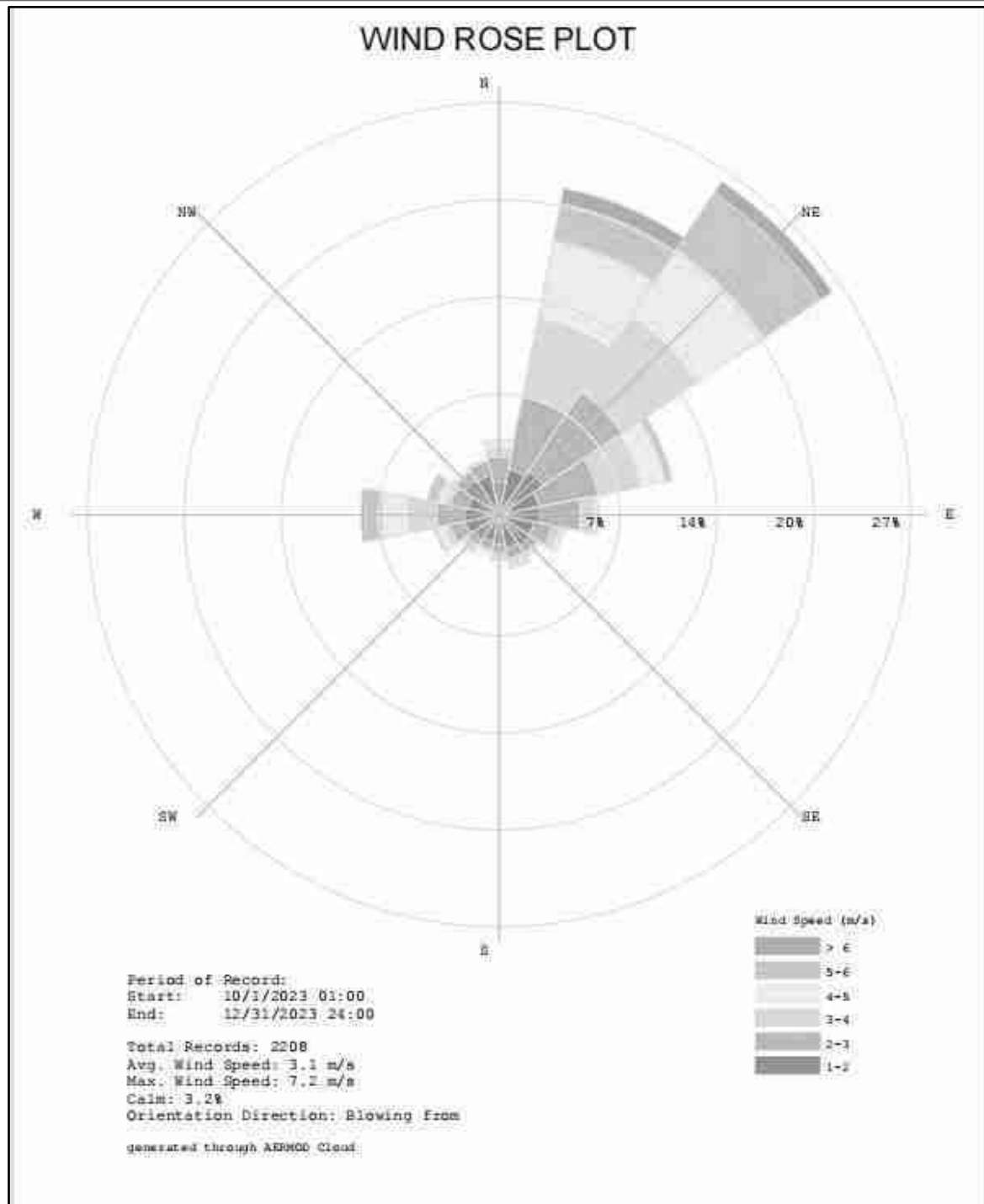


Figure 3.9 (a) Wind Rose Diagram – Blowing From (October – December 2023)

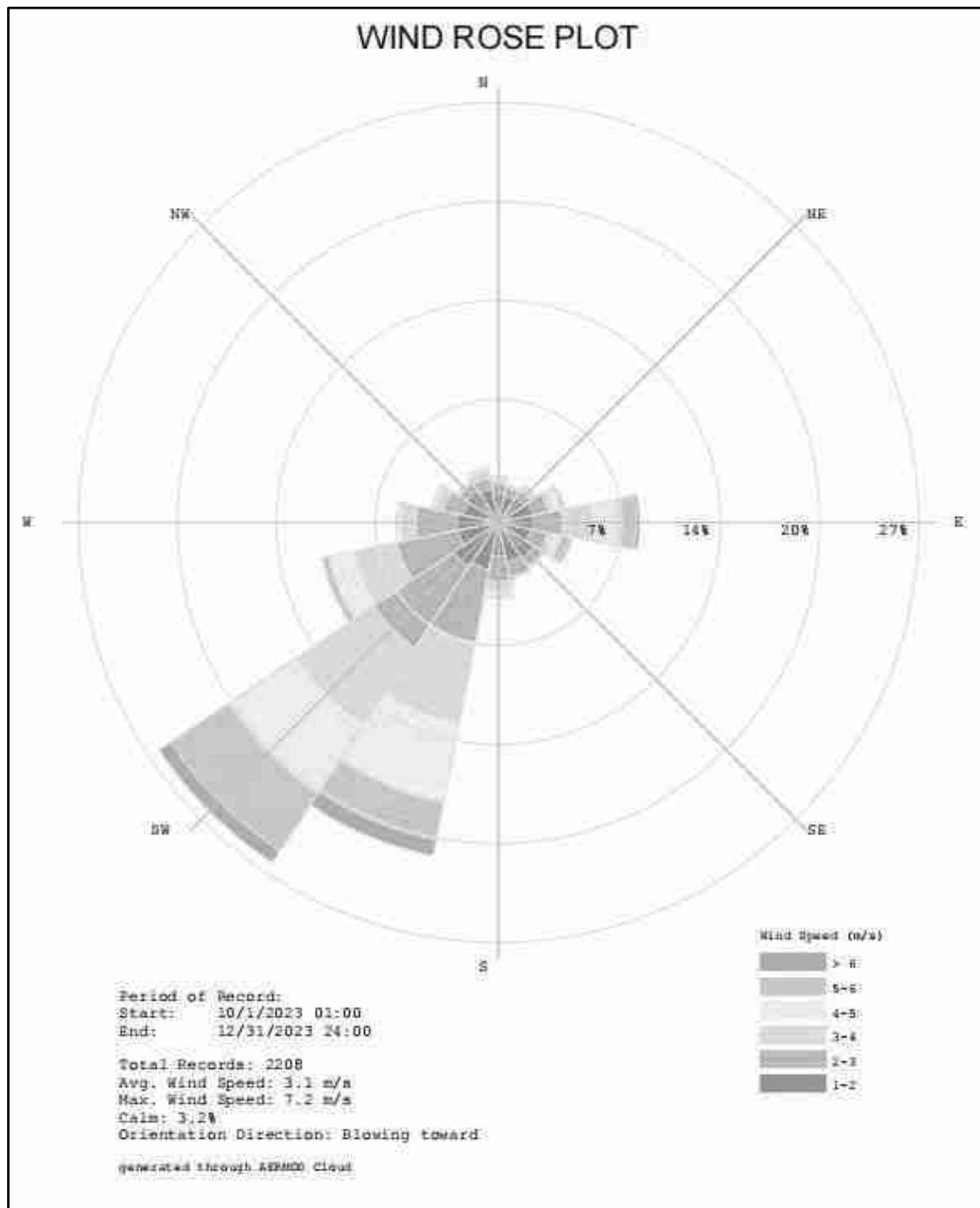


Figure 3.9(b) Wind Rose Diagram – Blowing Towards (October – December 2023)

3.7.2 AIR ENVIRONMENT

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

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

3.7.2.1 SAMPLING & ANALYTICAL TECHNIQUES

Table 3.5 Methodology for Air Quality Monitoring

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

3.7.2.2 FREQUENCY AND PARAMETERS FOR SAMPLING

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

It was ensured that the equipment was placed preferably at a height of at least 1.8 to 2.2 m above the ground level at each monitoring station, for negating the effects of wind-blown ground dust. The equipment was placed at open space free

from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

3.7.2.3 AMBIENT AIR QUALITY MONITORING STATIONS

Six (6) monitoring stations were set up in the study area as depicted in Figure 3.10 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	A1	Within Mine Lease area	11°03'04.70"N & 78°24'42.23"E
2	A2	Soorampatti Village	11°02'47.04"N & 78°24'40.09"E
3	A3	Serugudi Village	11°03'07.42"N & 78°24'58.93"E
4	A4	Appananallur Village	11°01'39.22"N & 78°23'19.24"E
5	A5	Poolancherry Village	11°04'22.50"N & 78°23'40.25"E
6	A6	Neeliampatty Villages	11°04'43.13"N & 78°23'10.92"E

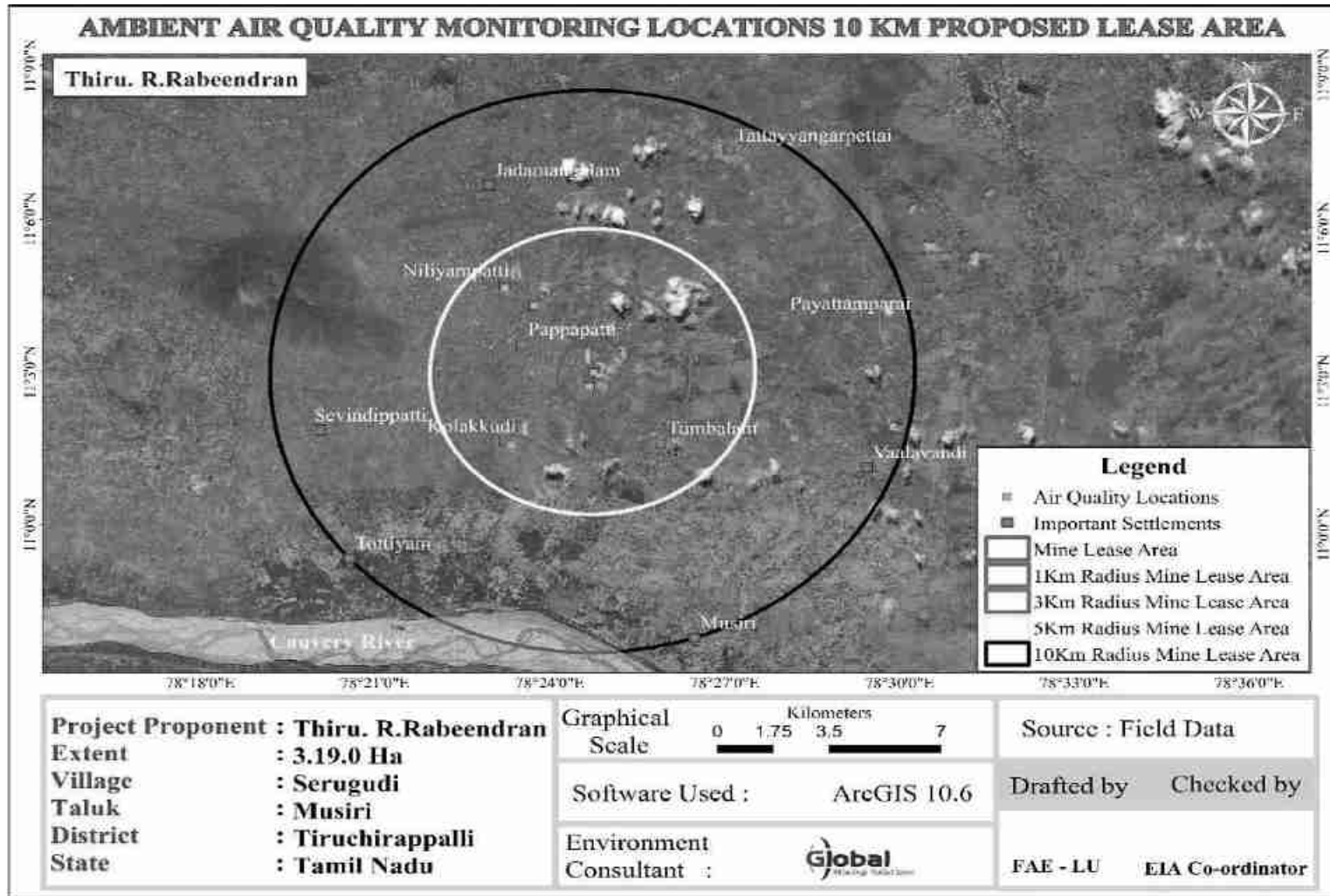


Figure 3.10 Ambient Air Quality Monitoring Locations

Table 3.7 Ambient Air Quality Data

S.NO	Parameters Locations	Ambient Air Quality									All Value in µg/m ³		
		PM10			PM2.5			SO2			NO2		
		Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
1	A1-Mine Lease Area	50.4	60.97	73.5	23.7	28.65	34.5	6.6	7.96	9.5	9.6	12.1	15.8
2	A2 - Soorampatti Village	48.5	56.60	66.3	23.1	27.16	31.8	6.2	7.45	8.9	8.7	11.11	14.5
3	A3 - Serugudi Village	47.1	53.45	60.7	22.4	25.38	28.8	5.5	6.88	8.7	8.8	11.20	13.5
4	A4 - Appananallur Village	39.2	47.25	55.3	18.08	21.78	25.5	3.7	6.0	8.3	7.4	8.74	10.4
5	A5 - Poolancherry Village	41.3	48.48	56.6	19.1	22.34	26.1	4.5	5.82	7.7	7.6	10.02	12.3
6	A6 - Neeliampatty Villages	44.6	51.50	58.40	20.7	23.85	27.0	5.5	6.75	8.2	7.6	10.12	13.3
7	CPCB NAAQS 2009	100			60			80			80		

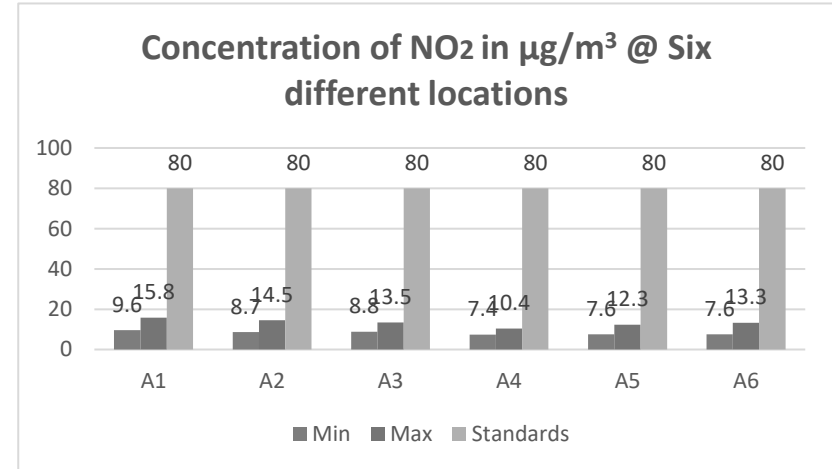
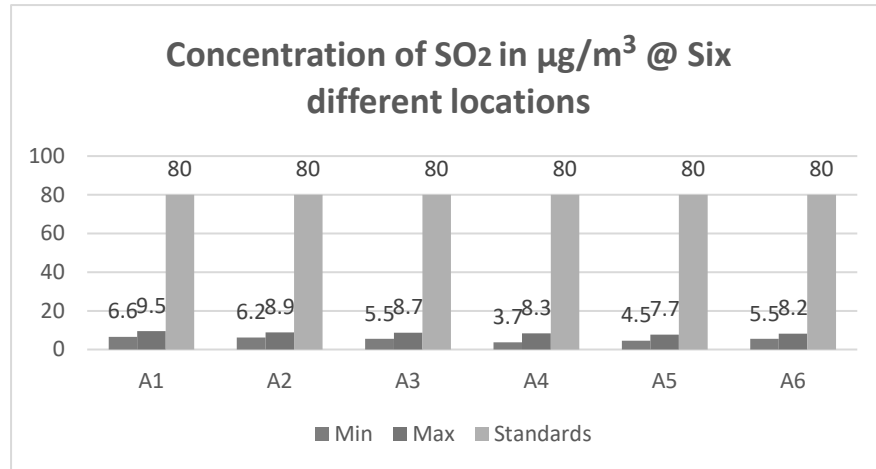
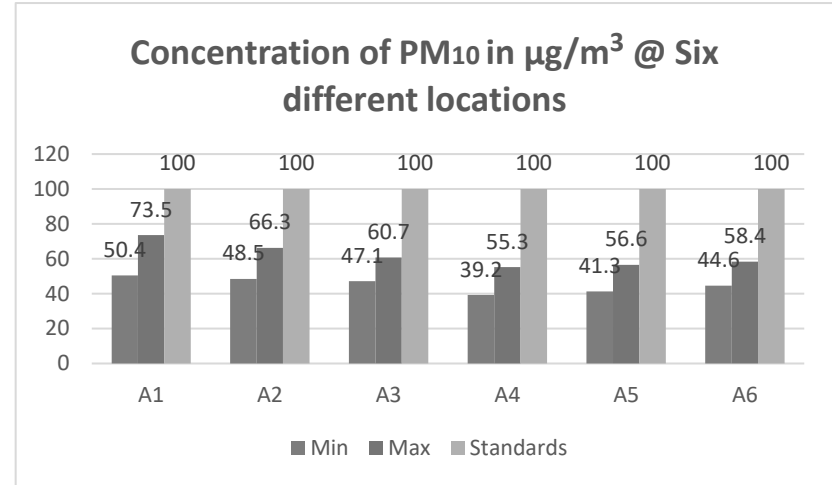
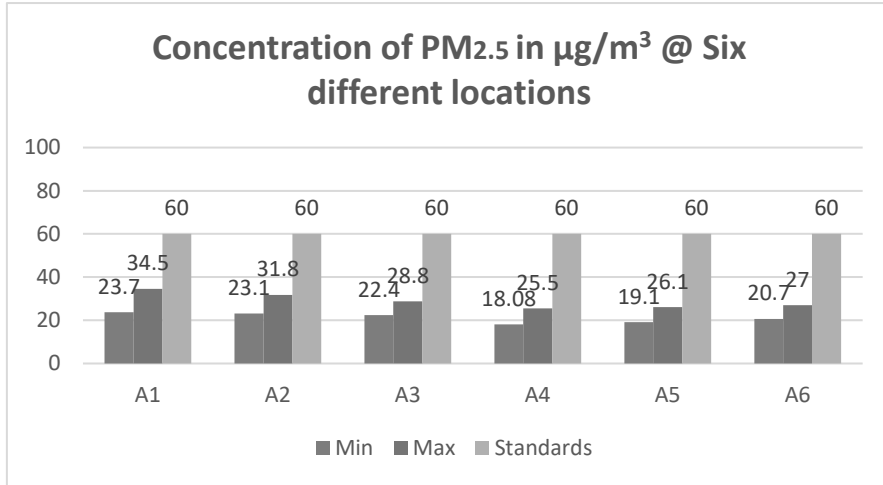


Figure -3.11 - Graphical Representation of Air Quality Data

3.7.2.4 DISCUSSION

From the table it is seen that, in core zone, the PM10 values were in the range of 50.4 – 73.5 µg/m³. PM2.5 values in the range of 23.7 – 34.5 µg/m³. SO₂ levels were ranging from 6.6 – 9.5 µg/m³ and NO₂ levels were ranging from 9.6 – 15.8 µg/m³. In buffer zone, the PM10 values were in the range of 39.2 – 66.3 µg/m³. PM2.5 values were in the range of 18.08 – 31.8 µg/m³. SO₂ levels were ranging from 5.82 – 8.9 µg/m³. NO₂ levels were ranging from 7.4 – 14.5 µg/m³. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM10, PM2.5, SO₂, NO₂ & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL – 1144 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 SURFACE WATER

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

Within 1 km Radius	
Pond	170m – SW
Kuttai 1	190m – SE
Seasonal odai	295m – SW
1 km to 10 km Radius	
Kulam1	1.4km – S
Kulam 2	2.1km – W
Kulam 3	3.7km – S
Odai	3.0km – NW
Rudrajkombai Ar	7.0km – NE
Cauvery River	8.7km – SW

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

3.7.3.3 GROUND WATER

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

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

HARD ROCK FORMATION GNEISSIC TYPE

Groundwater occurs under water table or phreatic conditions in weathered, jointed and fractured formations. The pore space developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing and yielding zones. Water table is very shallow in river, canal and tank irrigated regions whereas it is somewhat deeper in other regions.

CHARNOCKITE TYPE

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

Ground Water Level Status in Musiri							
S. No.	Firka	Net Annual Ground water availability	Existing gross ground water consumption for irrigation	Existing gross ground water consumption for domestic and industrial water supply	Existing gross ground water consumption for all uses	Stage of ground water development	Category
1	Musiri	1,167.51	834.30	30.71	865.01	74	SEMI CRITICAL

Source: nwm.gov.in.

3.7.3.4 SAMPLING LOCATIONS

Six (6) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.8 a and Figure 3.12.

Table 3.8 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
Ground Water			
1	GW1	Within Mine Lease area	11°03'04.70"N & 78°24'42.23"E
2	GW2	Soorampatti Village	11°02'47.04"N & 78°24'40.09"E
3	GW3	Serugudi Village	11°03'07.42"N & 78°24'58.93"E
4	GW4	Appananallur Village	11°01'39.22"N & 78°23'19.24"E
5	GW5	Poolancherry Village	11°04'22.50"N & 78°23'40.25"E
6	GW6	Neeliampatty Villages	11°04'43.13"N & 78°23'10.92"E

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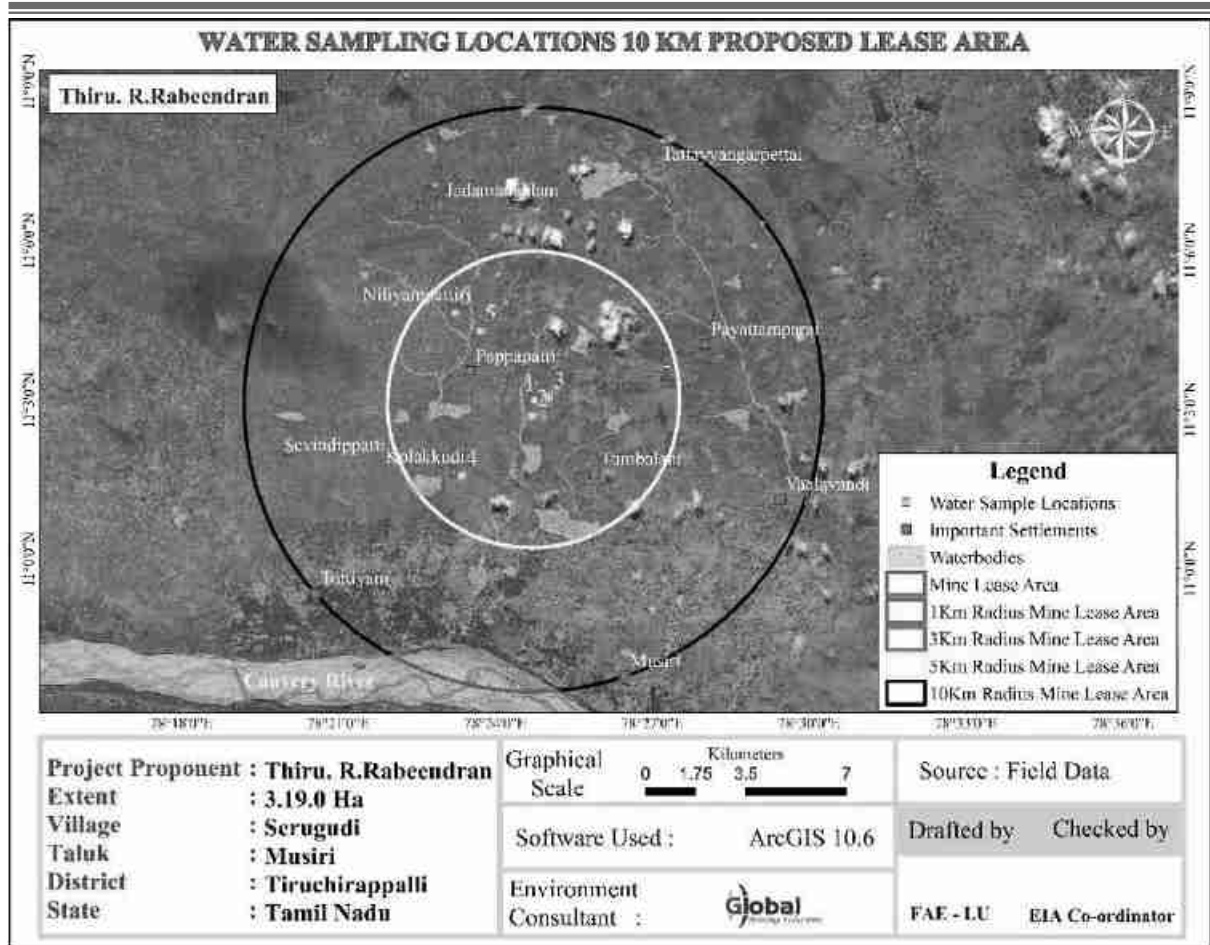


Figure 3.12 – Water Monitoring Locations

Table 3.9 – Water Analysis Results

Parameter	GW1	GW2	GW3	GW4	GW5	Standards as Per IS 10500: 2012		
						Acceptable Limits	Permissible Limits	
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity	<1	<1	<1	<1.0	<1	<1	1	5
pH at 25 °C	7.33	7.42	7.58	7.64	7.89	7.95	6.5- 8.5	No Relaxation
Electrical Conductivity	606.9	615.8	1401	2169	541.2	1148	-	-
Total Dissolved Solids	374	390	850	1360	332	680	500	2000
Total hardness as CaCO ₃	145	147	380	519	149	347	200	600
Calcium as Ca	32.1	31.4	97.2	125	40.0	54.9	75	200
Magnesium as Mg	15.5	16.5	32.9	49.4	12	50.3	30.0	100
Calcium as CaCO ₃	80.4	78.4	243	314	100	137	-	-
Magnesium as CaCO ₃	64.7	68.6	137	206	49.0	210	-	-
Total alkalinity as CaCO ₃	143	147	212	412	143	272	200	600
Chloride as Cl ⁻	110	114	237	503	61.1	195	250	1000
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
Sulphates as SO ₄ ²⁻	78.8	82.1	213	296	78.2	120	200	400
Iron as Fe	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	0.12	BDL(DL-0.01)	BDL(DL-0.01)	0.3	No Relaxation
Nitrate as NO ₃	3.04	3.12	4.05	2.58	2.14	2.34	45	No Relaxation
Fluoride as F	BDL(DL-0.1)	BDL(DL-0.1)	BDL(DL-0.1)	BDL(DL-0.1)	BDL(DL-0.1)	0.44	1	1.5
Manganese as Mn	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

3.7.3.5 DISCUSSION

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 7.33 – 7.95, Chlorides Ranges From 61.1 - 503 mg/l, Sulphates value found to be between 78.2 - 296 mg/l, Fluoride below detectable limits in all locations, Total Hardness varies from 147 - 519 mg/l, and Total dissolved solid 332 - 1360 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

3.7.4 NOISE ENVIRONMENT

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

3.7.4.1 SAMPLING LOCATIONS

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Six (6) locations. The noise level of monitoring locations were carried out by covering 10 km radius of the project area. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study. The noise monitoring locations are given in Figure 3.13 and in below table.

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Table 3.10 Noise Monitoring Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
1	N1	Within Mine Lease area	11°03'04.70"N & 78°24'42.23"E
2	N2	Soorampatti Village	11°02'47.04"N & 78°24'40.09"E
3	N3	Serugudi Village	11°03'07.42"N & 78°24'58.93"E
4	N4	Appananallur Village	11°01'39.22"N & 78°23'19.24"E
5	N5	Poolancherry Village	11°04'22.50"N & 78°23'40.25"E
6	N6	Neeliampatty Villages	11°04'43.13"N & 78°23'10.92"E

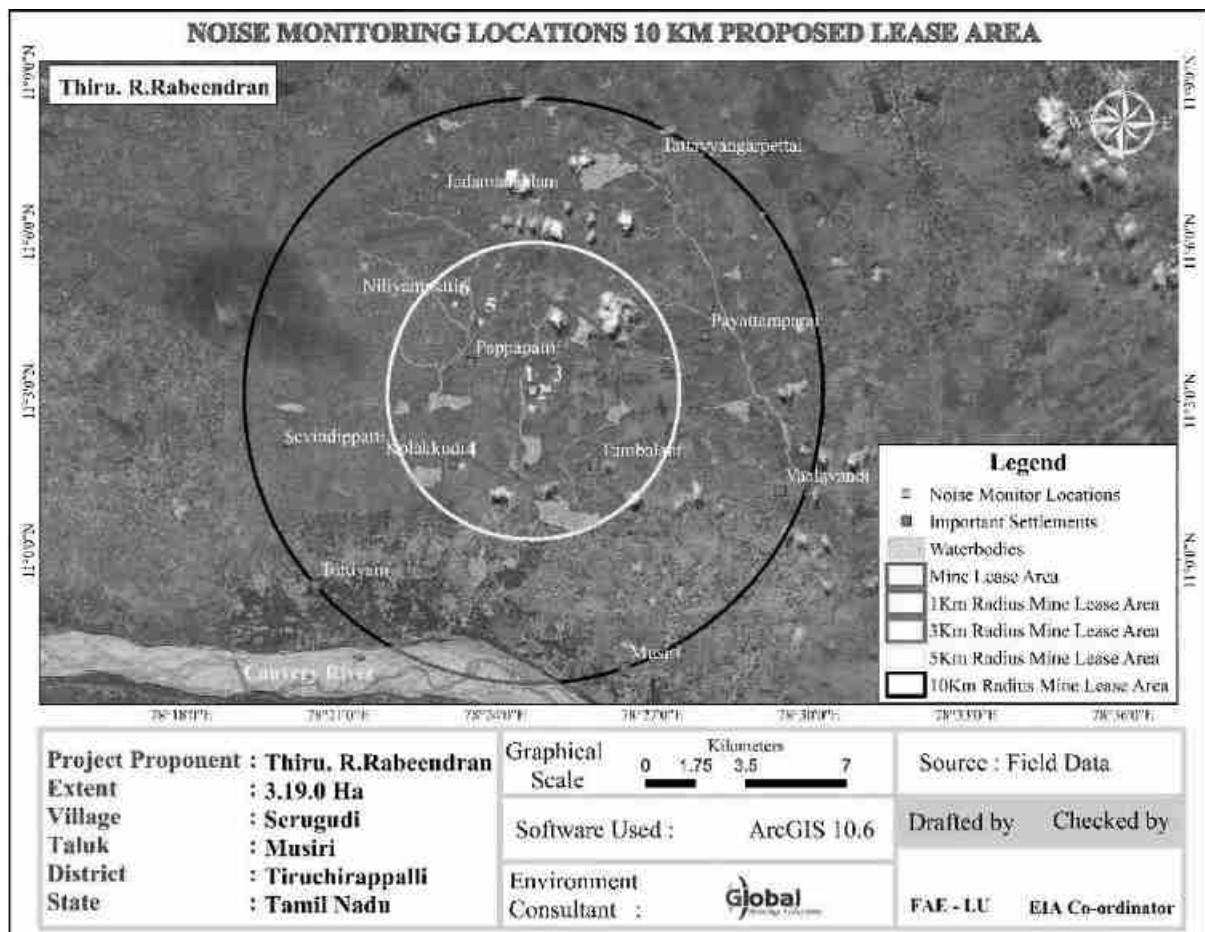


Figure 3.13 Noise Monitoring Location

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 3.11.

Table 3.11 Noise Monitoring Result

Monitoring Location	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	46.1	45.5	44.4	43.4	46.9	43.1
NIGHT EQUIVALENT	36.9	36.3	37.2	35.7	36.9	37.7
DAY & NIGHT EQUIVALENT	44.6	44.0	43.0	42.0	45.4	42.0
Limits as per MoEF&CC						
Day equivalent - 55 dB (A); Night equivalent - 45 dB (A); Work zone Exposure in 8 hr - 90 dB (A)						

3.7.4.4 DISCUSSION

From the table it is observed that the day Equivalent Noise (Leq-d) level were ranging from 43.1 to 46.9 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 35.7 to 37.7 (A). Day and Night Equivalent Noise (Leq-n) level were ranging from 42.0 to 45.4 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. The locations of the monitoring sites are detailed in Table 3.12 and Figure 3.14.

3.7.5.1 MONITORING LOCATIONS

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

Table 3.12 – Soil Sampling Locations

S.No	Location Code	Monitoring Locations	Latitude and longitude
1	S1	Within Mine Lease area	11°03'04.70"N & 78°24'42.23"E
2	S2	Soorampatti Village	11°02'47.04"N & 78°24'40.09"E
3	S3	Serugudi Village	11°03'07.42"N & 78°24'58.93"E

3.7.5.2 METHODOLOGY

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

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

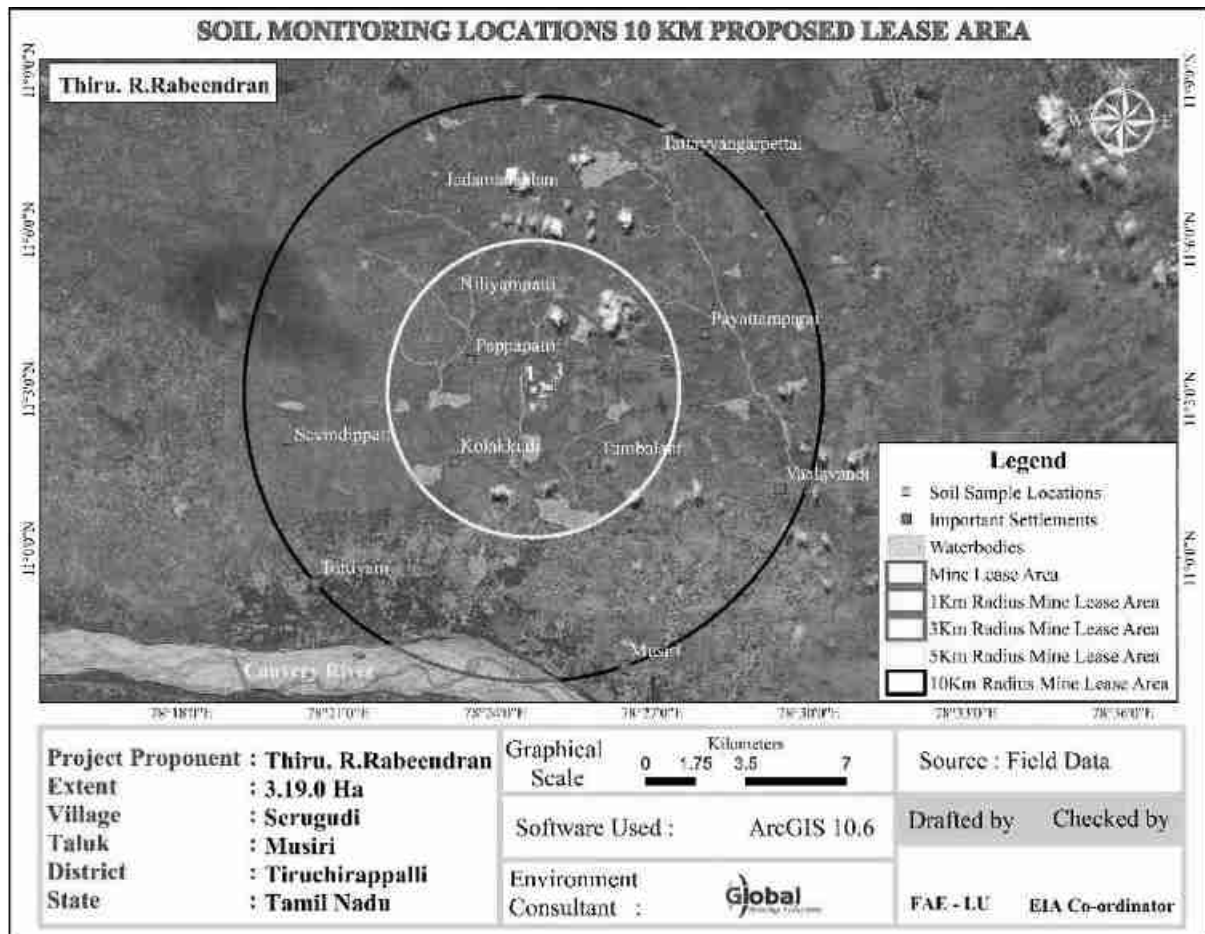


Figure 3.14 - Soil Sampling Stations
Table 3.13 - Soil Testing Result

Parameter	Units	S1	S2	S3
PH		8.35	8.12	7.87
EC	µmhos/cm	95.4	91.2	86.59
DRY MATTER	%	98.06	94.48	95.67
WATER CONTENT	%	1.94	5.52	4.33
ORGANIC MATTER	%	0.72	0.75	0.66
SOIL TEXTURE		LOAM	SILT LOAM	LOAM
Grain Size Distribution				
SAND	%	35.65	23.18	30.98
SILT	%	42.30	59.42	48.93
CLAY	%	22.05	17.40	20.09
PHOSPHORUS	mg/kg	0.098	0.074	0.106
SODIUM	mg/kg	273	968	326
POTASSIUM	mg/kg	469	405	649

KJELDHAL NITROGEN	mg/kg	397	592	821
SULPHUR	%	BDL(D.L - 0.02)	BDL(D.L - 0.02)	BDL(D.L - 0.02)
Water Holding Capacity	%	4.1	3.7	4.5
Porosity	%	18.0	20.0	17.0

3.7.5.3 SOIL TESTING RESULT

Results of the soil samples show that the pH values were found to be 7.87 to 8.35 and Electrical Conductivity values were ranging between 86.59 – 95.4 μ mhos/cm. Soils are generally Loam. Organic matter values were ranging between 0.66 – 0.75 %. Total Nitrogen values were ranging between 397 – 821 mg/kg. Phosphorus values were ranging between 0.07 – 0.10 μ g/g. Potassium values were ranging between 405 – 649 mg/kg. Sodium values were ranging between 273 – 968 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in Table no – 3.13.

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 3.14 Land use pattern of the project site

Description	Present Area in Ha.	Area at the end of life of Quarry in Ha.
Quarrying pit	0.35.0	2.54.0
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Greenbelt	0.01.0	0.62.0
Unutilized	2.82.0	Nil
Total	3.19.0	3.19.0

- At the end of life of mine, the excavated mine pit / void of 2.54.0 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 (0.62.0 Ha.) will be developed along the safety barrier and top benches and 0.03 ha are approach road and Infrastructure.

3.7.6.2 LAND USE PATTERN OF THE STUDY AREA

A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover. The land use map of the study area is given in Figure 3.15.

Table 3.15 Land use pattern of the Study area of 10 km radius

Sl.No.	LULC_CLASS	Area in Sq.km	Percentage (%)
1	Built-up land	9.76	3.03
2	Existing mining area	0.47	0.15
3	Fallow land	188.62	58.51
4	Land with scrub	3.29	1.02
5	Land without scrub	2.90	0.90
6	Plantations	74.60	23.14
7	Reserved Forest	19.76	6.13
	Rock outcrop	5.57	1.73
	Water bodies	17.37	5.39
	Total	322.35	100

Source : Survey of India Toposheet and Landsat Satellite Imagery

From above table it is inferred that the majority of the land in the study area is Fallow Land (58.51 %) followed by plantation (23.14).

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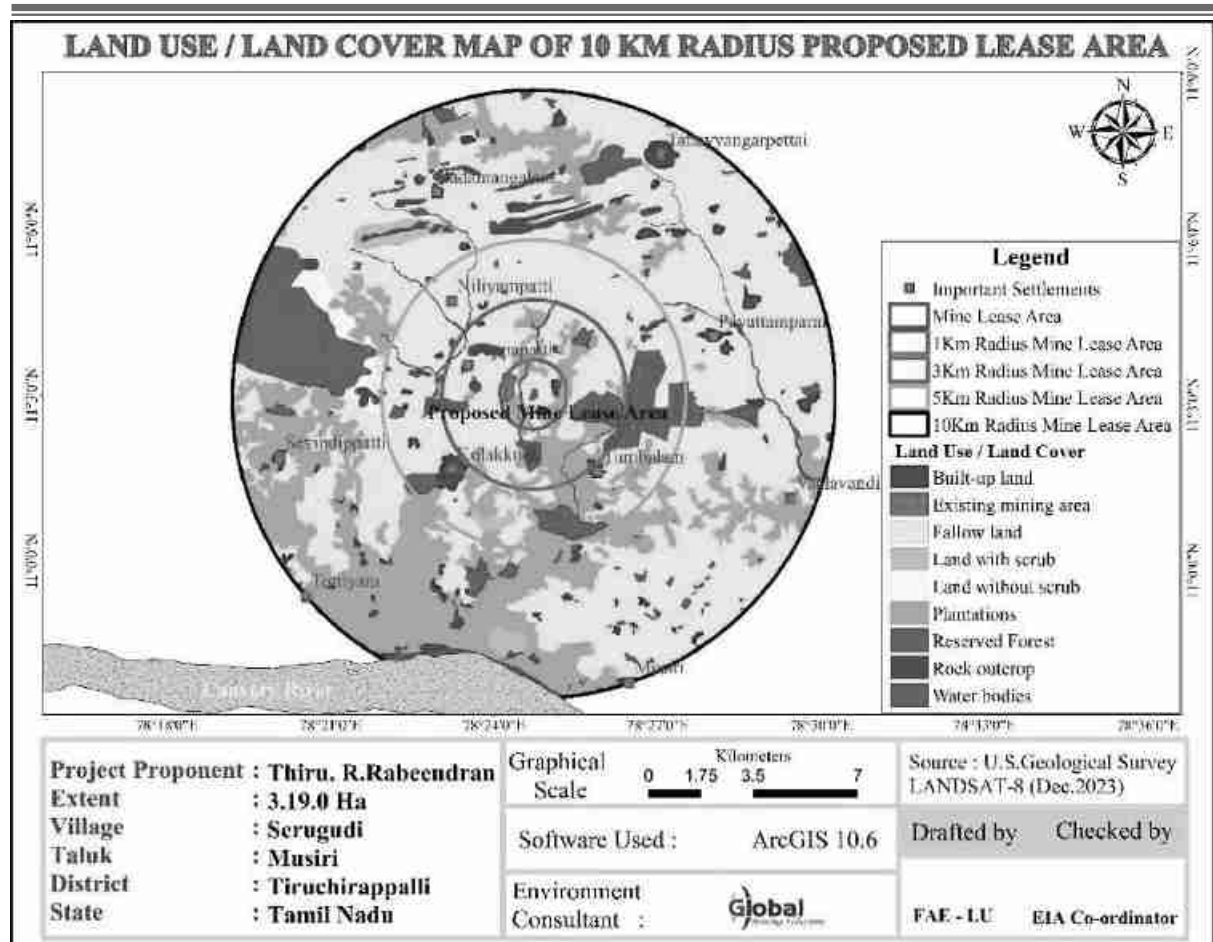


Figure 3.15 Land use map of the study area

3.7.7 BIOLOGICAL ENVIRONMENT

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

Methodology

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

3.7.7.1 FLORA

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

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

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

3.7.7.2 FLORISTIC COMPOSITION IN CORE ZONE

The PP has planned to operate in the existing mine lease area. There are no plant species in the mining lease area.

Flora in 300 m radius zone

There are some plantation within 300 m radius. It contains a total of 12 species belonging to 10 families have been recorded from the buffer zone of 300 m radius. Trees 3 (25%), Shrubs 3 (25%) Herbs 6 (50%) were identified.

Flora in 300 m radius

S. No	Local Name	Scientific Name	Family Name	IUCN Conservation Status
Trees				
1	Vembu	<i>Azadirachta Indica</i>	Meliaceae	Not Listed
2	Karuvelam	<i>Vachellia Nilotica</i>	Fabaceae	Not Listed
3	Vealli Vealan	<i>Vachellia Leucophloea</i>	Babesiae	LC
Shrubs				
1	Erukku	<i>Calotropis Gigantea</i>	Apocynaceae	Not Listed
2	Avarai	<i>Senna Auriculata</i>	Fabaceae	Not Listed
3	Thuthi	<i>Abutilon Indicum</i>	Meliaceae	Not Listed
Herbs				

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1	Mukkirattai	<i>Boerhaavia Diffusa</i>	Nyctaginaceae	Not Listed
2	Nai Kadugu	<i>Celome Viscosa</i>	Capparidaceae	Not Listed
3	Kovakkai	<i>Trichosanthes Dioica</i>	Cucurbitaceae	Not Listed
4	Perandai	<i>Cissus Quadrangularis</i>	Vitaceae	Not Listed
5	Thumbai	<i>Leucas Aspera</i>	Lamiaceae	Not Listed
6	Mookuthi Poondu	<i>Wedelia Trilobata</i>	Asteraceae	Not Listed

3.7.7.3 FLORISTIC SCENARIO IN BUFFER ZONE AREA

Taxonomically a total of 46 species distributed among 31 families have been recorded from the buffer area. Based on habitat classification of the enumerated plants the majority of species were Trees 21 and Shrubs 15 followed by herbs, climbers etc., 10. Details of flora with the scientific name were mentioned in Table No. 3.16.

Table 3.16 List of Flora

S.NO	Local Name	Scientific Name	Family Name
Trees			
1	Coconut	<i>Cocos nucifera</i>	Arecaceae
2	Banyan tree	<i>Ficus benghalensis</i>	Moraceae
3	Tambut/Indian Plum	<i>Flacourtia indica</i>	Flacourtiaceae
4	Mango	<i>Mangifera indica</i>	Anacardiaceae
5	Drumstick tree	<i>Moringa oleifera</i>	Moringaceae
6	Tulasi	<i>Ocimum sanctum</i>	Labiatae
7	Ashoka tree	<i>Saraca indica</i>	Caesalpinaceae
8	Tamarind	<i>Tamarindus indica</i>	Caesalpinaceae
9	Pomegranate	<i>Punica granatum</i>	Puniaceae
10	Guava	<i>Psidium guajava</i>	Myrtaceae
11	Babul	<i>Acacia nilotica</i>	Mimosaceae
12	Vembu	<i>Azadirachta Indica</i>	Meliaceae
13	Punnai	<i>Calophyllu Inophyllum</i>	Calophyllaceae
14	Ilanthai	<i>Ziziphus Jujubha</i>	Rhamnaceae
15	Thenpazham	<i>Muntingia Calabura</i>	Tiliaceae
16	Nochi	<i>Vitex Negundo</i>	Lamiaceae
17	Pappali Maram	<i>Carica Papaya L</i>	Caricaceae
18	Poovarasu	<i>Thespesia Populnea</i>	Malvaceae
19	Karuvelam Maram	<i>Vachellia Nilotica</i>	Fabaceae
20	Nelli	<i>Emblica Officinalis</i>	Phyllanthaceae
21	Navalmaram	<i>Sygygium Cumini</i>	Myrtaceae
Shrubs			
1	Pink Morning Glory	<i>Ipomea carnea</i>	Convolvulaceae
2	Hibiscus	<i>Hibiscus rosa-sinensis</i>	Malvaceae
3	Jasmine	<i>Jasminum arborens</i>	Oleaceae
4	Thuthi	<i>Abutilon Indicum</i>	Meliaceae

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5	Nithyakalyani	<i>Cathranthus Roseus</i>	Apocynaceae
6	Kattamanakku	<i>Jatropha Curcas</i>	Euphorbiaceae
7	Avarai	<i>Senna Auriculata</i>	Fabaceae
8	Erukku	<i>Calotropis Gigantea</i>	Apocynaceae
9	Neermulli	<i>Hydrophila Auriculata</i>	Acanthaceae
10	Sarpunkha	<i>Tephrosia purpurea</i>	Fabaceae
11	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
12	Agati	<i>Sesbania grandiflora</i>	Fabaceae
13	Dhatura, Umettha	<i>Datura metel</i>	Solanaceae
14	Uttareni	<i>Acyranthes aspera</i>	Amaranthaceae
15	Kundumani	<i>Abrus Precatorius</i>	Fabaceae
Herbs, Climber, Creeper & Grasses			
1	Veetukaayapoon Du	<i>Tridax Procumbens</i>	Asteraceae
2	Kuppaimeni	<i>Acalypha Indica</i>	Euphorbiaceae
3	Mukkirattai	<i>Boerhaavia Diffusa</i>	Nyctaginaceae
4	Karisilanganni	<i>Eclipta Prostata</i>	Asteraceae
5	Thumbai	<i>Leucas Aspera</i>	Lamiaceae
6	Thulasi	<i>Ocimum Tenuiflorum</i>	Lamiaceae
7	Manathakkali	<i>Solanumnigrum</i>	Solanaceae
8	Sangupoo	<i>Clitoriaternatia</i>	Fabaceae
9	Arugampul	<i>Cynodon Dactylon</i>	Poaceae
10	Nai Kadugu	<i>Celome Viscosa</i>	Capparidaceae

3.7.7.4 LIST OF FAUNA

A total of 34 species belonging were recorded in the buffer zone. Based on habitat classification the majority of species were 15 Birds, followed by 7 Insects, 4 Reptiles, 5 Mammals and 3 Amphibians. There are one schedule I species, one schedule II species, 31 schedule IV species and one Schedule V species according to Indian wild life Act 1972. There are no critically endangered, vulnerable and endemic species observed. List of fauna in the buffer zone is mentioned in Table 3.17.

Table 3.17 List of Fauna

S.No.	Scientific Name	Common Name	Conservation status as per Indian Wildlife Protection Act (1972)
Avifauna			
1	<i>Ardeola grayii</i>	Pond heron/ Paddy Bird	Sch-IV
2	<i>Ploceus philippinus</i>	Weaver bird	Sch-IV
3	<i>Tachybaptus ruficollis</i>	Little Grebe	Sch-IV
4	<i>Corvus splendens</i>	House crow	Sch-V
5	<i>Acridotheres tristis</i>	Common myna	Sch-IV
6	<i>Dicrurus macrocerus</i>	Black drongo	Sch-IV
7	<i>Quills contronix</i>	Grey quail	Sch-IV

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8	<i>Apus affinis</i>	House swift	Sch-IV
9	<i>Columba livia</i>	Blue Rock pigeon	Sch-V
10	<i>Streptopelia chinensis</i>	Spotted Dove	Sch-IV
11	<i>Passer domesticus</i>	House Sparrow	Sch-IV
12	<i>Egretta garzetta</i>	Little egret	Sch-IV
13	<i>Himantopus Himantopus</i>	Black Winged Stilt	Sch-IV
14	<i>Ceryule rudis</i>	Lesser Pied Kingfisher	Sch-IV
Reptiles			
1	<i>Naja naja</i>	India cobra	Sch-II
2	<i>Calotes versicolor</i>	Common garden lizard	Sch-IV
3	<i>Bangarus caeruleus</i>	Krait	Sch-IV
4	<i>Ptyas mucosus</i>	Rat snake	Sch-II
Amphibians			
1	<i>Rana hexadactyla</i>	Frog	Sch-IV
2	<i>Rana tigrine</i>	Bull frog	Sch-IV
3	<i>Bufo melanosticus</i>	Common Indian toad	Sch-IV
Mammals			
1	<i>Rattus sp</i>	Rat	Sch-V
2	<i>Lepus nigricollis</i>	Indian Hare	Sch-IV
3	<i>Funambulus palmarum</i>	Indian Palm squirrel	Sch-IV
4	<i>Rattus norvegicus</i>	Field mouse	Sch-IV
5	<i>Rusty spotted Cat</i>	Felis rubiginosa	Sch-IV
Insects			
1	<i>Danainae</i>	Milkweed butterfly	NL
2	<i>Apis cerana</i>	Indian honey bee	Sch-IV
3	<i>Ceratogomphus pictus</i>	Dragonfly	Sch-IV
4	<i>Hieroglyphus sp</i>	Grasshopper	NL
5	<i>Danaus chrysippus</i>	Tawny coster	Sch-IV
6	<i>Sympetrum fonscolombii</i>	Red-veined darter	NL
7	<i>Tirumala limniace</i>	Blue tiger	Sch-IV

The core zone of the area is patta land, No forest land is involved in the project area. The proposed quarry area is already operated by PP in the period of 18.06.2012 to 17.06.2015. 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 top soil formation. The massive Charnockite formation is noticed below 1m (Avg)

top soil and sloping towards Southeastern side of the area, the altitude of the area is above 143m (maximum) from MSL.

3.7.9 DRAINAGE PATTERN OF THE AREA

The Drainage pattern study reveals that there is a pond located at 170 m in Southwest direction and a kuttai located at a distance of 190m in Southeast direction. There is a seasonal odai located at 295m in Southwest direction. There is no river passed through within 1 km radius from the project site. Rudrajkombai Ar and Cauvery River are situated at 7.0 km (NE) and 8.7 km (SW) respectively. 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 3.16.

3.7.10 GEOMORPHOLOGY

Predominantly the buffer zone is dominated by Shallow Buried Pediplan (57.79 %), and it is the same category that the lease area also falls under. Geomorphology of the study area is detailed below. The geomorphology of the study area is given in Figure 3.18.

Sl.No.	GEOMORPHOLOGY	Area in Sq.Km	Area in Percentage
1	Dome type Residual Hills	0.37	0.11
2	Inselberg	1.26	0.39
3	Linear Ridge/ Dyke	4.97	1.54
4	Moderately buried Pediplain	52.99	16.44
5	Pediment	44.73	13.88
6	Pediplain Canal Command	14.63	4.54
7	Ridge type Structural Hills	10.33	3.21
8	Shallow Flood Plain	6.79	2.11
9	Shallow buried Pediplain	186.27	57.79
	Total Area	322.35	100.00

3.7.11 GEOLOGY

The regional geology of the study area is shown below in Figure 3.17. The majority of the buffer zone is composed of Fissile hornblende gneiss (60.90 %), followed by Charnockite formation (23.74 %). The lease area falls under Charnockite category. The geology of the study area is detailed below.

Sl.No.	GEOLOGY	Area in Sq.Km	Area in Percentage
1	Calc granulite and Limestone	1.57	0.49
2	Charnockite	76.53	23.74
3	Fissile hornblende gneiss	196.32	60.90
4	Granite	0.59	0.18
5	Magnetite quartzite	3.79	1.18
6	Pyroxene granulite	6.13	1.90
7	Quartz vein	1.15	0.36
8	Soil and Alluvium	36.28	11.26
	Total Area	322.35	100.00

3.7.12 LITHOLOGY

The study area is mainly dominated by Quartz vein (70.88%) followed by Granite (21.32 %). The applied lease area falls under Granite category. lithology of Core & Buffer Zone map is given in Figure 3.19. Lithology of the study area is detailed below.

Sl.No.	Lithology	Area in Sq.km
1	Garnet – biotite gneiss	0.36 (0.11 %)
2	Granite	68.71 (21.32 %)
3	Nephelene syenite	7.05 (2.19 %)
4	Purple conglomerate	0.01 (0.003%)
5	Quartz vein	228.47 (70.88 %)
6	Sand and Silt	16.75 (5.20 %)
7	Tindivanam granite	0.99 (0.31 %)

3.7.13 SOIL TYPE

The major soil type found in the buffer zone are Sandy Loam (65.05%), followed by sandy Clay (32.69%). The lease area falls under Sandy Loam category. The soil type of the study area is detailed below.

Sl.No.	SOIL TYPE	Area in Sq.Km	Area in Percentage
1	Loamy sand	7.30	2.26
2	Sandy clay	105.37	32.69
3	Sandy loam	209.68	65.05
	Total	322.35	100.00

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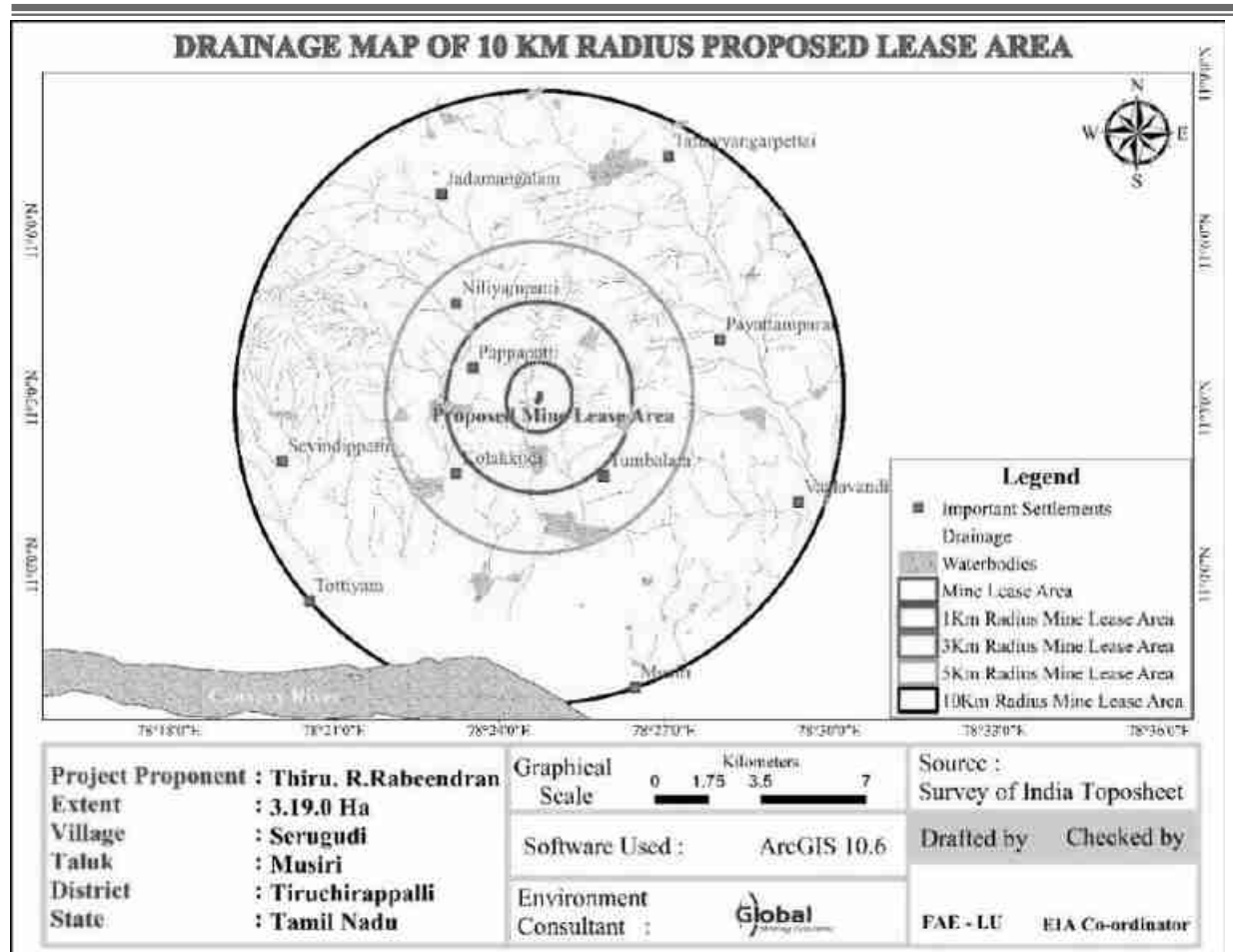


Figure 3.16 Drainage map of the study area

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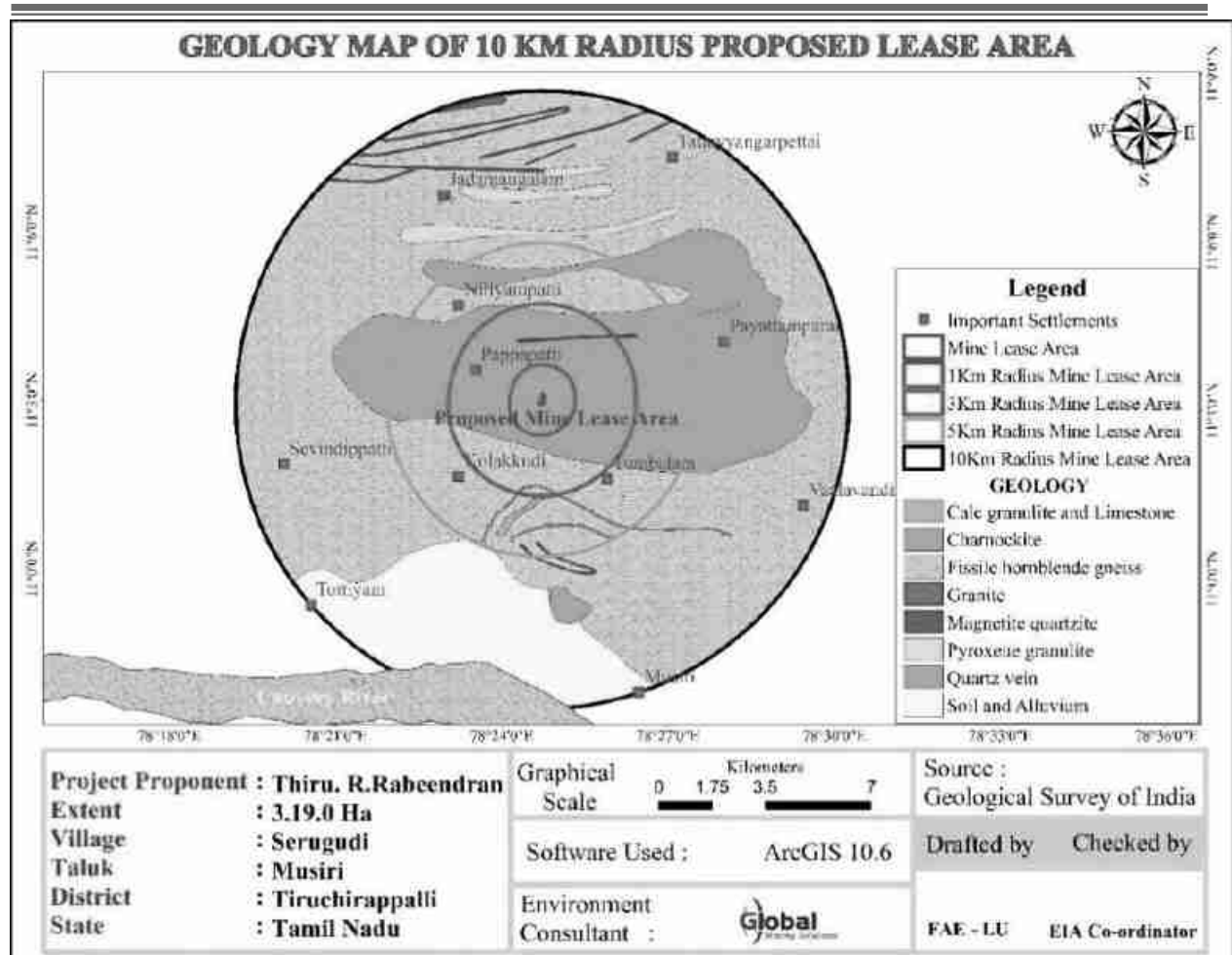


Figure 3.17 Geology map of the study area

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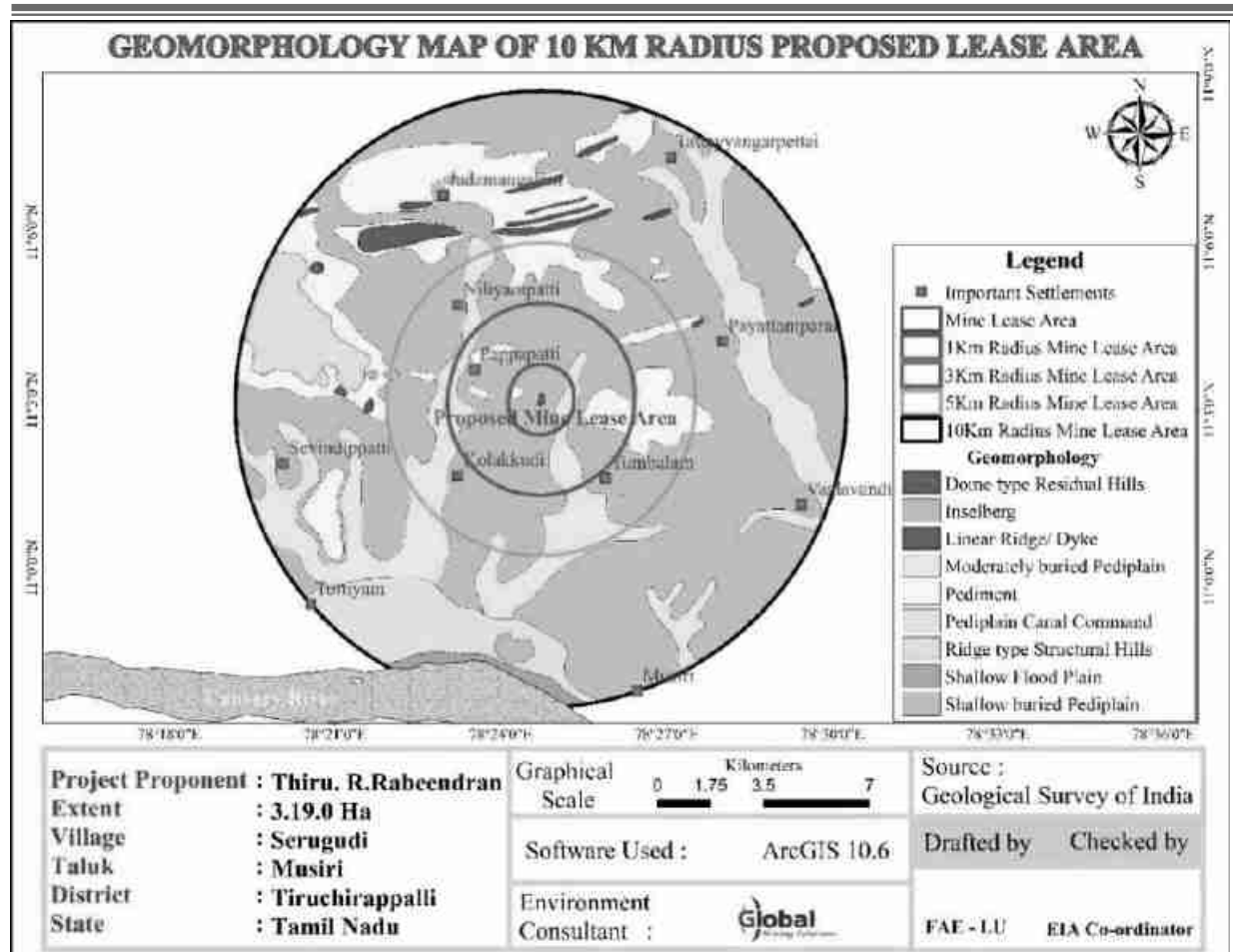


Figure 3.18 Geomorphology map of the study area

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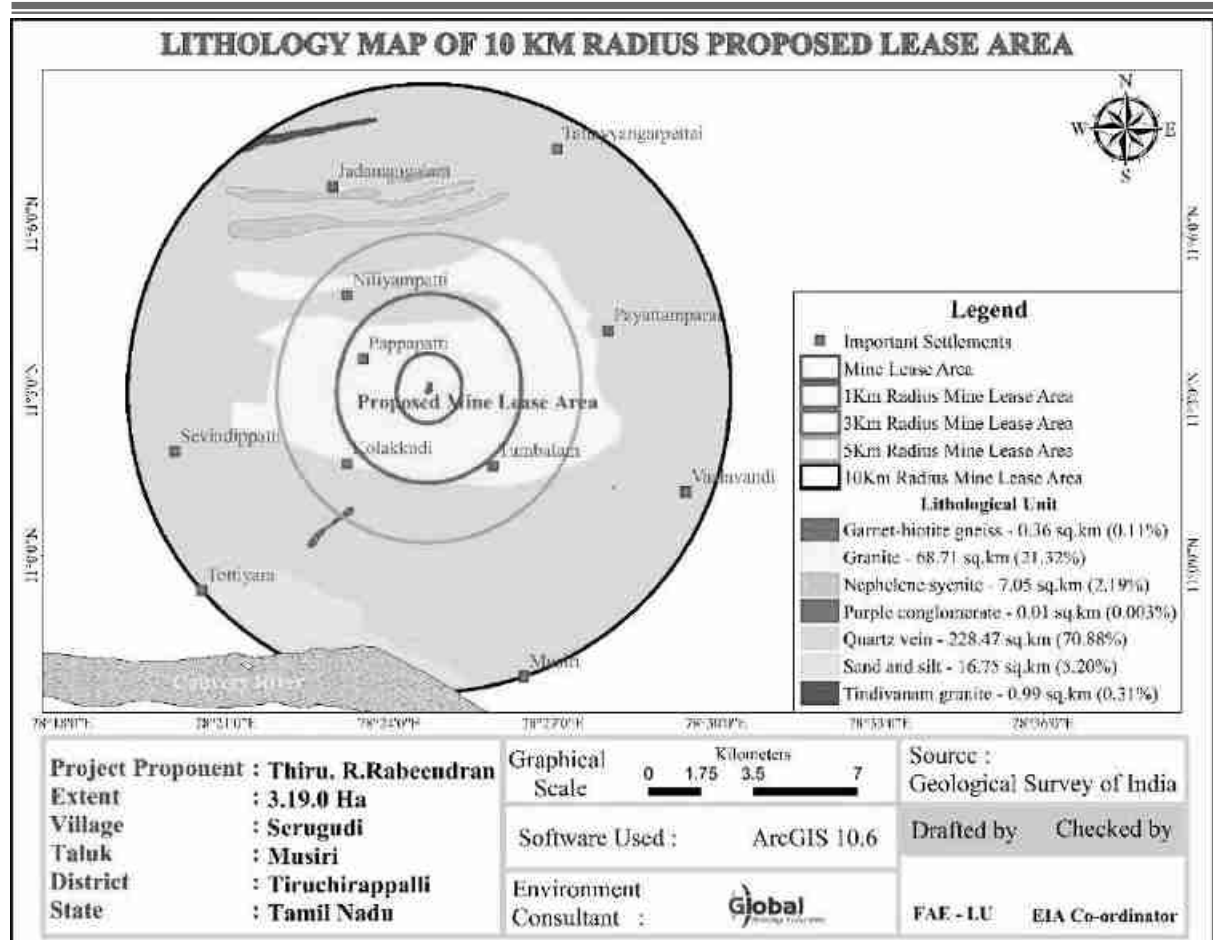


Figure 3.19 Lithology map of the study area

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

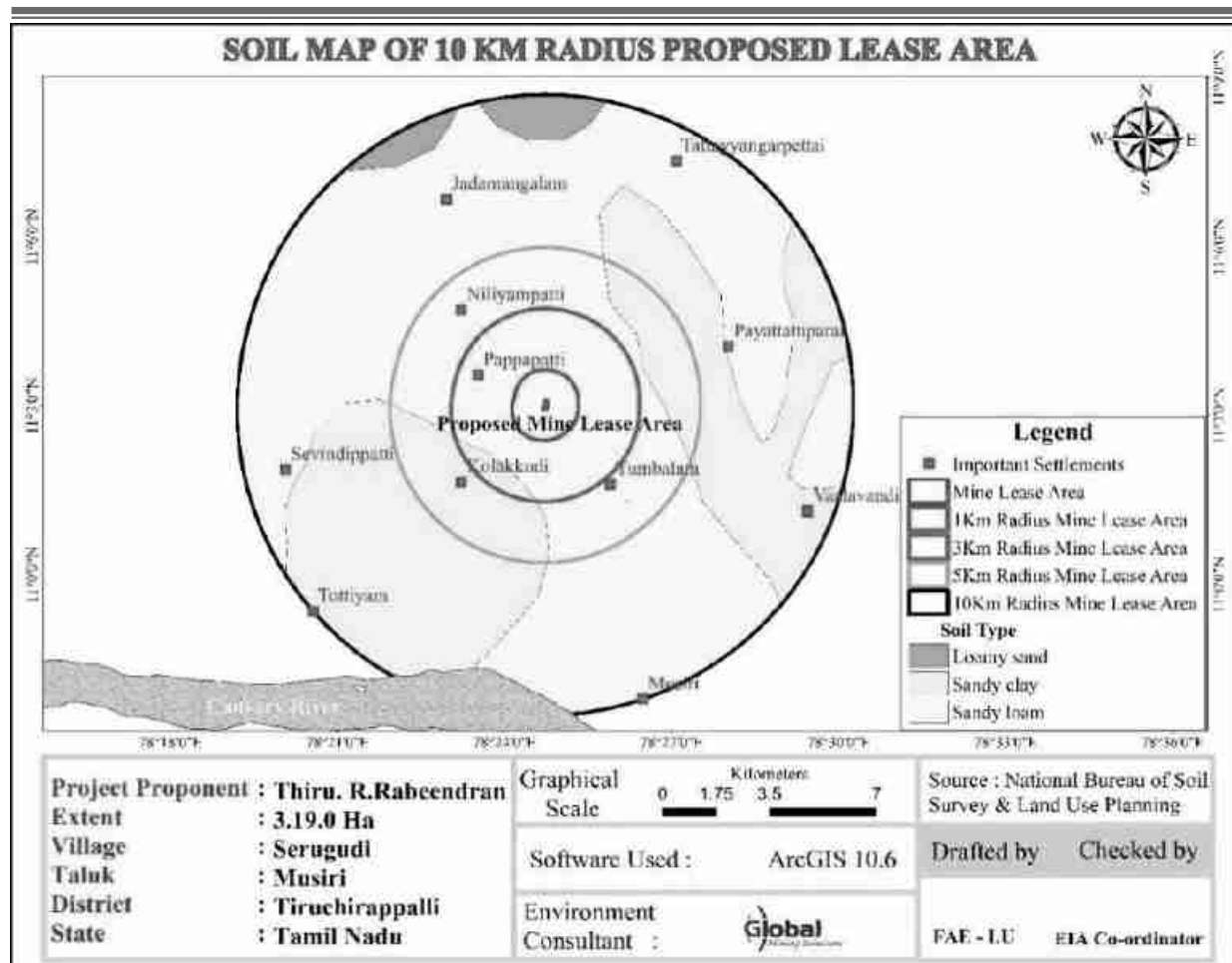


Figure 3.20 – Soil Type Map of the Study Area

3.7.14 SOCIO-ECONOMIC ENVIRONMENT

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

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

3.7.14.1 OBJECTIVES OF THE STUDY

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

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

3.7.14.2 SCOPE OF WORK

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

3.7.14.3 DETAILS OF VILLAGES

The project is located in Musiri Taluk, Tiruchirapalli District. The total population of the district is 27,22,290 which comprise of 13,52,284 Males and 13,70,006 Females. There are 37 rural villages and one urban area in the study area. The villages located in the study area is given in figure 3.21 below.

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

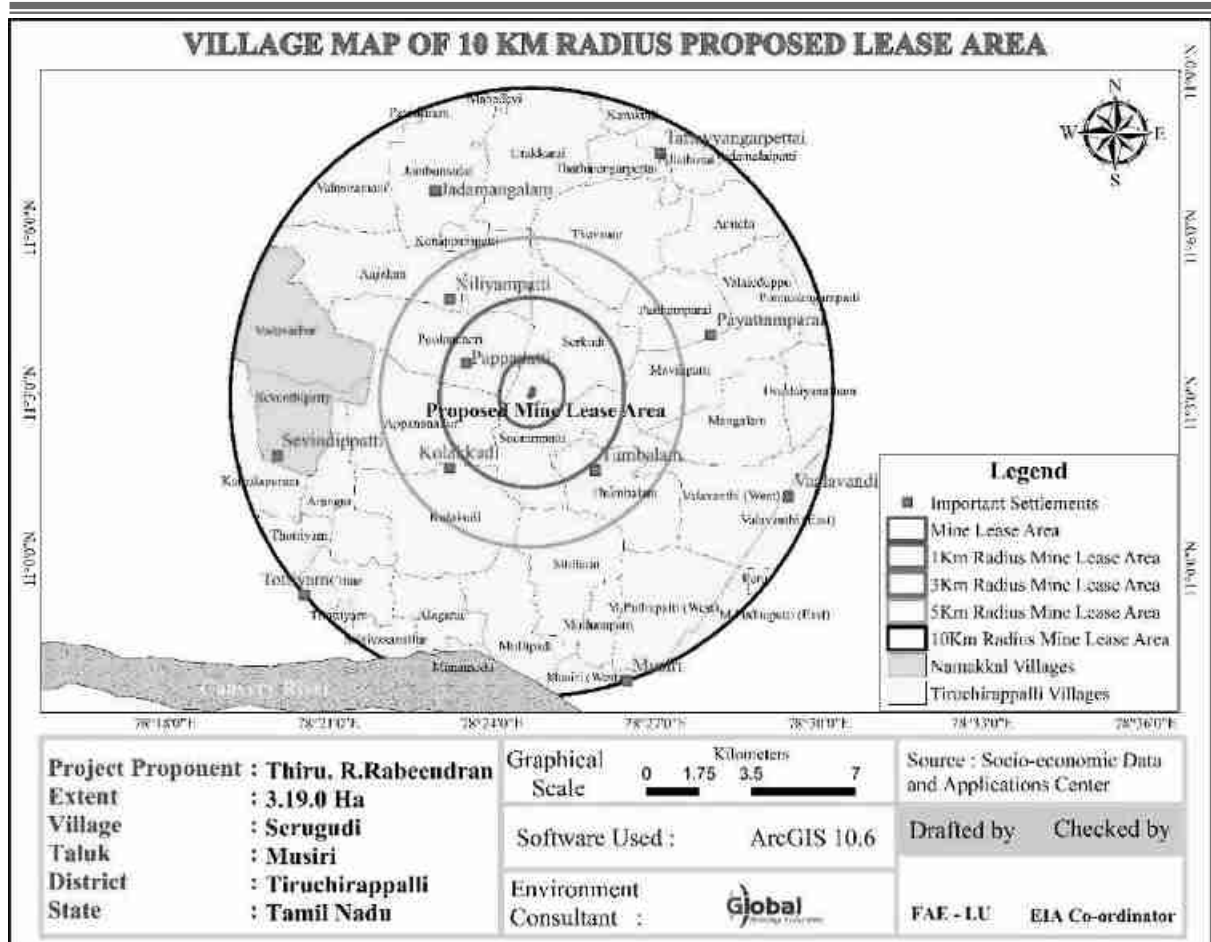


FIG 3.21 VILLAGE MAP OF THE STUDY AREA

Basic Amenities

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

Table 3.18 Population profile of the study area		
Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	160862	50.20
Female Population	159603	49.80
Total	320465	100
B. Population break-up by Caste		
Scheduled Caste	61190	19.10
Scheduled Tribes	168	0.05
Others	259107	80.85
Total	320465	100
C. Literacy Level		
Total Literate Population	209960	65.51
Others	110505	34.49
Total	320465	100
D. Occupational structure		
Main workers	156319	48.77
Marginal workers	19509	6.08
Total Workers	175828	54.85
Total Non-workers	144637	45.15
Total	320465	100

The above table shows that the male and female population ratio are almost equal. Among the total population 0.05% belong to Scheduled Tribes, 19.10 % are Scheduled Caste and the balance 80.85 % people belong to other castes. Among the total population, 65.51 % of the people are literate. Among the total population, 37.0 % are literate males and 28.52 % are literate females. The results are plotted in figures below.

Table 3.19 Population profile – Serugudi Village

Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	1065	49.98
Female Population	1066	50.02
Total	2131	100
B. Population break-up by Caste		
Scheduled Caste	571	26.8
Scheduled Tribes	0	0
Others	1560	73.20
Total	2131	100
C. Literacy Level		
Total Literate Population	1508	70.53
Others	623	29.47
Total	2131	100
D. Occupational structure		
Main workers	826	38.76
Marginal workers	388	18.20
Total Workers	1214	56.96
Total Non-workers	917	43.04
Total	2131	100

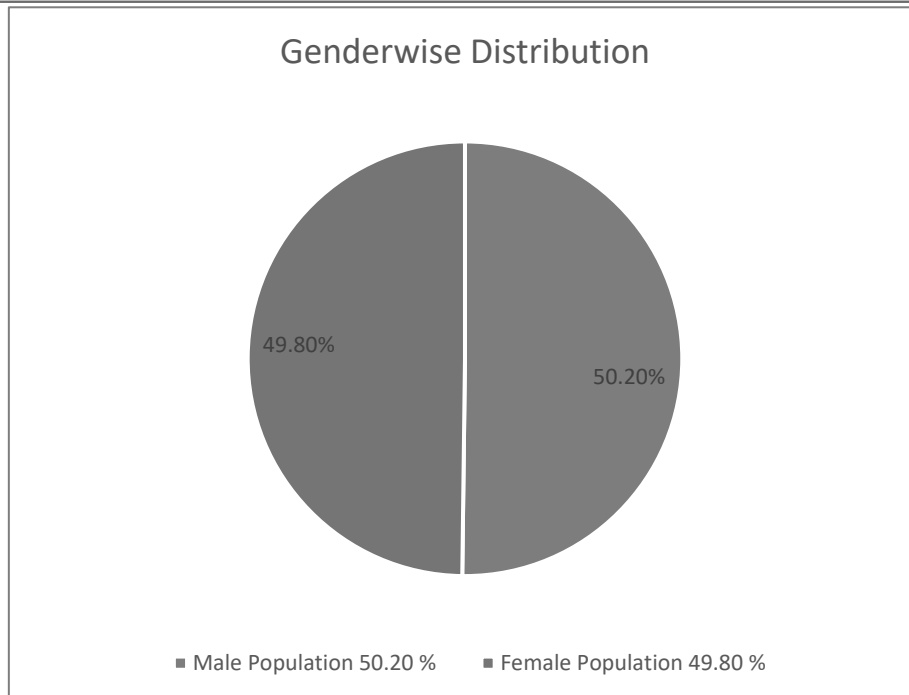


FIG 3.22 GENDER-WISE POPULATION DISTRIBUTION

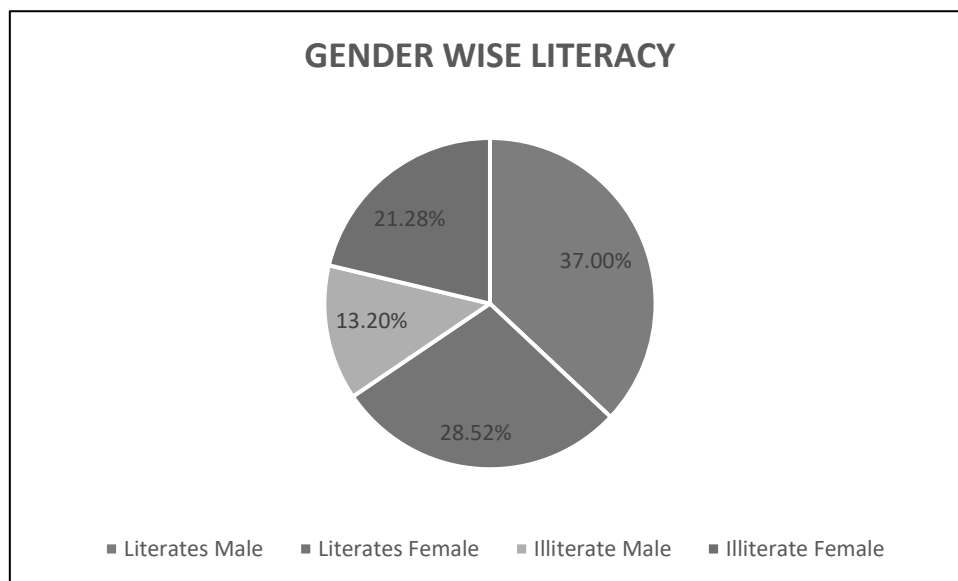


FIG 3.23 GENDER WISE LITERACY DISTRIBUTION

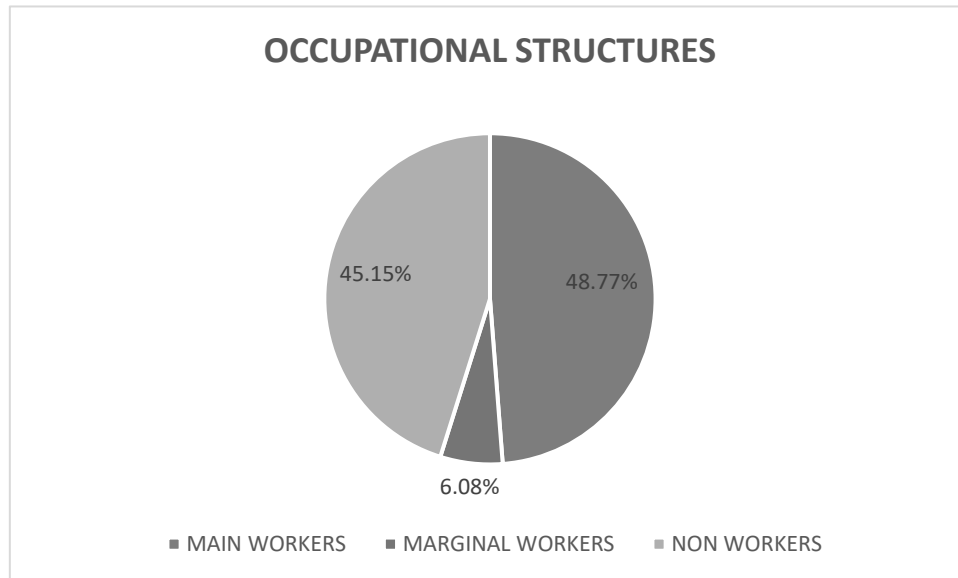


FIG 3.24 OCCUPATIONAL STRUCTURE WITHIN BUFFER ZONE

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

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

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

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

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

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

- Land environment
- Soil environment

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

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

4.1 LAND ENVIRONMENT

The proposed mining activity will be taking place in the existing quarry. The dimension of the existing pits is given below.

Pit No	Length (Max) in m	Width (Max) in m	Depth (Max) in m
I	60	19	6m BGL
II	66	36	8 m BGL

The extent of pit and depth of pit will be increased in the proposed mining plan period.

4.1.1 Anticipated Impacts and mitigation measures

Aspect	Impact	Mitigation measures																																															
<p>Topography</p>	<p>The area exhibits almost plain covered by top soil formation. Quarrying activity will lead to change in geological setting of the area i.e., Due to the quarrying activity in the mine lease area will lead to affect the aesthetic view on the environment. Further, due to the movement of heavy vehicles in and around the mine lease area will lead to affect the surrounding agricultural lands, ecology and biodiversity, human habitations due to the emissions from vehicles like SO₂, NO_x, PM₁₀, PM_{2.5}, etc., The existing land use pattern is given as under.</p> <table border="1" data-bbox="450 842 1088 1230"> <thead> <tr> <th>Land Use</th> <th>Present Area (Hect)</th> <th>Area in use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>Quarrying Pit</td> <td>0.35.0</td> <td>2.54.0</td> </tr> <tr> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>Roads</td> <td>0.01.0</td> <td>0.02.0</td> </tr> <tr> <td>Green Belt</td> <td>0.01.0</td> <td>0.62.0</td> </tr> <tr> <td>Unutilized</td> <td>2.82.0</td> <td>NIL</td> </tr> <tr> <td>Total</td> <td>3.19.0</td> <td>3.19.0</td> </tr> </tbody> </table> <p>The proposed ultimate pit dimension of the mine lease area is given below.</p>	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)	Quarrying Pit	0.35.0	2.54.0	Infrastructure	Nil	0.01.0	Roads	0.01.0	0.02.0	Green Belt	0.01.0	0.62.0	Unutilized	2.82.0	NIL	Total	3.19.0	3.19.0	<p>The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out only up to 46m BGL. At the end of mining period, the quarried pit will act as a water reservoir to store the rain water.</p> <p>Land Use at the end of mine will be as follows.</p> <table border="1" data-bbox="1155 619 1944 852"> <thead> <tr> <th>Land Use</th> <th>Area in use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>Area left for water body</td> <td>2.54.0</td> </tr> <tr> <td>Green Belt</td> <td>0.62.0</td> </tr> <tr> <td>Remaining area</td> <td>0.03.0</td> </tr> <tr> <td>Total</td> <td>3.19.0</td> </tr> </tbody> </table> <p>At the mine closure stage, 2.54 Ha of lease area will be left as rain water harvesting pond. 0.62 Ha will be developed with green belt.</p> <p>Greenbelt shall be developed around the mine lease area and the details has been given below.</p> <table border="1" data-bbox="1182 1075 1917 1361"> <thead> <tr> <th>Year</th> <th>Species</th> <th>No. of trees</th> <th>Spacing</th> <th>Survival</th> </tr> </thead> <tbody> <tr> <td>I</td> <td rowspan="4">Azadirachta indica</td> <td>200</td> <td rowspan="4">3m x 3m</td> <td rowspan="4">80%</td> </tr> <tr> <td>II</td> <td>200</td> </tr> <tr> <td>III</td> <td>200</td> </tr> <tr> <td>IV</td> <td>200</td> </tr> </tbody> </table>	Land Use	Area in use during the quarrying period (Hect)	Area left for water body	2.54.0	Green Belt	0.62.0	Remaining area	0.03.0	Total	3.19.0	Year	Species	No. of trees	Spacing	Survival	I	Azadirachta indica	200	3m x 3m	80%	II	200	III	200	IV	200
Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)																																															
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DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

		Ultimate Pit dimension at the end of Mining plan Period				<table border="1"> <tr> <td>V</td> <td></td> <td>200</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Total</td> <td>1000</td> <td></td> <td></td> </tr> </table>				V		200			Total		1000		
V		200																	
Total		1000																	
Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)																
I	246	103	46 BGL																
		If mining is not done systematically it will leads to the dumping failure in the mining area.				<p>Due to the thick vegetation around the mine lease area and sprinkling of water around the haul roads the dust emissions arises from the vehicles will be controlled.</p> <p>At the end of mining period, fencing will be provided around the mine lease area to arrest the entry of public/cattle to the mining area.</p> <p>The rough stone is proposed to quarry 5m bench height and 5m width with 80° slope and with conventional opencast Mechanized method. As per the approved mining plan a safety distance of 10 m and 7.5m shall be provided to the adjoining Government land and patta land. There is overburden in the form of topsoil, after excavation, it will be utilized for afforestation purpose. The excavated rough stone will be directly loaded into tipper to the needy crusher/other buyers.</p>													
Drainage	Mine drainage is surface water or groundwater that drains from an active or abandoned mine. One of the adverse impact of mine drainage is it will contaminate the ground water.			As per the approved mining plan the ultimate pit limit is 46m BGL. The ground water table is reported as 58 m BGL. In the proposed mining plan only 46 m (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.															
Soil Quality and Agriculture	In monsoon seasons due to the excavation of minerals soil erosion and sediment deposition will occur in the nearby water bodies.			It is proposed to quarry upto a depth of 46m BGL and the nearby water table is 58m BGL. So, the mining activity will not affect the ground water. To prevent the soil erosion during monsoon season, garland drain will be constructed with silt traps.															

DRAFT EIA EMP REPORT FOR PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

Visual impact on surrounding environment	Quarrying activities and rock extraction generally cause several environmental effects on the surrounding areas. The alteration of landscape due to activities like excavation, drilling or blasting, in particular, often generates a visual impact on the receptors set in the surroundings. Among these effects, the shape, extent, or chromatic contrast of the mining surface with the original land form may represent a huge loss of appeal for the growth of new urban settlements.	The reclamation of the post mined quarry surface is aimed at restoring the ecological balance taking into account geological parameters but also local flora and climate. Further the ultimate depth of mining is 46m BGL. In the post mining stage the quarried out pit will be used for rainwater harvesting. At the mine closure stage, 2.54 Ha of lease area will be left as rain water harvesting pond. 0.62 Ha will be developed with green belt.
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4.2 SOIL ENVIRONMENT

4.2.1 ANTICIPATED IMPACT

Mining activities often disrupt the existing environment as they involve disturbing the untouched earth materials. The massive Charnockite formation is noticed below 1 m (Avg) top soil and slopping towards southeastern side of the area. The altitude of the area is above 143m (Max) from MSL. After excavation of topsoil will be utilized for afforestation purpose. During rainy season surface run off may cause sedimentation in low lying areas.

4.2.2 MITIGATION MEASURES FOR SOIL EROSION AND SOIL CONSERVATION

- Runoff water will be collected in bottom of the quarry and used for plantation and dust suppression during dry season.no run off water will be discharged beyond lease area.
- Wet drilling and haul road water sprinkling will be carried out to minimise air born dust at source level, which may cause soil pollution due to sedimentation.
- Garland drains will be constructed around the project area with silt traps to control the soil erosion during rainy seasons.
- Greenbelt development (0.62.0 Ha.) all along the periphery of the project area (i.e., 7.5 m and 10 m safety barrier) will ensure binding strength and minimizes soil erosion.
- Soil sampling will be carried out in the core zone for every season to ensure the soil quality is not affected due to the quarrying activities.

4.2.3 SEVEN EFFECTIVE EROSION CONTROL MEASURES

Planting Vegetation

- This method entails planting vegetation with deep roots to ensure the soil is held in place, which is particularly important in areas that are more susceptible to erosion, like hillsides, steep slopes, and along streams and rivers.
- The flow of water is impeded by vegetative barriers due to densely concentrated thick stems. They can spread the water runoff to flow through them slowly without erosion. Plants that would serve the purpose of erosion

control include deep-rooted native plants like native prairie grasses, wildflowers, and woody perennials.

The Application of Mulches

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

Reforestation

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

Erosion Control Blankets and Anchoring Devices

- Erosion control blankets, geotextiles, mats, and various plastic covers are typically used to control soil erosion in the early stages of growing vegetation or for temporary stabilization during construction projects. These measures are made from natural or synthetic materials designed to hold soil in place and allow vegetation to grow through them. They work by slowing down the flow of water, protecting the soil from wind and rain, and promoting the establishment of vegetation.

- Anchoring devices are used to secure erosion control blankets in place. They are normally made of metal or plastic and come in a variety of shapes and sizes, including staples, pins, and stakes. Anchoring devices are inserted through the erosion control blanket and into the soil to hold it in place. Anchoring ensures that the blanket stays put during heavy rain or wind and prevents soil erosion from occurring.

Using Silt Fencing

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

The Application of Seeding

- When it comes to construction and land development projects, there are two main seeding types permanent and temporary.
- Temporary seeding is used to quickly establish vegetation on disturbed soil to reduce erosion during a construction project. Temporary seeding typically involves fast-growing annual grasses. This can be done by spreading seed over the soil surface or by a process called hydro-seeding. Hydro-seeding is the process of spraying a mixture of seed, mulch, fertilizer, and water onto the soil surface.
- Permanent seeding is done to establish long-term vegetation on disturbed soil after construction is complete. Permanent seeding typically uses a mixture of grasses and other native vegetation. The goal of permanent

seeding is to establish a diverse plant community that can help stabilize the soil and prevent erosion over the long term.

Installing Energy Dissipaters

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

4.3 WATER ENVIRONMENT

4.3.1 ANTICIPATED IMPACT ON SURFACE WATER BODY

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

There is no nalla or water body location within the leasehold area. There are one pond, one kuttai and a seasonal odai located within 1 km radius. In the buffer zone of the project site, Rudrajkombai Ar is located 7.0 kilometers to the northeast, and the Cauvery River is situated 8.7 kilometers to the southwest. The details of water bodies are given below.

Pond - 170m (SW)

Kuttai 1 - 190m (SE)

Seasonal odai - 295m (SW)

Kulam 1 - 1.4km (S)

Kulam 2 - 2.1km (W)

Kulam 3 – 3.7km (S)

Odai – 3.0km (NW)

Rudrajkombai Ar – 7.0km (NE)

Cauvery River – 8.7km (SW)

Based on the drainage map given in the Fig.NO.3.16, it is found that there is no stream connect the lease area to the water body. As the proposed mining activity takes place in the existing quarry with 100 % recovery. Moreover, no toxic element will be quarried out or no chemicals or hazardous substances are used during mining process. No other water bodies close to the project site, there is no proposal for discharging of wastewater outside the project area. There is no proposal for a rough stone processing or workshop within the project area, so no effluent is anticipated in the mine.

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

Mitigation Measures:

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

4.3.2 ANTICIPATED IMPACT ON GROUND WATER

The quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 46 m bgl and water table is found at a depth of 58m BGL. No chemical having toxic elements will be used for carrying out mining activity. Also Rough stone does not contain any kind of toxic element which can contaminate the water. So the rain water or water used for drilling purposes which infiltrates into the ground in the lease area does not affect the quality of ground water.

Mitigation measures

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

Ground water environment in buffer zone

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

TABLE 4.1 Ground Water Level Status in Musiri Firka							
S. No.	Firka	Net Annual Ground water availability	Existin g gross ground water consu mption for irrigati on	Existing gross ground water consumptio n for domestic and industrial water supply	Existin g gross ground water consu mption for all uses	Stage of ground water develop ment	Category
1	Musiri	1167.51	834.30	30.71	865.01	74	Semi Critical

Source: nwm.gov.in

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

4.3.3 ANTICIPATED IMPACT DUE TO WATER USE IN MINE'S

The total water requirement for the project will be 7.0 KLD comprising Drinking 1.2 KLD, Dust suppression 3.5 KLD, Greenbelt 1.5 KLD and Domestic purpose 0.8 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.1.

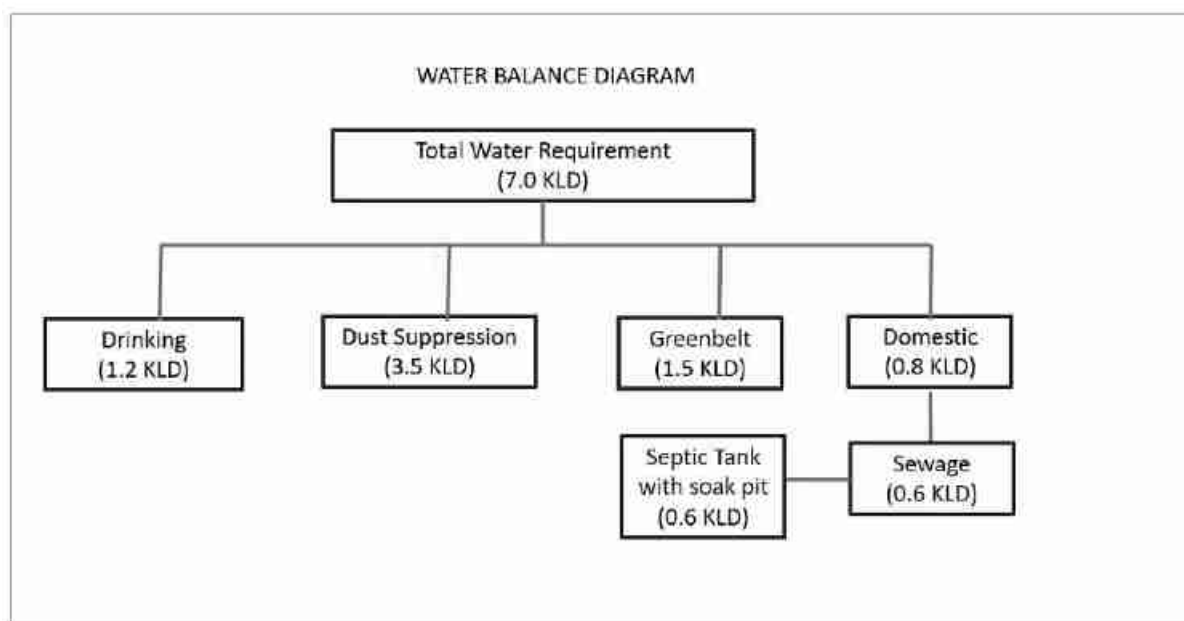


Figure 4.1 Water Balance Diagram

MITIGATION MEASURES

The following mitigation measures are suggested for water management

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

4.3.4 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 823 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	25400	0.8	7,112
Total Harvested Rainfall				7,112

Total surface water runoff is 7,112 Cum per Annum. 10% of this amount will be evaporated and rest 6,400 m³ will be recharged in the rain water harvesting pit.

The dimension of the rain water harvesting pond will be 20m x 20m x20m with capacity of 8000 cu.m. The rain water stored in the pond will be utilized for plantation, dust suppression activities. The capacity of Rain water harvesting post will be sufficient to arrest the surface runoff from the lease area considering the highest amount of rain fall.

4.3.5 AIR ENVIRONMENT

The existing ambient air quality in the area has been described in Chapter-3. Opencast mechanized mining, using jackhammer drilling, blasting, and excavation

through an excavator, as well as mineral transport through tippers, will be carried out for the excavation of rough stone.

4.3.5.1 ANTICIPATED IMPACT

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

The air-borne particulate matter generated by quarrying operations and transportation is mainly 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.

4.3.5.2 MITIGATION MEASURES

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

Table 4.3 Mitigative Measures for Air Environment

S.NO	Activity	Consequence	Mitigative Measures
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

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			Covering of loaded tippers with tarpaulins during transportation Vehicular emissions will be controlled through regular and proper preventive maintenance only PUC valid vehicles will be used for transportation.
5	Greenbelt	Dust emission, Gaseous Emission	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
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.

4.3.5.3 AIR QUALITY IMPACT PREDICTION

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

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.

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.

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 (PM 10 & PM 2.5). The predicted incremental Ground Level Concentrations (GLCs) for particulate matter is likely to be contributed by the proposed project. The average predicted 24 hr average concentration has been tabulated as below.

EMISSION ESTIMATION

The emission estimations for the activities are detailed below.

Table 4.7 - Area Emissions – Total Material handling (Rough Stone)

Quantity, TPA	84115
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	625
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	0.000002121
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Table 4.8 - Line Source – Transport of Rough Stone from Pit to Boundary

Quantity, TPA	84115
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	19995.04
Uncontrolled emission rate g/s/m	5.785601852
Controlled emission rate, PM10 g/s/m	0.4100
Controlled emission rate, PM2.5 g/s/m	0.2110

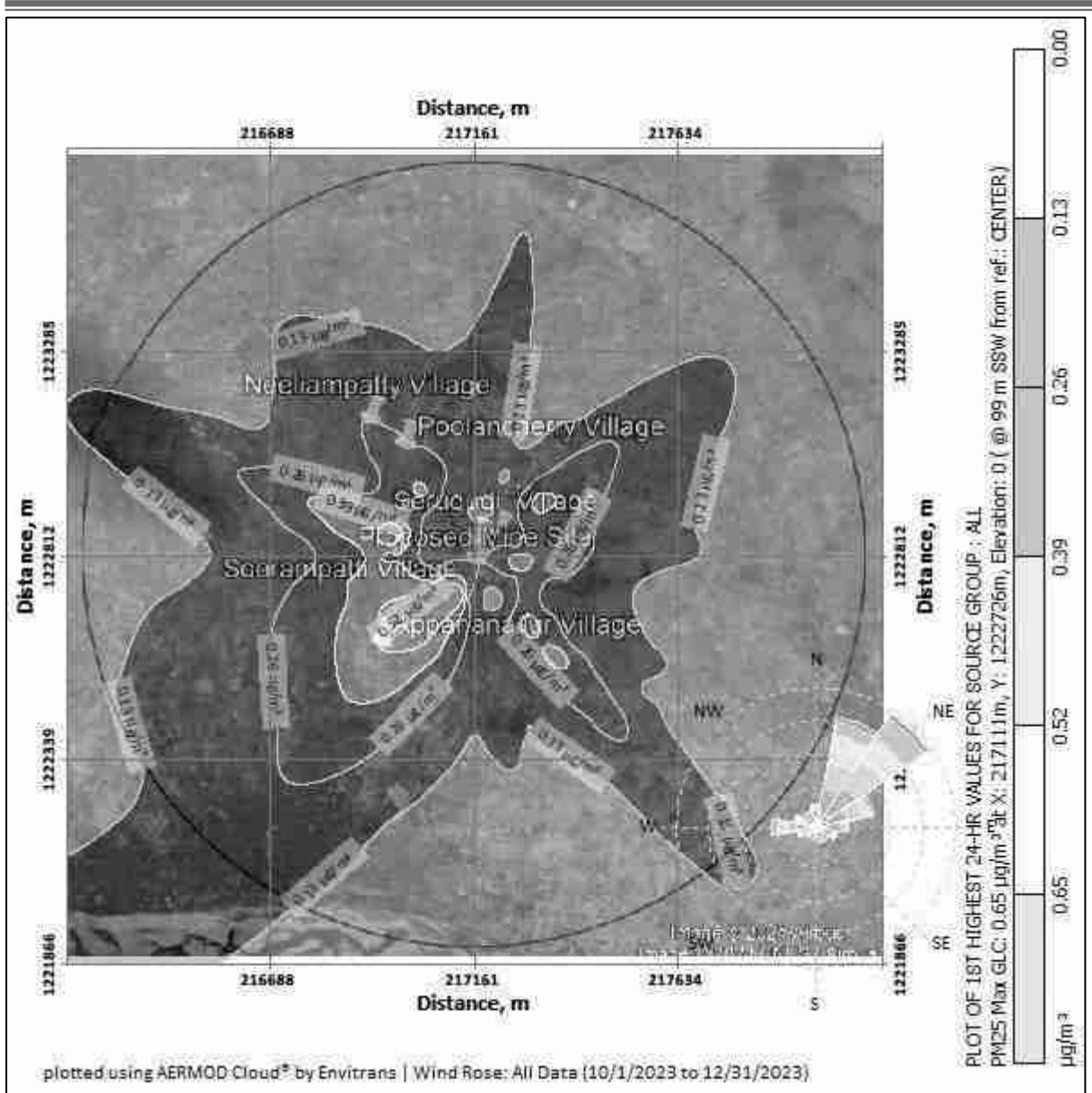


Figure 4.2 Isopleth of GLC Prediction for PM_{2.5}

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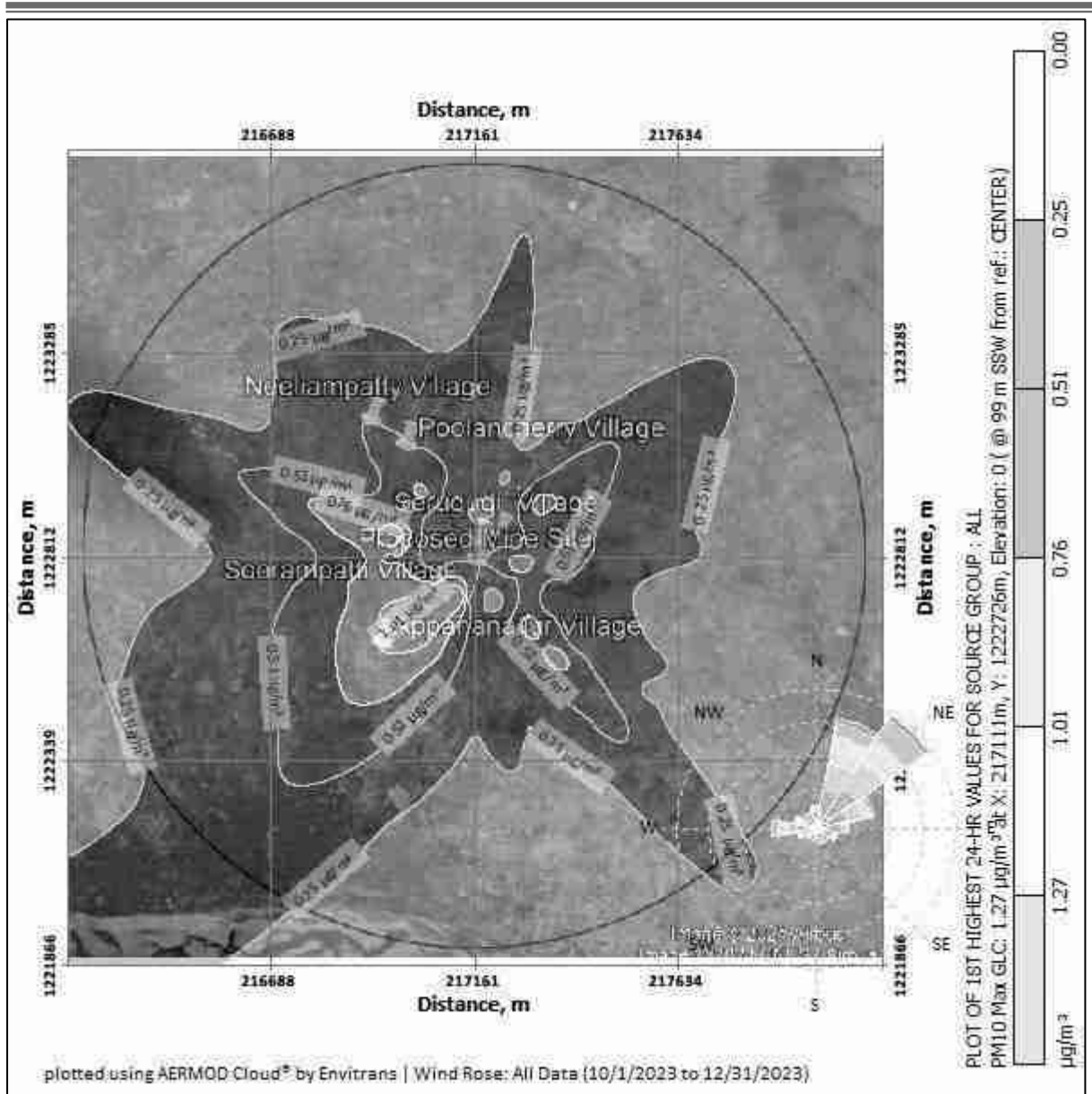


Figure 4.3 - Isopleth of GLC Prediction for PM10

PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.9 to 4.10.

Table 4.9: Concentrations of PM_{2.5} after Project Implementation					
SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	A1-Mine Lease Area	34.5	0.65	35.15	60
2	A2 - Soorampatti Village	31.8	0.63	32.43	
3	A3 - Serugudi Village	28.8	0.36	29.16	
4	A4 - Appananallur Village	25.5	0.40	25.90	
5	A5 - Poolancherry Village	26.1	0.26	26.36	
6	A6 - Neeliampatty Villages	27.0	0.12	27.12	

Table 4.10: Concentrations of PM₁₀ after Project Implementation					
SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	A1-Mine Lease Area	73.5	1.26	74.76	100
2	A2 - Soorampatti Village	66.3	1.0	67.3	
3	A3 - Serugudi Village	60.7	0.80	61.5	
4	A4 - Appananallur Village	55.3	0.70	56.0	
5	A5 - Poolancherry Village	56.6	0.51	57.11	
6	A6 - Neeliampatty Villages	58.40	0.25	58.65	

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 PM₁₀ are in the range of 74.76 µg/m³ to 56.0 µg/m³ and for PM_{2.5} are in the range of 35.15 µg/m³ to 25.90 µg/m³ which are within the statutory limits in each case. The mitigation measures undertaken in the mine for control of air pollution are given below.

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

Carbon Emission

Description	Per Day	Per year	For Five Years
Total fuel consumption in liters	98.3	26,540	1,32,700
Co ₂ emission in kg	263	71,127	3,55,636

4.4.4 IMPACT DUE TO CRUSHER PLANT

crushing operation releases a substantial amount of fugitive dust, which not only pollute the environment, but also pose a health- hazards to the workers and the surrounding population. The major environmental issue due to operation of crushing unit is fugitive dust emissions which is contributed by the crushing process of primary and secondary crushing, screening, tertiary crushing, conveyer belt, product and storage release.

Mitigation Measures:

Source of emission	Mitigation Measures
Unloading of raw material for storage	Water sprinkling with adequately designed nozzle which produce tiny droplets of water will be provided during raw materials unloading.
Unloading of raw material into hopper	Three sides and top will be covered and one side kept open for vehicular movement. Water sprinklers will be provided on approach roads.
Primary Crushing/ Jaw Crusher	Crusher will be completely enclosed by GI/MS sheets on top and three sides s completely from ground level.

	<p>Primary crushers/jaw crushers will be covered with tarpaulin/cotton cloth/suitable materials to contain fugitive dust emissions.</p> <p>Water sprinkler system with adequately designed nozzle which produce tiny droplets of water will be provided at primary crusher/jaw crusher so that fugitive emissions are contained and amount of water sprayed should be optimized.</p>
Secondary Crushing	<p>Crusher will be completely enclosed by GI/MS sheets on top and three sides s completely from ground level.</p> <p>Dry extraction cum bag filter followed by cyclone to be provided for control of emissions.</p>
Screening	<p>Crusher will be completely enclosed by GI/MS sheets on top and three sides s completely from ground level.</p> <p>Flexible covers where conveyors pass through the screen house will be installed at entries and exits of conveyors to screen house.</p> <p>Dust extraction system connected with bag filter to be provided.</p> <p>Provision of water mist sprinkling systems with adequately designed nozzle which produce tiny droplets of water will be made at inlet/outlet of screens.</p>
Tertiary Crushing	<p>Crusher will be completely enclosed by GI/MS sheets on top and three sides s completely from ground level.</p> <p>Water sprinkler system with adequately designed nozzle which produce tiny droplets of water.</p>

Conveyer Belt	Conveyor belts will be properly covered from node to node with a thick sheet of suitable material along with water sprinkling system with adequately designed nozzle which produce tiny droplets of water.
Discharge Point and Product storage	Telescopic chute will be provided at discharge point and end of the conveyer. Water spraying for product size above 5 mm. The product size below 5 mm will be covered to ensure that same is not carried away by wind.

4.4.5 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:

4.4.5.3 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

4.4.5.4 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

4.4.5.5 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.

4.6 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	Mavilippatti R F – 1.3 km (E) Talamalai R -5.5 km (W) FViramachampatti R F -9.5 km (NE) No forests are situated within 1.0 km radius. The proposed	The fugitive dust generated by the mining activity will be suppressed by frequent sprinkling of water based on

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		project does not attract Forest Conservation Act, 1980. There is no wild life sanctuaries found around 10km radius and the area does not attract Wildlife Protection Act, 1972 and C.R.Z. Notification, 1991.	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 water to wildlife	„NO“ scheduled or threatened wildlife animal sighted regularly in core area. There is no proposal for discharge of wastewater to nearby water bodies.	NIL
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

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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.	Since it is an existing, there are no trees present in the excavated pit. The Mining activity will be carried within the existing 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	-	-	-
Ecological Impact on Surrounding / Eco sensitive habitat due to Noise generated	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	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

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from the project activity.			transportation period. (5 years)		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.

4.6.1 ANTICIPATED IMPACT

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

4.6.2 MITIGATION MEASURES

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

4.6.3 GREENBELT DEVELOPMENT PLAN

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

Table – 4.14 GREENBELT DEVELOPMENT PLAN

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

Nearly 0.62 Ha. of area is proposed for Greenbelt development by planting 80 Nos of trees during every year and expected growth is around 64 Nos @ survival rate of 80%.

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

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

Table 4.15 Budget for Greenbelt Development Plan

Activity	Year					Cost	Total Cost	
	I	II	III	IV	V		Capital Cost	Recurring cost /Annum
Plantation – inside lease area	62	62	62	62	62	@ 200 / Saplings (capital) and @ 30 per plant maintenance (recurring)	62,000	9,300
Plantation – Outside	257	257	257	257	257	@ 300 / Saplings (capital)	3,85,500	38,550

lease area						and @ 30 per plant maintenance (recurring)		
Total							4,47,500/-	47,850/-

4.7 SOCIO – ECONOMIC

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

Anticipated Impact

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

The mining operations in the proposed mine will employ about 30 persons directly and 10 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.

Mitigation Measures

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

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

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

4.8 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.

4.9 WASTE MANAGEMENT

4.9.1.1 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.

4.9.1.2 LIQUID WASTE

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 0.6 KLD will be discharged in soak pit via septic tank.

4.9.1.3 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.

4.9.1.4 PLASTIC WASTE

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

5.0 ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 ALTERNATE TECHNOLOGY

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

5.2 ALTERNATE SITE

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

6 ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

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

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

6.2 MONITORING MECHANISM

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

6.3 ENVIRONMENTAL MONITORING SCHEDULE AND FREQUENCY

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

complaints. The monitoring schedules to be adopted in this quarry are given below.

Table 6.1 Environmental Monitoring Schedule

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

6.4 BUDGET FOR IMPLEMENTAION

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and Monitoring work will be outsourced to external laboratory approved by NABL / MoEF. Total EMP Cost for 5 years is 162.93 lakhs i.e., Rs.22.19 Lakhs of Capital + Recurring cost Rs. 140.74 lakhs for Five years. The breakup of EMP cost are detailed in Table 10.2 of Chapter 10.

6.5 SUBMISSION OF PERIODICAL REPORTS

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

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

Periodical reports to be submitted to: -

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

7 ADDITIONAL STUDIES

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

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Mine Closure Plan
- 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 final EIA/EMP report for approval by SEIAA, Tamil Nadu.

7.2 RISK ASSESSMENT

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

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

Table 7.1 Risk Assessment and Control Measures

S.NO	Risk Factor	Causes of risk	Control Measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	<p>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.</p> <p>Fire-fighting and first-aid provisions in the mine office complex and mining area.</p> <p>Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use.</p> <p>Quarry operation will be done as per approved mining plan and other applicable statutory guidelines issued by DGMS, Dept. of Mining & Geology-TamilNadu.</p> <p>Handling of explosives, charging and firing shall be carried out under competent statutory persons.</p> <p>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.</p>
2	Drilling	Improper and unsafe practices. Due to high pressure of compressed air, hoses may burst. Drill Rod may break.	<p>Safe operating procedure established for drilling (SOP) will be strictly followed.</p> <p>Only trained operators will be deployed.</p> <p>No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places.</p> <p>Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</p>

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

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

Table 7.2 Details of Quarries within 500m radius

Sl. No	Name of the Quarry Owner (Tvl.)	S.F. Nos, Village & Extent (Ha)	Lease Period	Remarks
a. Abandoned Quarry				
1	Thiru.D.Dharmalingam S/o.Devendran,19A/9, Natarajapuram,Musiri Taluk, Tiruchirappalli	S.F.No:411/1 (Part), Serukudi Village, 3.95.5 Ha	5 Years 02.06.2008 to 01.06.2013	Abandoned
b. Existing Quarry				
1	Thiru.D.Krishnamoorthy, S/o.Devendran, 19A/9, Natarajapuram, Musiri Taluk,	S.F.No:365/1, 369/1 and 370/1, Serukudi Village, 3.57.5 Ha	5 Years 11.05.2022 to 10.05.2027	Existing

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Tiruchirappalli				
c. Proposed Quarry				
1	Thiru.R.Rabeendran, S/o. Rengarajan No.452/54.E2, V.O.C Nagar main road, Lalgudi Taluk, Tiruchirappalli District	S.F.No: 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part), Serugudi Village, 3.19.0 Ha	Proposed Quarry	-

As seen above, although the individual lease area of this project is less than 5 hectares, the existing Quarry (1 No) within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 6.76.5 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

7.4.1 AIR ENVIRONMENT

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

Table 7. 3 Salient Features of Existing & Proposed Quarries

Description		P1	P2
Name of the Quarry		Thiru.R.Rabeendran	Thiru.D.Krishnamoorthy
Precise Area Letter No.		Rc.No.427/2022/Kanima m dated 17.05.2023	RC.No. 311 / 2016 Mines Dated 03.02.2017
Geological Resources in m ³	Rough stone	14,32,575	3,57,910
Mineable Reserves in m ³	Rough stone	4,09,762	1, 63,565
Production per day in m ³	Rough stone	280	131
Lorry Loads per day in Nos	Rough stone	28	13
Employment in Nos	-	30	11
Proposed Depth in meters	-	46 bgl	11
Status of the quarry	-	Proposed	Existing

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Method of mining	-	Opencast mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers	
Lease Period	-	5 years	5 Years 11.05.2022 to 10.05.2027
Environmental Sensitive Features	-	NIL	NIL

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

7.4.2.1 EMISSION ESTIMATION FROM CLUSTER

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 $\mu\text{g}/\text{m}^3$
1	A1-Mine Lease Area	34.5	<1	35.5	60
2	A2 - Soorampatti Village	31.8	<1	32.8	
3	A3 - Serugudi Village	28.8	<1	29.8	
4	A4 - Appananallur Village	25.5	<1	26.5	
5	A5 - Poolancherry Village	26.1	<1	27.1	
6	A6 - Neeliampatty Villages	27.0	<1	28.0	

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

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	A1-Mine Lease Area	73.5	1.43	74.93	100
2	A2 - Soorampatti Village	66.3	1.28	67.58	
3	A3 - Serugudi Village	60.7	1.12	61.82	
4	A4 - Appananallur Village	55.3	<1.0	56.3	

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5	A5 - Poolancherry Village	56.6	<1.0	57.6	
6	A6 - Neeliampatty Villages	58.40	<1.0	59.40	

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 PM₁₀ are in the range of 74.93 µg/m³ to 56.30 µg/m³ and for PM_{2.5} are in the range of 35.5 µg/m³ to 26.50 µg/m³ which are within the statutory limits in each case.

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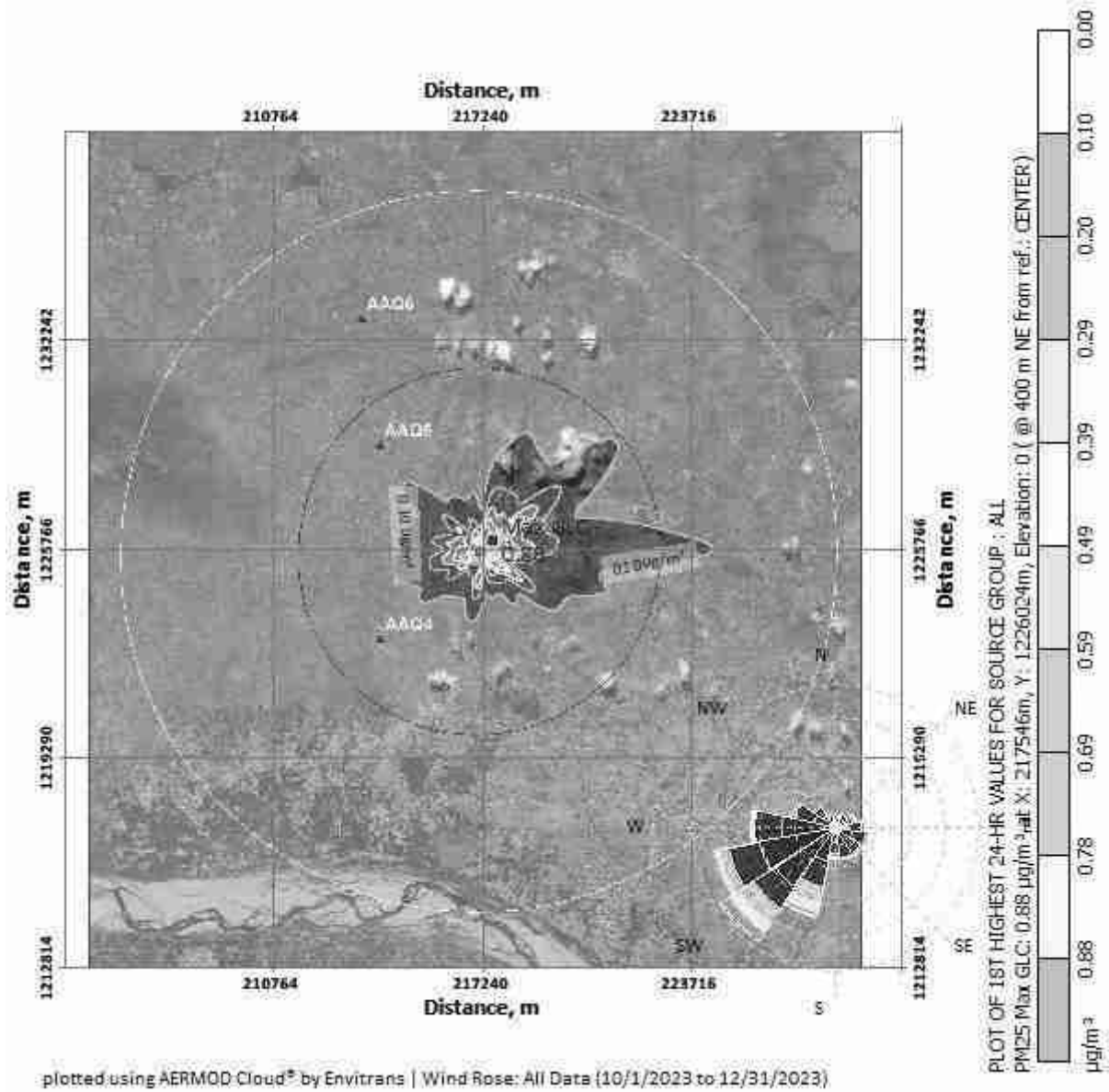


Figure 7.1 Cluster Isopleth of GLC Prediction for PM_{2.5}

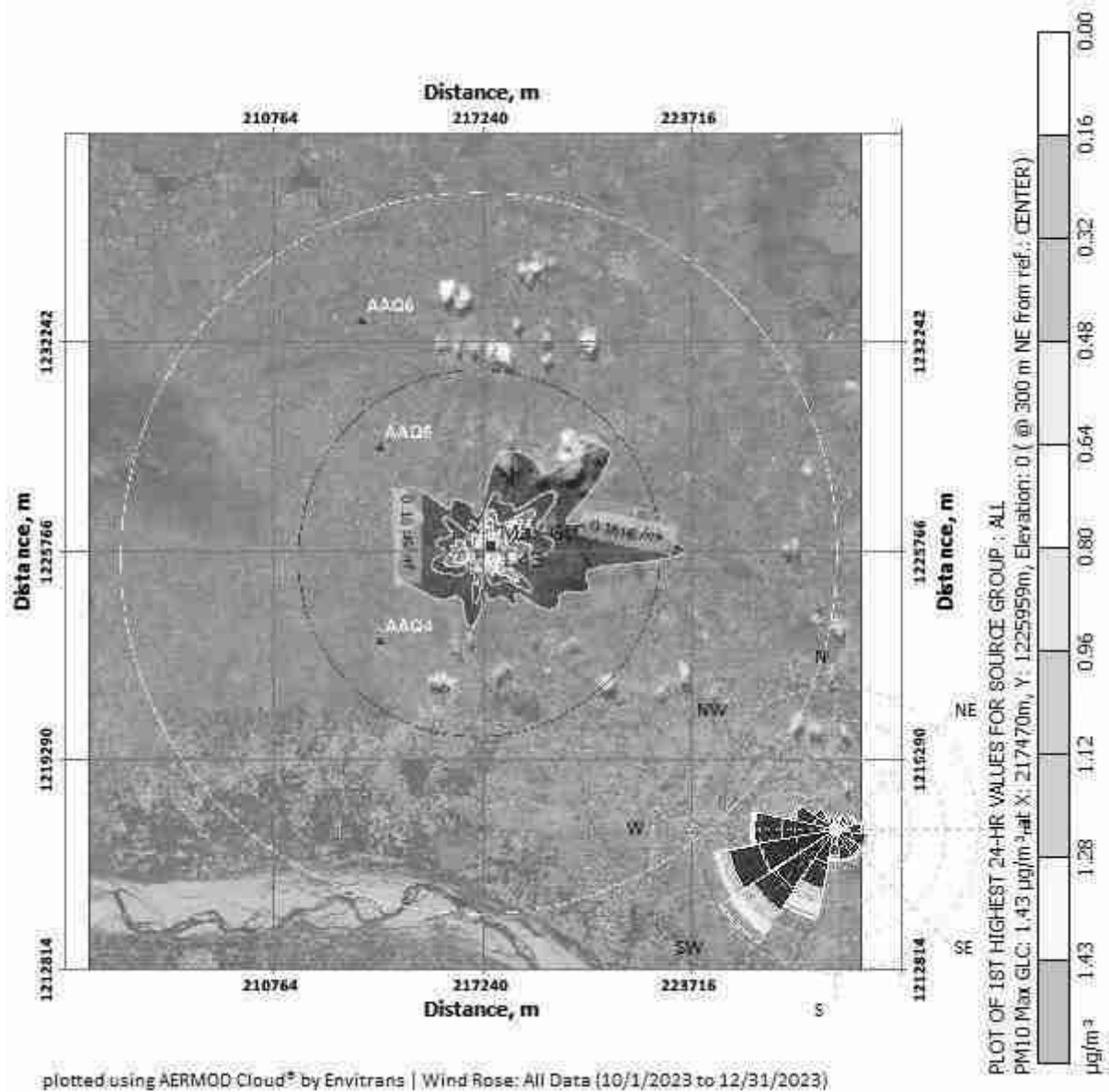


Figure 7.2 - Cluster Isopleth of GLC Prediction for PM₁₀

7.4.3 CUMULATIVE IMPACT ON TRAFFIC

The mined out minerals will be transported by means of trucks to the own crusher located at a distance of 200 m in west direction for producing stone aggregates of different. The cumulative impact on traffic due to transportation of minerals from these three leases are provided below:

Table 7. 6 – Impact on Traffic

Quarry	Description	Rough Stone
P1	No. of Lorry Load per day	28
P2		13
Total		41

As one quarry already exist, they are part of the current traffic. The proposed project will bring 28 trips per day. The existing road can absorb this additional traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

7.4.4 WATER ENVIRONMENT

The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. From the nearby working quarries it is observed there are no seepages in the mine faces because of the hard rock formation. The ground water table in this area is 55 – 58 m and the proposed ultimate depth is upto 46 m bgl. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.

Besides, the stage of groundwater development of Musiri Taluk where the study area falls is 74% as per the National Water Mission. In view of this, this area can be categorized as Semi Critical from ground water development point of view. Thus there is scope for further ground water development.

7.4.5 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.

Table 7.7 SOCIO ECONOMIC BENEFITS FROM 2 MINES

	Employment	Project Cost	CER
P1	30	Rs. 94,14,000/-	Rs.500000/-
P2	11	Rs. 64,73,000/-	Rs 1,58,000/-
Total	41	Rs.1,58,87,000/-	Rs.6,58,000/-

7.5 CLUSTER MINE CLOSURE PLAN

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

7.6 SLOPE STABILITY PLAN

The factors that affect slope stability of the mine are detailed below.

- Geological structure comprising dip, intervening shear zone formation, clay intrusion, joints / discontinuities, faults etc.,
- Lithology of formation
- slope geometry
- Ground water availability which may cause increased thrust on the faces

Site Specific Analysis

- The quarry lease area is plain terrain which is covered by Top soil formation. The rock type noticed in the lease area is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian.
- Since the formation is of homogeneous rock type probability of slope failure is low and can be avoided if proper measures are adopted.

- There will be a 7.5m safety zone which will form a ridge which can also take care of the top section and as such no risk is envisaged on this front.

Mitigation Measures

- Regular inspection of the mine faces to be carried out by pp for ensuring absence of any structural features like faults, joints, dyke, intrusive material in the rock strata which may affect the slope stability and cleared.
- No loose material or boulders is to be stacked on the mine top or pit benches.
- Height of the benches should be 5m.
- Haul road formation will be at 1 in 15 slope with adequate road width.
- There will be no ground water table intersection.
- No seepage is expected due to formation. Adequate drainage management system comprising peripheral garland drain, settling pond to regulate monsoon water will be created to prevent saturation of compact layers, apparent drainage over the bench slope to avert damages to quarry face and manage the water flow.

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 of Thiru. R. Rabeendran will create direct employment opportunity for 30 local people. The PP has proposed CER amount of Rs. 5.0 Lakhs for project school development.

9 ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10 ENVIRONMENTAL MANAGEMENT PLAN

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

10.1 ENVIRONMENTAL POLICY

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

The Proponent will:

- Meet the requirements of all laws, Acts, ordinances, rules, and regulations that are pertinent to its operations and activities.
- 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.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

10.2 ENVIRONMENTAL MANAGEMENT PLAN

The impacts and detailed mitigation measures due to this mining project are detailed in chapter 4. The overall Management Plan at the site level are elaborated in this chapter. Details of EMP measures for implementation in the mine are given in the table 9.1.

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.
	3.5 m ³ /day of water will be used for dust suppression.
	Avoiding blasting during high wind period, night times and temperature inversion periods.
	Regular grading of haul road to clear accumulation of loose material.
	It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements
	Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution
	Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted air pollution control measures.
	Afforestation for control of dust.
Water	
Surface water	The nearest water bodies to the project site include a pond, which is located 170 meters to the southwest, and a kuttai, which is situated 190 meters to the southeast. In the buffer zone of the project site, Rudrajkombai Ar is located 7. 0 kilometers

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	<p>to the northeast, and the Cauvery River is situated 8. 7 kilometers to the southwest.</p> <p>There is no effluent discharge from this proposed Quarry. So no impact is anticipated.</p> <p>Surface runoff management structures like garland drain of required length which is connected to a settling pond will be constructed around the quarry to collect the rain water.</p> <p>Monthly or after rainfall, inspection for performance of water management structures and systems.</p> <p>There is no discharge of any effluent into nearby water bodies.</p>
Ground Water	<p>The quarrying operation is proposed upto a depth of 46 m maximum below ground level, the water table in the area is 55m & 58m below ground level, hence the project will not intersect the Gund water table during entire quarry period.</p>
Water Consumption and Wastewater generation	<p>The required water of 7.0 KLD will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose.</p> <p>Domestic wastewater generation of 0.6 KLD will be discharged in soak pit via septic tank.</p> <p>Conduct ground water and surface water monitoring for parameters specified by CPCB</p>
Noise	<p>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.</p> <p>Noise levels are controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.</p> <p>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.</p>

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	Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation.
	Regular ambient noise level monitoring is carried out in the project area and in surrounding villages to 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.
Top Soil / Overburden	There is no waste anticipated in this rough stone 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 green belt development programme.
	Year wise greenbelt development plan mentioned in Chapter 4.

10.3 ADMINISTRATION AND TECHNICAL SETUP

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

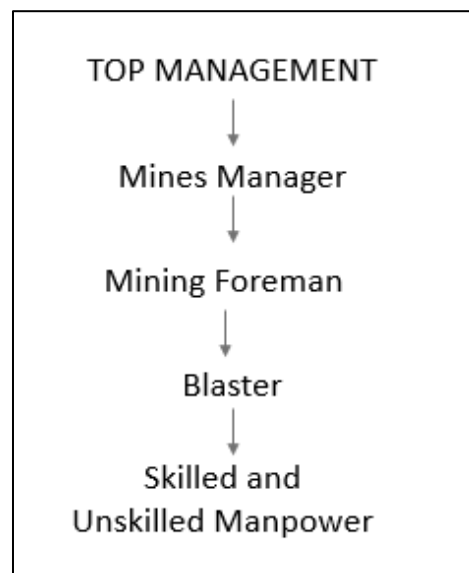


Figure 10.1 Organization Chart

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

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

10.4 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

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

10.5 BUDGETARY PROVISION FOR ENVIRONMENTAL MANAGEMENT

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

Table 10.2 Environmental Management Plan Budget

EMP Cost			
Sl. No.	Mitigation Measure	Capital cost	Recurring Cost /Annum
Air Environment			
1	Haul Road Maintenance	0.31	0.31
2	Water Sprinkler Arrangement	8.00	0.75
3	AAQ Monitoring	0.00	0.50
4	Control Blasting (Muffle blasting)	0.00	0.07
5	Wet Drilling	2.0	0.20
6	No overloading of trucks/tippers/tractors	0.00	0.05
7	Stone carrying trucks will be covered by tarpaulin	0.00	0.10
8	Enforcing speed limits of 20 km/hr within ML area	0.20	0.00
9	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05
10	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	0.23
11	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		11.01	2.46
Noise Environment			
12	Provision for Portable blaster shed	0.50	0.02
13	NONEL Blasting will be practiced to control Ground vibration and fly rocks	0.00	7.26
Sub-Total (B)		0.5	7.28
Water Environment			
14	Water management (Garland Drain)	0.31	0.05
15	Sump Maintenance	0.00	0.20
16	Dewatering Cost	0.00	1.00
Sub-Total (C)		0.31	1.25

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Implementation of EC, Mining Plan & DGMS Condition			
17	Waste management (Spent Oil, Grease etc.,)	0.25	0.20
18	Providing Waste Dustbin	0.05	0.02
19	Environmental Parameters Display Board	0.10	0.01
20	Issue of PPE's	1.20	0.30
21	IME & PME Checkup	0.00	0.30
22	First Aid facility Provision	0.00	0.12
23	Signage & boards for safety precautions	0.10	0.02
24	Barbed Wire Fencing to quarry area	6.38	0.10
25	Parking yard Management	1.59	0.10
26	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
27	Implementation as per Mining Plan and ensure safe quarry working	0.00	7.80
Sub-Total (D)		9.97	9.02
Green Belt Development			
28	Plantation inside ML area (310 Nos)	0.62	0.09
29	Plantation outside ML area (1285 Nos)	3.85	0.38
Sub-Total (E)		4.47	0.47
Additional Key EMP Expenses			
30	Establishing Rainwater Structure	0.10	5.00
31	Environmental Awareness Programme	0.30	0.00
Sub-Total (F)		0.40	5.0
Grand Total in Lakhs (A+B+C+D+E+F)		22.19	25.48
EMP Cost for 5 years			
32	1 st Year	0.0	25.48
33	2 nd Year	0.0	26.75
34	3 rd Year	0.0	28.08
35	4 th year	0.0	29.48
36	5 th year	0.0	30.95

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Sub Total (G)	0.0	140.74
Total EMP Cost for 5 years is 162.93 lakhs		
i.e., Rs.22.19 Lakhs of Capital + Recurring cost Rs. 140.74 lakhs for Five years		

10.6 CONCLUSION

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

11. SUMMARY AND CONCLUSION

11.1 INTRODUCTION

This EIA Report is prepared for Thiru. R.Rabeendran Rough Stone Quarry over an extent of 3.19.0 Ha. patta lands in S.F.No.378/2B2, 378/2C, 380/4A, 380/4B2 (Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State in compliance with ToR obtained vide Lr.No.SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023, dated: 07.08.2023.

Although the individual lease area of this project is less than 5 hectares, the one existing Quarry (1 No) within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 6.76.5 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

This cluster includes the nearby one existing Quarry namely Thiru. D. Krishnamoorthy,S.F.No:365/1, 369/1 and 370/1,Serukudi Village, over an extent of 3.57.5 Ha.

This project proposed to produce 4,09,762 m³ of Rough Stone for the period of 5 years with ultimate depth up to 46 m below ground level.

11.2 PROJECT DESCRIPTION

Table 11.1 Salient Features of the Project

Description	Salient Feature
Name of the Project	Thiru.R.Rabeenran Rough Stone Quarry
Location of the Project	S.F.No:365/1, 369/1 and 370/1,Serukudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu
Latitude & Longitude	Latitude: 11°03'00.35"N to 11°03'10.89"N Longitude: 78°24'38.33"E to 78°24'43.99"E
Toposheet No.	58 I/08
ML Area	3.19.0 Ha
Type of Land	Patta Land

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Geological Resource	Rough Stone – 14,32,575 m ³
Mineable Reserves	Rough Stone – 4,09,762 m ³
Life of the mine	5 years
Proposed depth of mining	46 m bgl
Method of Mining	Opencast mechanized mining involving drilling and blasting
Proposed bench height and width	Bench Height & Width – 5m.
Total Waste	NIL
Top Soil / Overburden	The overburden in the form of topsoil, after excavation topsoil will be preserved along the boundary barrier and utilized for afforestation purpose.
Water Requirement & source	Total – 7.0 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	30 Nos
Total Project Cost	Rs. 1,00,14,000/-
Nearest Highway	The National Highway (NH-381B) Namakkal–Musiri - 8.9km – (S). The State Highway (SH-161) Thathaiyangarpet – Namakkal - 8.5km (NE).
Nearest Railway Station	Karur – Tiruchirappalli line which is about 11.5Km on southern side of the area.
Nearest Airport	Tiruchirappalli – 45.0 Km (SE)
Nearest Major Water bodies	Core Zone – NIL Buffer Zone Pond - 170m (SW) Kuttai 1 – 190m (SE) Seasonal odai - 295m (SW) Kulam 1 – 1.4km (S) Kulam 2 – 2.1km (W) Kulam 3 – 3.7km (S) Odai – 3.0km (NW) Rudrajkombai Ar – 7.0km (NE) Cauvery River – 8.7km (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	Mavilippatti R F – 1.3km (E)

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	Talamalai R F – 5.5km (W) Viramachampatti R F – 9.5km (NE)
Nearest Village	Serugudi Village - 315 m (E)
Seismic Zone	Zone II (Least active)

11.3 DESCRIPTION OF THE ENVIRONMENT

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

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

11.3.1 LAND ENVIRONMENT

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

Table - 11.2 Land use Pattern of the study area

SI.No.	LULC_CLASS	Area in Sq.km	Percentage (%)
1	Built-up land	9.76	3.03
2	Existing mining area	0.47	0.15
3	Fallow land	188.62	58.51
4	Land with scrub	3.29	1.02
5	Land without scrub	2.90	0.90
6	Plantations	74.60	23.14
7	Reserved Forest	19.76	6.13
	Rock outcrop	5.57	1.73
	Water bodies	17.37	5.39
Total		322.35	100

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 7.87 to 8.35 and Electrical Conductivity values were ranging between 86.59 – 95.4 $\mu\text{mhos/cm}$. Soils are generally Loam. Organic matter values were ranging between 0.66 – 0.75 %. Total Nitrogen values were ranging between 397 – 821 mg/kg. Phosphorus values were ranging between 0.07 – 0.10 $\mu\text{g/g}$. Potassium values were ranging between 405 – 649 mg/kg. Sodium values were ranging between 273 – 968 mg/kg. Total Sulphur values were observed to be BDL.

11.3.3 AMBIENT AIR QUALITY

The results of ambient air quality monitoring for the period (October to December 2023) are presented in Chapter 3. The ambient air quality data for PM₁₀, PM_{2.5}, SO₂, NO₂, CO studied at 6 locations as per prescribed guidelines/ methods. As per the monitoring data, in core zone, the PM₁₀ values were in the range of 50.4 – 73.5 $\mu\text{g/m}^3$. PM_{2.5} values in the range of 23.7 – 34.5 $\mu\text{g/m}^3$. SO₂ levels were ranging from 6.6 – 9.5 $\mu\text{g/m}^3$ and NO₂ levels were ranging from 9.6 – 15.8 $\mu\text{g/m}^3$. In buffer zone, the PM₁₀ values were in the range of 39.2 – 66.3 $\mu\text{g/m}^3$. PM_{2.5} values were in the range of 18.08 – 31.8 $\mu\text{g/m}^3$. SO₂ levels were ranging from 5.82 – 8.9 $\mu\text{g/m}^3$. NO₂ levels were ranging from 7.4 – 14.5 $\mu\text{g/m}^3$. 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 $\mu\text{g/m}^3$).

11.3.4 WATER ENVIRONMENT

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 7.33 - 7.95, Chlorides Ranges From 61.1 - 503 mg/l, Sulphates value found to be between 78.2 - 296 mg/l, Fluoride below detectable limits in all locations, Total Hardness varies from 147 - 519 mg/l, and Total dissolved solid 332 - 1360 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

11.3.5 NOISE ENVIRONMENT

From the monitoring data, it is observed that the day Equivalent Noise (Leq-d) level were ranging from 43.1 to 46.9 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 35.7 to 37.7 (A). Day and Night Equivalent Noise (Leq-n) level were ranging from 42.0 to 45.4 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 Serugudi Village on Socioeconomic aspect of the study area. The various attributes that have been taken into account are population composition, employment generation, occupational shift, household income and consumption pattern.

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

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

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

11.1 LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 46m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, 2.54.0 Ha of lease area will be left as rain water harvesting pond. 0.62.0 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indica are selected. A total of 400 trees are planned to be planted. Spacing will be 3m x 3m.

11.2 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 7.0KLD which will be sourced from outside agencies. Negligible sewage of 0.6 KLD will be generated, for which a septic tank with soak pit will be set up.

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

Since the mining operation will be limited upto depth of 46 m BGL, there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes

Pond - 170m (SW)

Kuttai 1 - 190m (SE)

Seasonal odai - 295m (SW)

Kulam 1 - 1.4km (S)

Kulam 2 - 2.1km (W)

Kulam 3 - 3.7km (S)

Odai - 3.0km (NW)

Rudrajkombai Ar - 7.0km (NE)

Cauvery River - 8.7km (SW)

The water bodies found in the buffer zone are.

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

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

- Rain water falling in the quarry will be collected efficiently through garland drains.
- Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt purposes.
- Excess water after desiltation will be provided to downstream users, if any

11.3 BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

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

Mitigation measures

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

11.4 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM₁₀, PM_{2.5}. Other than these pollutants, gaseous emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular

emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

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

11.5 NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

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

Mitigation measures

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

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

11.6 VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

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

Mitigation measures

- ✦ Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- ✦ Control of fly rock and vibration by maintaining peak particle velocity within standard as prescribed by the DGMS and MOEF & CC.
- ✦ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- ✦ Supervising blasting by competent and statutory foreman/ mines manager.

11.7 SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

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

11.8 OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rheumatic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead

to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

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

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

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

11.5 ENVIRONMENTAL MONITORING PROGRAM

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

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

PP will supervise the overall environmental management plan of the project during operation. Total EMP Cost for 5 years is 162.93 lakhs i.e., Rs.22.19 Lakhs of Capital + Recurring cost Rs. 140.74 lakhs for Five years.

11.6 ADDITIONAL STUDIES

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

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

Terms of Reference with Public Hearing (ToR) for the project was issued vide Lr.No.SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023, dated: 07.08.2023. Now, this Draft EIA / EMP Report is prepared for conducting Public Hearing as the projects falls under B1 Category.

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

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

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

The baseline monitoring carried out for this project reflects the cumulative impact of this existing quarry. Air Quality Model simulations are carried out for PM10 and PM2.5. It can be seen that the resultant added concentrations with baseline figures even at worst scenario and cumulative impact of both the projects show that the values of ambient air quality with respect to PM10 are in the range of 74.93 µg/m³ to 56.30 µg/m³ and with respect to PM2.5 are in the range of 35.5 µg/m³ to 26.50 µg/m³ which are within the statutory stipulations in respective case.

The quantum of water required for both these projects are 7.0 KLD and 1.0 KLD each for the Quarry of Thiru. D.Krishnamoorthy and Thiru.R.Rabeendran. Though it may be sourced from outside agencies initially, for these projects it is planned to use the rain water collected in the mine sump later.

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

11.9 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty,

GST, etc

- The project will also contribute via CSR.

Social benefits

- This project provides employment to 30 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 5,00,000 is allocated.

11.7 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 Quarry over an extent of 3.19.0 Ha, while total cluster area of 6.76.50 Ha at Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.

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


EIA Coordinator Name: Manikandan Manickam

Signature & Date

Period of involvement: October 2023 to December 2023.

Contact information:


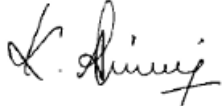

M/s Global Mining Solutions

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





Kottamettupatty, Omalur,

Salem, Tamil Nadu – 636 455

DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and Date
1	AP	Dhanalakshmi Ramanathan	Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution. <u>Period: October 2023 to December 2023.</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 2023 to December 2023.</u>	
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October 2023 to December 2023.</u>	

DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

4	SE	Sarasvathy K	<p>Baseline SE study. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan.</p> <p><u>Period: October 2023 to December 2023.</u></p>	
5	EB	Saravanan S	<p>Baseline data collection of related to ecology of the area.</p> <p><u>Period: October 2023 to December 2023.</u></p>	
6	HG	Ravinthiran N	<p>Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area.</p> <p><u>Period: October 2023 to December 2023.</u></p>	
7	AQ	Srilatha Thiruveedhula	<p>Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.</p> <p><u>Period: October 2023 to December 2023.</u></p>	


DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

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


DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

			<p><i>mining quarry and geological feature of the area.</i></p> <p><u>Period: October 2023 to December 2023.</u></p>	
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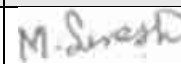
TM-FAE:

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	October to December 2023	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 hydro-geology pattern of study area, studying water and the impact of the project on ground	


DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

					water.	
2	Manikandan Manickam	EB	S.Saravanan	October to December 2023	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(FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	Suresh	WP	Abirami Kaliyaperumal	October to December 2023	Associated with the expert in assessing existing water quality, studying impact of the project on surface and ground water quality, suggesting mitigation measures for	

DRAFT EIA EMP REPORT OF PROPOSED ROUGH STONE QUARRY OF THIRU.R.RABEENDRAN OVER AN EXTENT OF 3.19.0 HA LOCATED AT S.F.NO. 378/2B2, 378/2C, 380/4A, 380/4B2 (PART) AND 381/2A (PART) OF SERUGUDI VILLAGE, MUSIRI TALUK, TIRUCHIRAPPALLI DISTRICT, TAMIL NADU STATE.

					minimizing impact.	
		AP	Dhanalakshmi		Associated with expert in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution.	
2	S.Kamaraj	SC	Shishupal Singh	October to December 2023	Associated with the expert in soil monitoring, secondary data collection on soil type, soil management practices, utilization of top soil.	
		RH	S.V.Prashant		Associated with the expert in identification of the risk related to the mining activities. Preparation of emergency disaster management plan, plan for supply of safety equipment for the workers.	

ANNEXURE - 1

Precise Area

Communication Letter

ந.க.எண்.427/2022/கனிமம்

உதவி இயக்குநர் அலுவலகம்,
புலியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் கவனம்,
திருச்சிராப்பள்ளி-636 001.

நாள்: 17.05.2023.



குறிப்பாணை

பொருள்: கனிமங்களும் சுரங்கங்களும் - சிறுவகைக் கனிமம் திருச்சிராப்பள்ளி மாவட்டம் - முசிறி வட்டம் - சேருகுடி கிராமம் - புல எண்கள்: 37B/282, 378/20, 380/4A, 380/4B2 மற்றும் 381/2A - மொத்தம் பரப்பு 3.610 ஹெக்டேர் - பட்டா நிலத்தில் கல் குவாரி செய்ய அனுமதி கோரி திரு.ரெஜிந்திரன் என்பவர் விண்ணப்பித்தது - ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையை சான்றிதழ் சமர்ப்பிக்க கோரப்பட்டது - தற்போது 3.610 ஹெக்டேர் நிலத்தில் 0.42 ஹெக்டேர் நிலப் பகுதியை மட்டும் தவிர்த்து மீதி பகுதியில் குவாரி பணிக்கு அனுமதி கோரப்பட்டது - ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையை சான்றிதழ் சமர்ப்பிக்க கோருதல் - தொடர்பாக.

- பார்க்கவும்:**
1. திரு.ரெஜிந்திரன் என்பவர் விண்ணப்ப நாள்: 04.04.2022.
 2. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்: 12.04.2022 (வருவாய் கோட்டாட்சியர், முசிறி அவர்களுக்கு முகவரிப்பிடப்பட்டது).
 3. வருவாய் கோட்டாட்சியர், முசிறி அவர்களின் கடித ந.க.எண்.ஆ/1/2050/2022 நாள்: 05.08.2022.
 4. உதவி இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி புலத்தணிக்கை அறிக்கை நாள்: 10.01.2023.
 5. அரசாணை எண்: 79, தொழில் (எம்.எம்.சி) துறை, நாள்: 6.4.2015
 6. அரசாணை எண்: 169, தொழில் (எம்.எம்.சி) துறை, நாள்: 04.08.2020.
 7. உதவி இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி அவர்களின் ந.க.எண்.427/2022/கனிமம், நாள்: 07.02.2023
 8. உதவி இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி புலத்தணிக்கை அறிக்கை நாள்: 27.02.2023
 9. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்: 01.03.2023 (வருவாய் கோட்டாட்சியர், முசிறி அவர்களுக்கு முகவரிப்பிடப்பட்டது).
 10. வருவாய் கோட்டாட்சியர், முசிறி அவர்களின் கடித

ந.க.எண்.ஆ.1/2050/2023 நாள்: 27.04.2023.

11 திரு.ரொபீந்திரன் என்பவர் மனு நாள்: 13.05.2023

.....

பார்வை 1-ல் காணும் விண்ணப்பத்தில், 1959 ஆம் வருடத்திய தமிழ்நாடு சலுகை விதி எண்.19(1)ன் படி திருச்சிராப்பள்ளி மாவட்டம், முசிறி வட்டம், சேருகுடி கிராமம், புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2 மற்றும் 381/2A ல் மொத்தபரப்பு 3.61.0 ஹெக்டேர் பட்டா நிலத்தில் 5 ஆண்டுகளுக்கு கல் குவாரி மேற்கொள்ள அனுமதி கோரி திரு.ரொபீந்திரன் என்பவர் மனு செய்துள்ளார்.

மேற்படி இவ்விண்ணப்பம் தொடர்பாக, முசிறி, வருவாய் கோட்டாட்சியர் மற்றும் திருச்சிராப்பள்ளி புலியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோரால் புலத்தணிக்கை மேற்கொண்டு திருச்சிராப்பள்ளி மாவட்டம், முசிறி வட்டம், சேருகுடி கிராமம், புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2(P) (1.29.0) மற்றும் 381/2A(P) (0.14.5)-ல் மொத்த விஸ்தீரணம் 3.19.0 ஹெக்டேர் பட்டா நிலத்தில் கல் குவாரி செய்வதற்கு 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு பரிந்துரை செய்துள்ளார்கள்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடைபூரும் இன்றி கல்குவாரி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும்; பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. உயர்மூத்தம் மற்றும் தாழ்வாழ்த்த மின்கம்பிகளுக்கு தமிழ்நாடு சிறுகணிமச் சலுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. சுமார் 100 மீட்டர் தொலைவில் உள்ள குடிபாட்டு கோவிலுக்கு வழிபாட்டு நேர்வுகளில் இடைபூறு ஏற்படாவண்ணம் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
5. குவாரித் தொழிலாளர்களை தமிழ்நாடு தொழிலாளர் நல வாரியத்தில் பதிவு செய்வதுடன் குழு காப்பீடு செய்வதையும் உறுதி செய்தி ல் வேண்டும்.
6. வசூலு சுரங்கத் திட்டம் சமர்ப்பிக்கும்பொது இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021-ல் தெரிவித்த படி அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தணை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS Survey செய்து அதன் அறிக்கையினை சமர்ப்பிக்க வேண்டும்.

குத்தகை அனுமதி கோரியுள்ள புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2 மற்றும் 381/2A மொத்த விஸ்தீரணம் 3.61.0 ஹெக்டேர் பட்டா நிலங்கள் கிராம கணக்குகளில் கீழ்க்கண்டவாறு தாக்கவாகியுள்ளது.

திருச்சிராப்பள்ளி மாவட்டம், முசிநி வட்டம், தம்பலம் பகுதி சேருகூட கிராமபஞ்சாயத்து புல எண்.378/2B2 கிராம "அ" பதிவேட்டில் 0.23.5 ஏர்ஸ் 0.31 தீர்வை பட்டா எண் 247 பெதர்மலிங்கம் என பதிவு செய்யப்பட்டுள்ளது. கிராம புன்செய் புல எண்.378/2C "அ" பதிவேட்டில் 0.52.0 ஏர்ஸ் 0.65 தீர்வை பட்டா எண்.632-ன் படி தொகுதன் என பதிவு செய்யப்பட்டுள்ளது. கிராம புன்செய் புல எண்.380/4A "அ" பதிவேட்டில் 1.00.0 ஹெக்டேர் 1.24 தீர்வை பட்டா எண்.775-ல் ஸ்ரீதர் என பதிவாகியுள்ளது. கிராம புன்செய் புல எண்.380/4B2 "அ" பதிவேட்டில் 1.46.0 ஹெக்டேர் 1.80 தீர்வை பட்டா எண்.981-ல் திருப்பதி என பதிவாகியுள்ளது. கிராம புன்செய் புல எண்.381/2A "அ" பதிவேட்டில் 0.39.5 ஏர்ஸ் 0.48 தீர்வை பட்டா எண்.60 மாகணபதிபிள்ளை என பதிவு செய்யப்பட்டுள்ளது. கிராம 10(1) சிட்டாவில் பட்டா எண்.303 ரெங்கராஜன் மகன் ரபீந்திரன் என புல எண்.378/2B2-0.23.5 ஏர்ஸ், 378/2C-0.52.0 ஏர்ஸ், 380/4A-1.00.0 ஹெக்டேர், 380/4B2-1.46.0 ஹெக்டேர், 381/2A-0.39.5 ஏர்ஸ் என பதிவு செய்யப்பட்டுள்ளது. மேற்படி புல எண்களை புலத்தணிக்கை செய்த போது புல எண்கள்.378/2B2, 380/4A, 380/4B2, 381/2A ஆகியவற்றில் பாவாறு குழிகள் உள்ளன. புல எண்.378/2C-ல் பாவாறுகள் கற்கமாக உள்ளது.

மேற்படி குவாரி அமைக்க கோரும் புல எண்.380/4A - இன் நான்கெல்லைகள் முசிநி வருவாய் கோட்டாட்சியர் அவர்களின் அதிகக்கையின் படி பின்வருமாறு அமைந்துள்ளன:

378/2C	ரபீந்திரன் நிலத்திற்கு தெற்கு
380/4B2	ரபீந்திரன் நிலத்திற்கு வடக்கு
380/1A	பரமேஸ்வரன் நிலத்திற்கு கிழக்கு
382/2	கல்லாங்குத்துக்கு மேற்கு

புல எண்.378/2B2 -ன் நான்கெல்லைகள் விவரம்:

378/2B1	பரமேஸ்வரன் நிலத்திற்கு கிழக்கு
378/2C	ரபீந்திரன் நிலத்திற்கு மேற்கு
378/1	வண்டிப்பாதைக்கு தெற்கு
380/4A	ரபீந்திரன் நிலத்திற்கு வடக்கு

புல எண்.378/2C-ன் நான்கெல்லை விவரம்:

378/2B2	ரபீந்திரன் நிலத்திற்கு கிழக்கு
370/4	கிருஷ்ணசாமி நிலத்திற்கு மேற்கு
378/1	வண்டிப்பாதைக்கு தெற்கு
380/4A	ரபீந்திரன் நிலத்திற்கு வடக்கு

புல எண்.381/2A-ன் நான்கெல்லை விவரம்:

381/2B	சப்பாணிவாசன் நிலத்திற்கு வடக்கு
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(Handwritten signatures and marks)

382/2	கொடியாறு, தத்தாறு, தெற்கு
381/2B	சப்பாணிவாசன் நிகத்திற்று, மேற்கு
380/4B2	ரீந்திரன் நிகத்திற்று, கிழக்கு



புல எண் 380/4B2-ன் நூல்கொடுக்கல் விவரம்.

380/4A	ரீந்திரன் நிகத்திற்று, தெற்கு
397/1C	ரீந்திரன் நிகத்திற்று, வடக்கு
380/4B1	ரீந்திரன் நிகத்திற்று, கிழக்கு
391/2A	ரீந்திரன் நிகத்திற்று, மேற்கு

மேற்படி நிலங்கள் பூர்வதரிசில் தரிசாகவும், கிராம 10/1) கிட்டளவில் மட்டா எண் 303-ல்
செங்கராஜன் மகன் ரீந்திரன் என்ற பெயரில் பதிவுசெய்யப்பட்டுள்ளது.

மட்டாநாயார் விண்ணப்பம் செயல்படுத்தும் புலத்திற்கு வடக்கு திசையில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 100 மீட்டர் தொலைவில் பூர்வதரிசில் பூர்வதரிசில் உரிமையாளர் குண்டிக்கற்க்கான அலகுகளின் புல எண் 330-ல் குவித்து வைத்துள்ளார். சுமார் 200 மீட்டர் தொலைவில் காட்டுக்கோவில் ஒன்றும் சுமார் 150 மீட்டர் தொலைவில் வீடு மற்றும் மின்கம்பங்கள் அமைந்துள்ளது வடகிழக்கு திசையில் விண்ணப்பம் செய்துள்ள மட்டாநாயார் ஏற்கனவே குவாரி பணிகள் மேற்கொள்ளப்பட்ட புல எண் 378-ல் குவாரியில் நீர் திரம்பி காணப்பட்டது.

இப்புலத்திற்கு தெற்கு திசையில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 100 மீட்டரில் தாழ்வழுத்த மின்கம்பிகள் மற்றும் இப்புலத்தின் அருகில் உள்ள நிலங்களில் ஐதலமரங்கள் (Eucalyptus) காணப்படுகின்றன. இப்புலத்தின் எல்லையிலிருந்து சுமார் 1.5 கிலோ மீட்டர் தூரத்தில் குளம்பட்டி கிராமம் அமைந்துள்ளது.

இப்புலத்தின் மேற்கில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 300 மீட்டர் தூரத்தில் விண்ணப்பதாரருக்கு சொந்தமான Crusher Unit ஒன்று புல எண் 401-ல் காணப்படுகிறது. சுமார் 20 மீட்டர் தொலைவில் Thatched Shed ஒன்றும் சுமார் 100 மீட்டர் தூரத்தில் தாழ்வழுத்த மின்கம்பிகள் செல்கின்றது.

குத்தகை கோரும் புல எண்களுக்கு அருகே புராதான கிண்கிண்கள், கோயில்கள், பள்ளிகள், சமாதிகள், மற்றும் நிரந்தர குடியிருப்பு வீடுகள் தேடிப் பிடுக்கல் செய்வதற்காக தெரிவிக்கப்பட்டுள்ளது.



பார்வை (7)-ல் காணும் உதவி இயக்குநர் புவியியல் திருச்சிராப்பள்ளி அவர்களின் கடிதத்தில் குறிப்பிடப்பட்ட குத்தகை பார்வை(11)-ல் கண்ட விண்ணப்பதாரரின் கோரிக்கை அடிப்படையில் இரத்து செய்யப்படுகிறது.

பார்வை (8)ல் காணும் உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி அவர்களின் புலத்தணிக்கையில் குவாரி குத்தகைக்கு விண்ணப்பித்த பகுதியில் கர்னெட்டிபெரஸ் நெய்சிக் (Garnetic ferrous gneiss) சாரணோடை வகை பாறைகள் காணப்படுகின்றன.

பார்வை (9)-ல் காணும் கடித்தின்படி வருவாய் வட்டாட்சியர் முசிநி அவர்களிடம் இள அறிக்கை கோரப்பட்டது. அதன்படி பார்வை (10)-ல் காணும் கடித்தின் வாயிலாக வருவாய் கோட்டாட்சியர், முசிநி அவர்கள் வட்டாட்சியர், முசிநி அவர்களின் அறிக்கையின் அடிப்படையிலும் மேற்படி புலங்களை 26.04.2023 அன்று தலப்பார்வை செய்ததின் அடிப்படையிலும் விண்ணப்பதாரருக்கு குத்தகை உரியம் வழங்க கீழ்க்கண்டவாறு பரிந்துரை செய்துள்ளது.

*திருமதிநீதிர்ன் என்பவர் சேருகுடி கிராம புல எண்.378/2B2, 378/2C, 380/4A, 380/4B2, 381/2A-ல் சாதாரண கற்கள் வெட்டி எடுக்க 1999ம் ஆண்டு சிறுகனிம சலுகை விதிகளின் கீழ் விண்ணப்பம் செய்துள்ளார். இந்நேரத்தில் புல எண். 380/4B2 பரப்பு 1.46.0ஹெக்டேர் மனுதாரர் பெயரில் உள்ள மட்டா நிலத்தின் புலப்படத்தில் மேற்புறம் குட்டை விளக்கியாக காண்பிக்கப்பட்டுள்ளது. மேலும் மேற்படி மட்டா குட்டை க்கு நீர்வழிப்பாதை ஒன்றும் மேற்படி புல எண்ணில் விளக்கியாக காண்பிக்கப்பட்டுள்ளது.

தலத்தணிக்கையில் மேற்படி புல எண்ணில் புலப்படத்தில் உள்ளவாறு சுமார் 7. சென்ட் பரப்பில் குட்டை தூர்ந்த நிலையில் உள்ளது தெரியவருகிறது. மேற்படி குட்டையில் நீர்த்தேங்கி அதன் மூலம் பாசனம் செய்ததற்கான அறிகுறி ஏதும் காணப்படவில்லை. மேலும், மேற்படி குட்டைக்கான ஆயக்கட்டு நிலங்கள் ஏதாவில்லை. புலப்படத்தில் விளக்கியாக காட்டப்பட்டுள்ள நீர்வழித்தடம் பூஸ்திதியில் இல்லை. மேலும், மேற்படி புல எண். 380/4B2 பரப்பு 1.46.0ஹெக்டேர் நிலம் கிராம கணக்கில் மனுதாரர் நீதிர்ன் என்பவர் பெயரில் தாக்கலாகி உள்ளது புல எண்கள்.380/4A மற்றும் 380/4B2 ஆகியவை ஏற்கனவே கல்குவாரி குத்தகை வழங்கப்பட்டு குவாரி நடந்த இடமாகும். புல எண்கள்.378/2B2, 380/4A, 380/4B2 மற்றும் 381/2A ஆகியவற்றில் பாறைகுழிகள் உள்ளன. புல எண்.378/2C-ல் பாறைகள் கற்கள் உள்ளன.



எனவே, மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டவை குறித்து, மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டவை குறித்து, தலைநகர் தேக்கி வைப்பதற்கான சூழல் திட்டத்தில் மேற்படி குட்டைக்கு ஆயக்கட்டு நிலங்கள் ஏதுமில்லை என்பதானும், மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டுள்ள தீர்வுத்திட்டம் பூர்த்தியில் இல்லை என்பதானும், மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டுள்ள கங்குவாரி நடத்துவதற்கு அனுமதி வழங்கப்பட்டு, கங்குவாரி செயல்பட்டு வந்ததன் அடிப்படையிலும் விண்ணப்பதாரர் திரு. ரீத்திரன் என்பவர் பெயரில் கங்குவாரி குத்தகை உரிமம் அனுமதி வழங்கலாம் என தெரிவித்துள்ளார். மேலும், பார்வை (10)-ல் காணும் மனுவில் திரு. ரீத்திரன் என்பவர் தனது சொந்த உபயோகத்திற்காக புல எண். 380/482-ல் உள்ள 1.45.0 ஹெக்டேர் மொத்த பரப்பளவில் இருந்து 0.17 ஹெக்டேர் பரப்பு மற்றும் புல எண். 381/2A-ல் உள்ள 0.39.5 ஹெக்டேர் மொத்த பரப்பளவில் இருந்து 0.25.0 ஹெக்டேர் ஆக மொத்தம் 0.42.0 ஹெக்டேர் பரப்பளவு பகுதியை சொந்த உபயோகத்திற்கு பயன்படுத்துவதாகவும் மீதி உள்ள பகுதியில் கங்குவாரி பணி மேற்கொள்ள அனுமதி தரும்படியும் கேட்டுக்கொண்டுள்ளார்.

எனவே, கங்குவாரி கோட்டாட்சியர், முசிநி மற்றும் உதவி இயக்குநர், பணியில் மற்றும் காரங்கத்துறை, திருச்சிராப்பள்ளி ஆகியோரின் அறிக்கையின் படி திருச்சிராப்பள்ளி மாவட்டம், முசிநி வட்டம், சேனாசலம் கிராமம், புலஎண். 378/2B2, 378/2C, 380/4A, 380/482(P) (1.29.0) மற்றும் 381/2A(P) (0.14.5)-ல் மொத்த வீண்பதானம் 3.19.0 ஹெக்டேர் பட்டா நிலத்தில் திரு. ரீத்திரன் என்பவருக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகணிமச் சலுகை விதி 19(1)-ன் படி கங்குவாரி செய்வதற்கு குத்தகை பத்திரம் திறைவேற்றப்பட்ட தானியிருந்து 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்குவதற்குரிய தேற்ற (Precise Area Communication) பரப்பாக கருதலாம்.

மேலும், தமிழ்நாடு சிறுகணிம சலுகை விதிகள் 1959 விதி எண். 41 மற்றும் 42-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு காரங்க திட்டத்தினை 90 நினைங்களுக்குள் கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு சமர்ப்பிக்குமாறும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைசரினைப்பெறவும் மனுதாரர் கேட்டுக்கொள்ளப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும் எவ்வித இடையூறும் இன்றி கங்குவாரி மேற்கொள்ள வேண்டும்.

(Handwritten signatures and marks)



2. அருகில் உள்ள ஆரக புறங்கோட்டு நிலத்திற்கு 10 மீட்டர் தூரம் கொடுக்க, மீட்டர் நிலத்திற்கு 7.5 மீட்டர் புறங்கோட்டு தூரம் கொடுக்க கமிட்டி அல்லது குவார்டிரன்ட் முடிவொன்றை வேண்டும்.
3. உயரத்தின் மற்றும் தர்ப்புறத்தின் மீதான பரிசீலனைகளை, தனித்தனி அனுமதிப்பத்திரங்களில் 100 மீட்டர் புறங்கோட்டு தூரம் கொடுக்க கமிட்டி அல்லது குவார்டிரன்ட் முடிவொன்றை வேண்டும்.
4. சுமார் 100 மீட்டர் தொலைவில் உள்ள குடிமட்டு கோவில்கள், விடமட்டு மேற்கள்கள் கிடைப்பு ஏற்படா வண்ணம் குவார்டிங் பணி மேற்கொள்ள வேண்டும்.
5. குவார்டிங் தொழிலாளர்களை தனித்தனியாக தொழிலாளர் நல வாரியத்தின் பதிவு செய்வதற்கு குழு கமிட்டி செய்வதையும் உறுதி செய்திடல் வேண்டும்.
6. வரைவு கரங்கத் திட்டம் சமர்ப்பிக்கும்பொழுது துயர்க்குறி, புகளியியல் மற்றும் கரங்கத்தொறை சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021-ல் தெரிவித்த படி அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புத்திரனை விண்ணம்பதாரர் தனது சொந்த செலவில் DGPS Survey செய்து அதன் அங்கீகரிக்கப்பட்ட சமர்ப்பிக்க வேண்டும்.

[Handwritten Signature]
17/5/21

உதவி இயக்குநர்,
புவியியல் மற்றும் கரங்கத்தொறை,
திருச்சிராப்பள்ளி

பெறுதல்:

திரு. அரவிந்த்ரன்,
த/பெ.அரங்கராஜன்
எண்.452/54.E2, V.O.C. நகர் மெயின் ரோடு,
லாக்குடி வட்டம், திருச்சிராப்பள்ளி மாவட்டம்.

[Handwritten Signature]
17/5/21

[Handwritten Signature]

ANNEXURE - 2

**Mining Plan Approval
Letter and approved mine
plan report with Annexure**

From

Thiru.A.Balamurugan., M.Sc., M.B.A.,
Assistant Director,
Dept. of Geology and Mining,
Collectorate,
Tiruchirappalli -620 021.

To

Thiru.R.Rabeendran,
S/o.Rengarajan,
No.452/54.E2, V.O.C Nagar
main Road,
Lalgudi Taluk,
Tiruchirappalli .

Rc.No.427/2022/Mines

dated: -06-2023

Sir,

Sub: Mines and quarries - Minor minerals - Tiruchirappalli District - Musiri Taluk - Serukudi Village - S.F.No.378/2B2, 378/2C, 380/4A, 380/4B2(P), 381/2A(P) over an extent of 3.19.0 Hects. of Patta land - Rough Stone quarry permission requested by Thiru.R.Rabeendran, S/o.Rengarajan Trichy - Instructions for submitting approved mining plan and Environment clearance - Submission of mining plan for approval - Approved - Reg.

Ref: 1. Thiru.R.Rabeendran, S/o.Rengarajan Trichy District application dated 04.04.2022
2. This office even Memo letter No. dated 17.05.2023
3. Thiru.R.Rabeendran, S/o.Rengarajan Tiruchirappalli letter dated 31.05.2023 (Submission of Mining Plan)

In the reference 1st cited Thiru.R.Rabeendran, S/o.Rengarajan has requested for the grant of quarry lease of Rough Stone (5 years) to quarry over an extent of 3.19.0 Hects. of patta land in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2 (P), 381/2A (P) of Serukudi Village, Musiri Taluk, Tiruchirappalli District. In this connection, in the reference 2nd cited, Thiru.R.Rabeendran, S/o.Rengarajan was directed to produce the mining plan for approval and to obtain environmental clearance from State level Environment Impact Assessment Authority for an extent of 3.19.0 Hects. of Patta land in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(P), 381/2A(P) of

Serukudi Village, Musiri Taluk, Tiruchirappalli District for a period of Five years for quarrying Rough stone.

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

The Mining Plan submitted by Thiru.R.Rabeendran, S/o.Rengarajan, Trichy has been scrutinized as per the guidelines issued by the Commissioner of Geology and Mining, Chennai in his letter Rc.No.3868 /LC/2012 dated 19-11-2012 and based on the reports and records and accordingly as authorized by the Commissioner of Geology and Mining, Chennai in his letter dated 19.11.2012, I hereby approve the above said mining plan for the quantity of **4,09,762 CBM** for Rough stone.

This approval is subject to the following conditions:-

- (i) That the mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian explosives act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.




(iii) That the mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.

(iv) Quarrying shall be done as per the approved mining plan and that the mining is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

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

Encl: 2 Copies of Approved Mining Plan.


Assistant Director
Dept. of Geology and Mining,
Tiruchirappalli.

J.R.
26/12



MINING PLAN FOR SERUGUDI ROUGH STONE 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 : TIRUCHIRAPPALLI
TALUK : MUSIRI
VILLAGE : SERUGUDI
S.F.NOS : 378/2B2, 378/2C, 380/4A,
380/4B2(PART) AND
381/2A(PART)
EXTENT : 3.19.0Ha

ECO-FRIENDLY



SUSTAINABILITY



SAFETY



FOR APPLICANT

Thiru. R.Rabeendran,
S/o. Rengarajan
No.452/54.E2, V.O.C Nagar main road,
Lalgudi Taluk,
Tiruchirappalli District.

This Mining Plan is approved subject
to the conditions stipulated in this
office Lr.No. 427/2022/Mines.,
Dated: 02.06.2023. As per the
Rule 41 & 42 of TNMMCR 1959.

[Signature]
ASSISTANT DIRECTOR
GEOLOGY & MINING
TIRUCHIRAPPALLI

PREPARED BY

S.Gopi, M.Sc.,
Qualified Person
Under Rule 15 of Amended MCR, 2016
No.93/36E2, Subramaniyar Kovil Street,
Omahur Taluk, Salem District,
Tamil Nadu, Pin code-636 455.
Mobile:97502 62927 & 94446 54520.



(PPE)

[Handwritten signature]

R.Rabeendran,
S/o. Rengarajan
No.452/54.E2, V.O.C Nagar main road,
Lalgudi Taluk, Tiruchirappalli District.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone** quarry over an extent of 3.19.0hectares of Patta lands in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State has been prepared by

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

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

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

No.93/36E2,Subramaniyar Kovil Street,

Omalar Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.

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

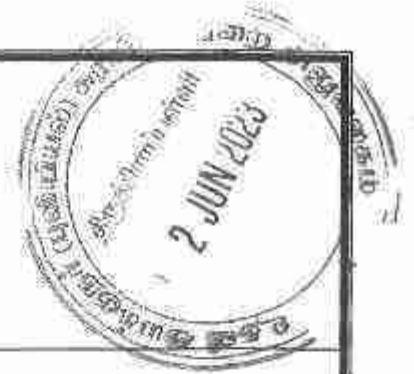
Signature of the Applicant

R.Rabeendran,

Place: Tiruchirappalli

Date: 18.05.2023

R.Rabeendran,
S/o. Rengarajan
No.452/54.E2, V.O.C Nagar main road,
Lalgudi Taluk, Tiruchirappalli District.



DECLARATION

The Mining Plan in respect of **Rough Stone** quarry over an extent of 3.19.0hectares of Patta lands in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

R.Rabeendran,

Place: Tiruchirappalli

Date: 18.05.2023

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S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

No.93/36E2,Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone** quarry lease over an extent of 3.19.0hectares of Patta lands in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Scrugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State applied by Thiru.R.Rabeendran, for fresh quarry lease.

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

Certified

Signature of Qualified Person.

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

Place: Salem

Date: 19.05.2023

S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

No.93/36E2,Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.

CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone** quarry over an extent of 3.19.0hectares of Patta lands in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State for Thiru.R.Rabeendran, covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified

Signature of Qualified Person.


S.Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

Place : Salem

Date : 19.05.2023

CERTIFICATE



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

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

Accordingly I prepared this Mining Plan in respect of Rough Stone quarry lease applied for an extent of 3.19.0hectares of Patta land in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, by Thiru.R.Rabeendran, for a period of Five years. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1) (a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016, the same may be approved by the Competent Authority.

**S.Gopi, M.Sc.,
Qualified Person**

Under Rule 15 of Amended MCR, 2016

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

Place : Salem

Date : 19.05.2023

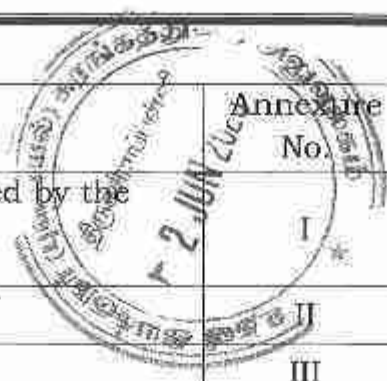
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Annexure

S. No.	Description	Annexure No.
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LIST OF PLATES

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5.0	Key Plan	I-D
6.0	Quarry lease & Surface plan	II
7.0	Topography, Geological, Year wise Development and Production Plan & Section	III
8.0	Conceptual Plan & Section	IV

MINING PLAN FOR MINOR MINERALS

ROUGH STONE

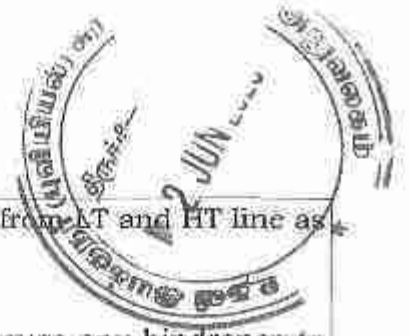
Over an extent of 3.19.0hectares of Patta land in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu State.

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

1.0 Introduction and Executive Summary:

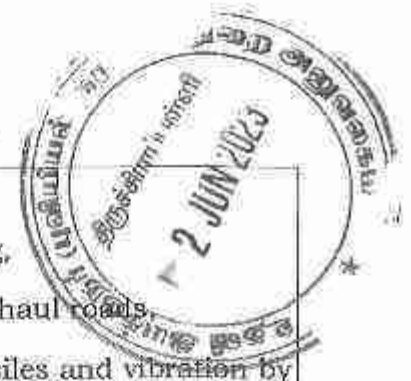
1. The present Mining Plan is prepared for Thiru.R.Rabeendran, S/o. Rengarajan residing at No.452/54.E2, V.O.C Nagar main road, Lalgudi Taluk, Tiruchirappalli District.
2. The application was processed by the Assistant Director, Department of Geology and Mining, Tiruchirappalli, and passed an order vide Rc.No.427/2022/Kanimam dated 17.05.2023 directing the applicant to produce approved Mining Plan under Rule 41(5) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and Environmental Clearance Certificate under Rule 42 from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease to quarry **Rough Stone** over an extent of 3.19.0 hectares of Patta lands in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District of Tamil Nadu State for a period of five years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the following conditions imposed in the precise area communication letter.
 - a) The applicant should not cause any hindrance to adjacent patta lands and public while Rough stone quarrying operation.
 - b) A safety distance of 10m and 7.5m should be provided to the adjoining Government land and Patta land.





- c) The applicant should maintain proper safety distance from LT and HT line as per the Tamil Nadu Minor Mineral Concession Rules.
 - d) While quarrying operation the applicant should not cause any hindrance to temple (Kudipattu Kovil) located at a distance of 100m.
 - e) All the labours should be registered with the labour welfare Board of Government of Tamil Nadu and to be enrolled in the insurance Scheme.
 - f) As per the letter received from the Director Geology and Mining Chennai vide letter R.c.no.2921/M.M.4/2016 dated.09.03.2021, the applicant should conduct DGPS survey (Authorized person) own cost and submitted report along with draft mining plan.
4. Geological Resources is estimated at 14,32,575m³ of Rough stone and 31,835m³ of Topsoil formation and Mineable Reserves is estimated at 4,09,762m³ of Rough Stone and 15,788m³ of Topsoil 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. Production Schedule is proposed production of 4,09,762m³ of Rough Stone, and 15,788m³ of Topsoil formation for the period of five years.
 6. applicant ensured that, child labours under 18 years of age will not be engaged for quarrying operation.
 7. The applicant ensure that will engage 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 1.3Kms radius.
 - ii) There is no interstate boundary around 10Kms radius.
 - iii) There is no wild life animal sanctuary within 10Kms radius from the project site area under the Wildlife (Protection) Act, 1972.

Therefore the project seeks clearance only from State Level Environmental Impact Assessment Authority (SEIAA)



9. Environmental measures to be adopted shall be,

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



EXECUTIVE SUMMARY:				
a.	Name of the Village Panchayat	:	Serugudi	
b.	Name of the Panchayat Union	:	Musiri	
c.	The proposed total Movable Reserves	:	4,09,762m ³ of Rough Stone 15,788m ³ of Topsoil formation	
d.	The proposed quantity of reserves (level of production) for Five years to be mined is (Recoverable reserves)	:	4,09,762m ³ of Rough Stone, 15,788m ³ of Topsoil formation	
e.	Total extent of the area	:	3.19.0Ha	
f.	Proposed Period of mining	:	Five Years	
g.	Existing depth	:	8m (Max) below ground level	
h.	Proposed Depth of mining	:	46m below ground level for the proposed mining plan.	
i.	Method of mining/level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m and 80% Slope is proposed.	
j.	Types of Machineries used in the quarry	:	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		Rs. 22,14,000/-	
	B. Operational Cost		Rs. 72,00,000/-	
	C. EMP Cost		Rs. 6,00,000/-	
			Total Project cost(A+B+C) Rs.1,00,14,000/-	
l.	The area applied for lease is bounded by fourteen corners and the coordinates are clearly marked in plate no II.			
	Corners	Co-ordinates	Distance between the corners	
		Latitude	Longitude	
	1	11° 03' 00.42"N	78° 24' 38.33"E	1-2 = 91.6m
	2	11° 03' 03.38"N	78° 24' 38.66"E	2-3 = 40.0m
	3	11° 03' 03.38"N	78° 24' 39.98"E	3-4 = 40.2m
	4	11° 03' 04.64"N	78° 24' 40.34"E	4-5 = 97.4m
	5	11° 03' 07.81"N	78° 24' 40.21"E	5-6 = 12.2m
	6	11° 03' 07.79"N	78° 24' 40.61"E	6-7 = 95.2m
	7	11° 03' 10.89"N	78° 24' 40.77"E	7-8 = 17.8m
	8	11° 03' 10.63"N	78° 24' 41.30"E	8-9 = 81.0m
	9	11° 03' 09.87"N	78° 24' 43.85"E	9-10 = 66.8m
	10	11° 03' 07.70"N	78° 24' 43.75"E	10-11 = 104.2m
	11	11° 03' 04.33"N	78° 24' 43.32"E	11-12 = 20.2m
	12	11° 03' 04.37"N	78° 24' 43.99"E	12-13 = 43.0m
	13	11° 03' 02.97"N	78° 24' 43.91"E	13-14 = 137.2m
	14	11° 03' 00.35"N	78° 24' 40.25"E	14-1 = 58.2m



2.0 General Information:

2.1	a.	Name of the Applicant	: Thiru.R.Rabeendran,
	b.	Address of the Applicant with phone No and e-mail id if any	: S/o. Rengarajan No.452/54.E2, V.O.C Nagar main road, Lalgudi Taluk, Tiruchirappalli District Pin code -621703. Cell No.:9843622300
	c.	Status of the Applicant	: Individual
2.2	a.	Mineral Which the applicant intends to mine	: Rough Stone.
	b.	Precise area communication letter No.	: Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tiruchirappalli, vide Rc.No.427/2022/Kanimam dated 17.05.2023.
	c.	Period of permission / lease granted.	: The Assistant Director, Department of Geology and Mining, Tiruchirappalli, has grant of lease period for five years .
	d.	Name and Address of the QP preparing Mining Plan.	: S.Gopi, M.Sc., Qualified Person Under Rule 15 of Amended MCR, 2016 No.93/36E2, Subramaniyar Kovil Street, Omahur Taluk, Salem District, Tamil Nadu, Pin code-636 455. Mobile:97502 62927 & 94446 54520.

3.0 Location:

S.No	Details of the Area:	
1	Corner Coordinates	Latitude :11°03'00.35"N to 11°03'10.89"N Longitude:78°24'38.33"E to 78°24'43.99"E
2	Toposheet Number	581 / 08
3	The altitude of the area	143m (MSL)
4	Extent	3.19.0Ha
5	Survey Nos.	378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A(Part)
6	Village	Serugudi
7	Taluk	Musiri
8	District	Tiruchirappalli
9	State	Tamil Nadu

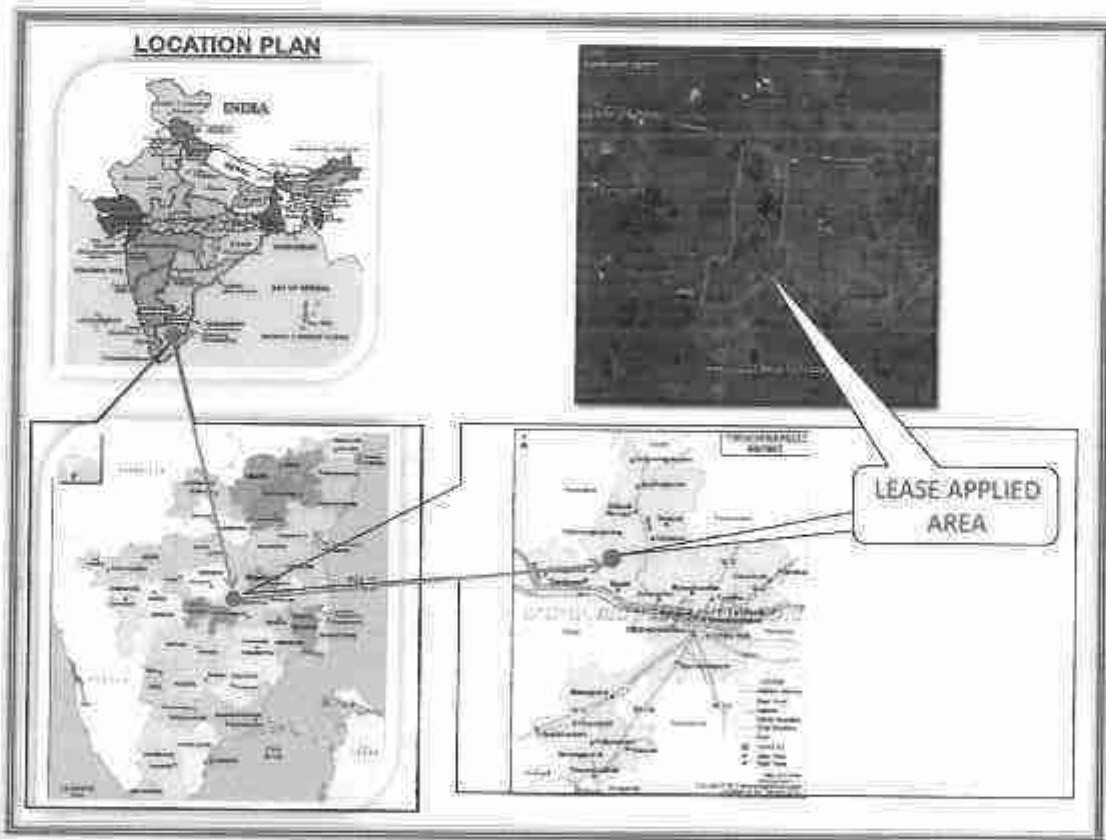
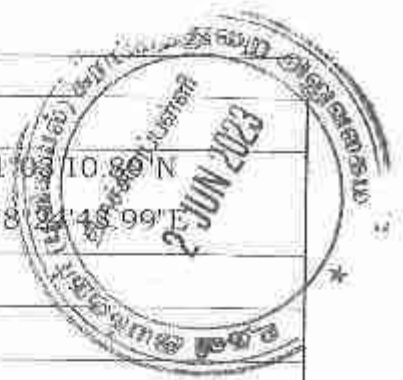


Fig. Location Map of the Lease Applied area



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 the applicant vide patta no.303, Please refer Annexure No: IV.
c.	Toposheet No. with Latitude and Longitude	: Topo Sheet No: 58 I / 08 : Latitude : 11°03'00.35"N to 11°03'10.89"N : Longitude: 78°24'38.33"E to 78°24'43.99"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 Serugudi - Pappapatti village road on northern side of the area. The Nearest Railway line is Karur - Tiruchirappalli line which is about 11.5Km on southern side of the area.

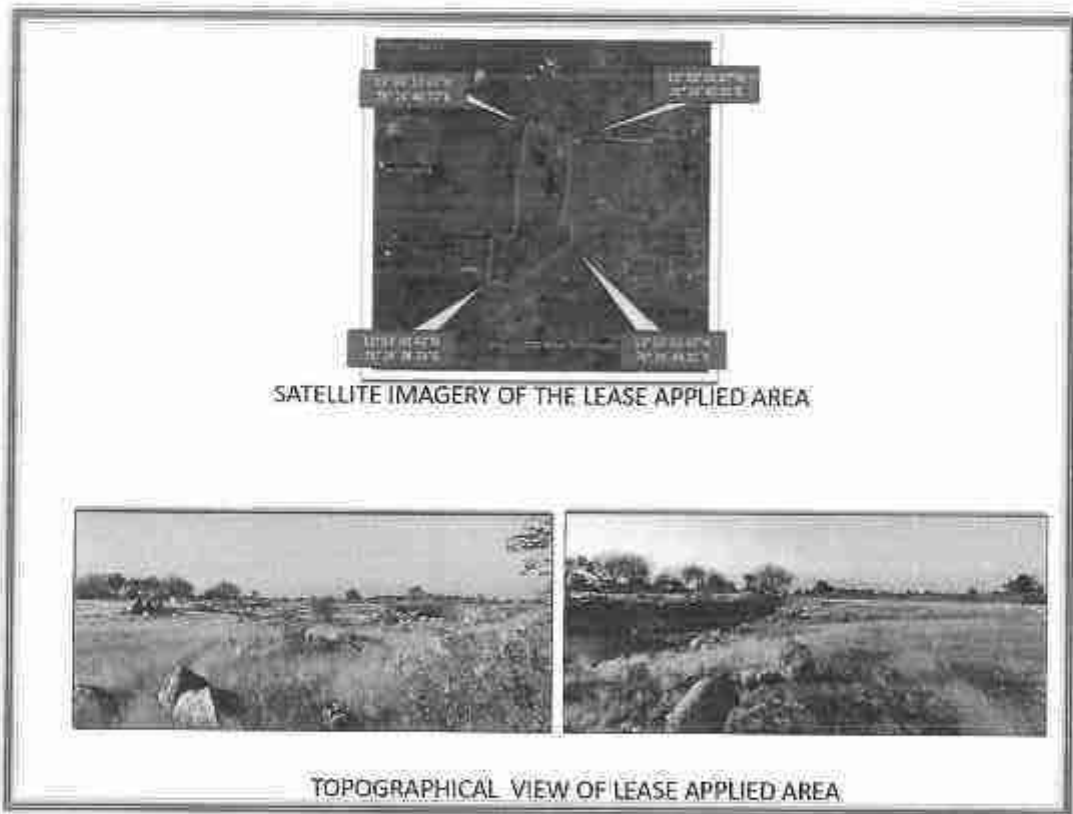


Fig. Topographical View of the Lease Applied area

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PART - A

4.0 Geology and Mineral Reserves:

4.1	a. Topography	<p>: ➤ The area applied for quarry lease exhibits almost plain covered by Topsoil formation. The massive Charnockite formation is noticed below 1m (Avg) Topsoil and sloping towards Southeastern side of the area, the altitude of the area is above 143m (maximum) from MSL.</p> <p>➤ No major river is found nearby the lease applied area.</p> <p>➤ Water table is found at a depth of 58m in summer and 55m in rainy seasons.</p> <p>➤ Temperature of the area is reported to be 18°C to a maximum of 42°C during summer.</p> <p>➤ Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons.</p>
	b. General Geology of the Area	<p>: The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite.</p> <p>The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock.</p> <p>The strike of the Charnockite formation is N45°E – S45°W with dipping towards SE60°.</p>



			<p>The general geological succession of the area is given as under.</p> <table border="0"> <tr> <td style="text-align: center;"><u>AGE</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;"><u>ROCK TYPE</u></td> </tr> <tr> <td>Recent</td> <td></td> <td>Topsoil</td> </tr> <tr> <td></td> <td style="text-align: center;">Unconformity</td> <td></td> </tr> <tr> <td>Archaean</td> <td></td> <td>Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss</td> </tr> </table>	<u>AGE</u>	-	<u>ROCK TYPE</u>	Recent		Topsoil		Unconformity		Archaean		Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss
<u>AGE</u>	-	<u>ROCK TYPE</u>													
Recent		Topsoil													
	Unconformity														
Archaean		Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss													
4.2		Details of Exploration already carried out if any	No exploration was carried out as the rough stone formations are clearly visible from existing quarry pit.												
4.3	a.	Estimation of Reserves	<p>The Geological and Recoverable reserves are estimated by cross sectional method.</p> <p>Totally four sections have been drawn, one section drawn length wise as (X-Y) and another three sections drawn width wise as (A-B), (C-D) and (E-F) to cover maximum area considered for lease.</p> <p>The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively. Please refer plate No.III.</p>												

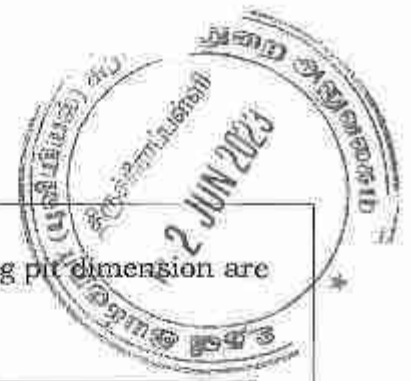
a. Geological Resources

The quarrying is restricted up to a depth of 46m Below ground level only. Availability of Resources is given below.

Table No-1

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Topsoil in m ³	Geological Resources of Rough stone in m ³
XY-AB	98	160	1	15680	15680	
	98	160	45	705600		705600
Total					15680	705600
XY-CD	80	101	1	8080	8080	
	80	101	45	363600		363600
Total					8080	363600
XY-EF	85	95	1	8075	8075	
	85	95	45	363375		363375
Total					8075	363375
Grand Total					31835	1432575

Topsoil Formation : 31,835m³
 The Geological Resources of Rough stone : 14,32,575m³



b. Already excavated

The area has been quarried in earlier operation the existing pit dimension are given below.

Table No-2

Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	60	19	6m below ground level
II	66	36	8m below ground level

c. Available Mineable Reserve

The available mineable reserve calculated by deducting 7.5m and 10m safety distance and bench loss.

Table No-3

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Topsoil in m ³	Mineable Reserve of Rough stone in m ³
XY-AB	I	91	144	1	13104	13104	
	II	89	140	5	62300		62300
	III	82	127	5	52070		52070
	IV	76	114	5	43320		43320
	V	70	101	5	35350		35350
	VI	63	88	5	27720		27720
	VII	57	75	5	21375		21375
	VIII	50	62	5	15500		15500
	IX	37	49	5	9065		9065
	X	24	36	5	4320		4320
Total						13104	271020
XY-CD	I	29	52	1	1508	1508	
	II	29	48	5	6960		6960
	III	31	36	2	2232		2232
	III	80	69	3	16560		16560
	IV	80	55	5	22000		22000
	V	80	42	5	16800		16800
	VI	80	29	5	11600		11600
	VII	79	16	5	6320		6320
Total						1508	82472
XY-EF	I	24	49	1	1176	1176	
	II	23	47	5	5405		5405
	III	66	63	5	20790		20790
	IV	59	50	5	14750		14750
	V	53	37	5	9805		9805
	VI	46	24	5	5520		5520
Total						1176	56270
Grand Total						15788	409762

The available mineable reserve is computed as 4,09,762m³ of Rough stone and 15,788m³ of Topsoil formation upto a depth of 46m 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 and 80° slope of the bench. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.
5.2	Mode of Working : The rough stone is proposed to quarry 5m bench height, 5m width with 80° slope and with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the eedy crusher/ other buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crusher / other buyers. 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:	: There is overburden in the form of topsoil after excavation of topsoil will be utilized for afforestation purpose. The excavated rough stone will be directly loaded into tipper to the needy crusher/other buyers.
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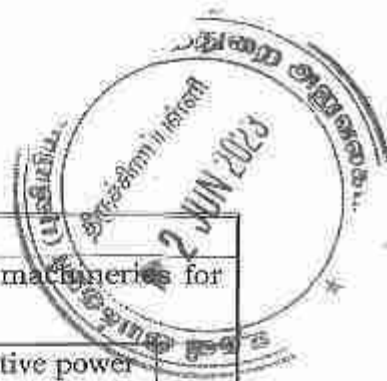
The Yearwise Production and Development Table

Table No -4

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Topsoil in m ³	Mineable reserve of Rough stone in m ³
I	XY-AB	I	91	144	1	13104	13104	
		II	89	140	5	62300		62300
	XY-CD	I	29	52	1	1508	1508	
		II	29	48	5	6960		6960
	XY-EF	I	24	49	1	1176	1176	
		II	23	47	5	5405		5405
		III	30	63	5	9450		9450
Total							15788	84115
II	XY-EF	III	36	63	5	11340		11340
	XY-CD	III	31	36	2	2232		2232
		III	80	69	3	16560		16560
	XY-AB	III	82	127	5	52070		52070
Total								82202
III	XY-AB	IV	76	114	5	43320		43320
	XY-CD	IV	80	55	5	22000		22000
	XY-EF	IV	59	50	5	14750		14750
Total								80070
IV	XY-EF	V	53	37	5	9805		9805
	XY-CD	V	80	42	5	16800		16800
	XY-AB	V	70	101	5	35350		35350
		VI	45	88	5	19800		19800
Total								81755
V	XY-AB	VI	18	88	5	7920		7920
		VII	57	75	5	21375		21375
		VIII	50	62	5	15500		15500
		IX	37	49	5	9065		9065
		X	24	36	5	4320		4320
	XY-CD	VI	80	29	5	11600		11600
		VII	79	16	5	6320		6320
	XY-EF	VI	46	24	5	5520		5520
	Total							
Grand Total							15788	409762

The applicant has proposed to carry out 4,09,762m³ of Rough stone, and 15,788m³ of Topsoil formation at the rate of 100% recovery upto a depth of 46m Below ground level for the period of five years.

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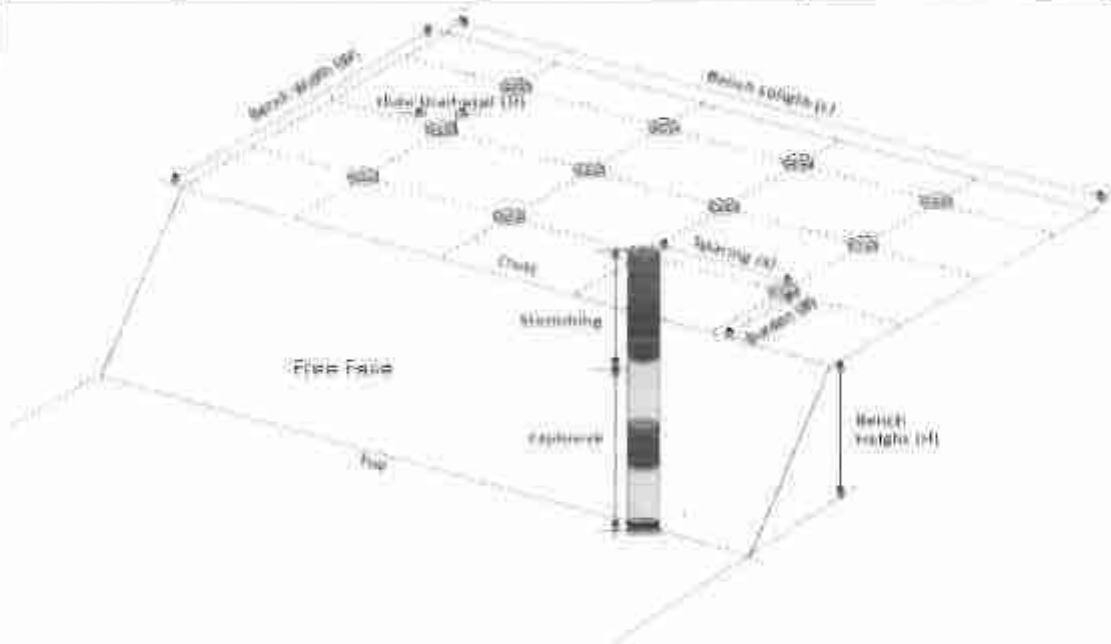
5.5	Machineries to be used																	
	a.	Drilling		: It is proposed to use following machineries for quarrying rough stone														
		S.No	Type	Nos	Dia Hole mm	Make	Motive power											
		1	Jack hammer	8	32	Atlas Copco	Compressed air											
		2	Compressor	2	-	Atlas Capco	Diesel Drive											
	b.	Loading		: Excavator of 0.90m ³ bucket capacity (with Rock breaker attachment) (2No).														
	c.	Transportation		: Tipper 4Nos (5/10Ts) capacity.														
5.6		Disposal of Overburden		: The overburden in the form of topsoil, after excavation topsoil will be preserved along the boundary barrier utilized for afforestation purpose.														
5.7		Brief Note on Conceptual Mining Plan for the entire lease period		: <p>Conceptual Mining Plan is prepared with an object of five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc.</p> <p>Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc.</p> <p>Ultimate Pit dimension is given as under,</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">Ultimate Pit dimension (M)</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> </thead> <tbody> <tr> <td>I</td> <td>246</td> <td>103</td> <td>46</td> </tr> </tbody> </table> <p>Afforestation has been proposed on all along the boundary barrier by planting trees.</p> <p>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.</p>			Ultimate Pit dimension (M)				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)	I	246	103	46
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I	246	103	46															


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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 Kg of explosives. Blasting parameters are as follows:

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



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



6.3	Measures proposed to minimize ground vibration due to blasting	<p>➤ Controlled blasting measures will be adopted for minimizing ground vibration and fly rock.</p> <p>➤ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock.</p> <table border="1" data-bbox="752 593 1324 828"> <tr> <td>Number of holes</td> <td>: 236</td> </tr> <tr> <td>Powder factor</td> <td>: 6Ts/Kg of explosives</td> </tr> <tr> <td>Total explosive required</td> <td>: 118Kg 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	: 236	Powder factor	: 6Ts/Kg of explosives	Total explosive required	: 118Kg slurry explosives	Charge / hole	: 0.5Kg	Blasting time	: 12-2 Pm
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Blasting time	: 12-2 Pm											
6.4	Storage of Explosives and safety measures to be taken while blasting.	<p>➤ The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager.</p> <p>➤ The applicant ensure that will appoint the Mate (Should have Valid Blaster Certificate) during Blasting Operation.</p>										
7.0 Mine Drainage:												
7.1	Depth of Water table	<p>The ground water table is reported as 58m below ground level. In the proposed mining plan only 46m 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.</p>										
7.2	Arrangement and Places where the mine water is finally proposed to be discharged	<p>The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.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>										

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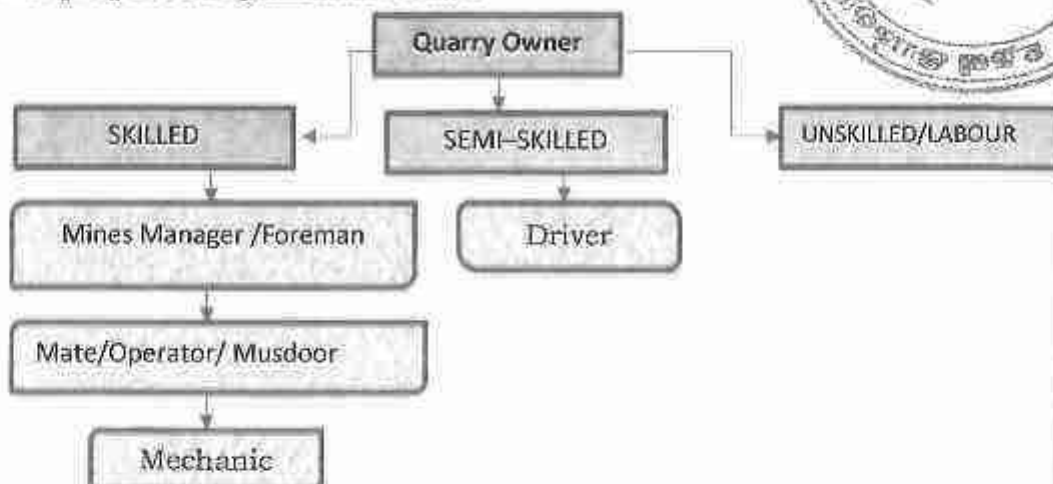
8.0 Other Permanent Structures:		
8.1	Habitations / Village	: There are few unapproved habitations situated within a radius of 300m.
8.2	Power lines (HT/LT)	: There is no Power lines (HT/LT) within a radius of 50m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	: There is Pond situated on southwestern side and is 170m away from the area, There is seasonal odai passing on western side and is 330m away from the area.
8.4	Archeological / Historical Monuments	: There are no Archeological / Historical Monuments within a radius of 300m.
8.5	Road (NH, SH, Village Road etc)	: The National Highway (NH-381B) Namakkal-Musiri about 8.9km on Southern side of the area. The State Highway (SH-161) Thathaiyangarpet - Namiakkal is about 8.5km on Northeastern 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 / Forest / Social Forest / Wild Life Sanctuary etc within a radius of 1Km.
8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	: There are No inter State border within a radius of 10Kms.
8.9	Any Other Structures	: Nil



9.0 Employment Potential & Welfare Measures:

9.1 Employment Potential (Management & Supervisory personnel)

The proposed organization chart



1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	12 No.
		Mechanic	1 No.
2.	Semi-skilled	Driver	4 No.
3.	Unskilled	Labours	10Nos
Total =			30Nos

Allowing 10% absentee, the no. of men of roll will be around 27.

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 Serugudi village which is about 0.5Km on northeastern side of the area.
b.	Sanitary facilities	:	Semipermanent 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.

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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 10.3Km (SE) in Musiri 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:	
	<p>Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.</p> <p>Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and systematic quarrying operation.</p> <div data-bbox="321 1198 784 1848" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">PERSONAL PROTECTIVE EQUIPMENT(PPE)</p> <p style="text-align: center;">YOU ONLY HAVE ONE BODY!</p> </div> <div data-bbox="972 1232 1379 1691" style="display: flex; flex-wrap: wrap; justify-content: space-around;"> </div>	



PART - B

10.0 Environmental Management Plan:

10.1	Existing Land Use Pattern	<p>: 1. The area exhibits almost plain covered by Topsoil formation.</p> <p>2. Quarrying operation is proposed up to a depth of 46m below ground level for the proposed mining plan period.</p> <p>3. Fluctuation of Water table in this area is in between 58m and 55m during a year.</p> <p>4. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation.</p> <p>The existing land use pattern is given as under.</p> <p align="center">Table No-5</p> <table border="1" data-bbox="666 884 1372 1153"> <thead> <tr> <th>Sl. No.</th> <th>Land Use</th> <th>Present Area (Ha)</th> <th>Area in use during the quarrying period (Ha)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Quarrying Pit</td> <td>0.35.0</td> <td>2.54.0</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>3.</td> <td>Roads</td> <td>0.01.0</td> <td>0.02.0</td> </tr> <tr> <td>4.</td> <td>Green Belt</td> <td>0.01.0</td> <td>0.62.0</td> </tr> <tr> <td>5.</td> <td>Unutilized</td> <td>2.82.0</td> <td>Nil</td> </tr> <tr> <td></td> <td>Total =</td> <td>3.19.0</td> <td>3.19.0</td> </tr> </tbody> </table>	Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)	1.	Quarrying Pit	0.35.0	2.54.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	0.01.0	0.02.0	4.	Green Belt	0.01.0	0.62.0	5.	Unutilized	2.82.0	Nil		Total =	3.19.0	3.19.0
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5.	Unutilized	2.82.0	Nil																											
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10.2	Water Regime	<p>: Water table in this area is noticed at a depth of 58m and presently, in the proposed mining plan only 46m below ground level depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. hence, it will not affect the ground water depletion of this area.</p>																												
10.3	Flora and Fauna	<p>: Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.</p>																												
10.4	Climatic conditions	<p>: Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate.</p> <p>This District receives rain both in south west and north east monsoon.</p> <p>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.</p>																												



10.5	Human Settlement	<p>The nearest habitations with the population is given as under.</p> <p style="text-align: center;">Table No-6</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S. No</th> <th style="width: 30%;">Name of the Village</th> <th style="width: 30%;">Approximate distance & Direction from lease applied area</th> <th style="width: 35%;">Approximate population</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Serugudi</td> <td>0.5Km - NE</td> <td>600</td> </tr> <tr> <td>2.</td> <td>Papapatti</td> <td>1.2Km - NW</td> <td>300</td> </tr> <tr> <td>3.</td> <td>Soorampatti</td> <td>0.5Km - SE</td> <td>400</td> </tr> <tr> <td>4.</td> <td>Appananallur</td> <td>3.1km - SW</td> <td>800</td> </tr> </tbody> </table>	S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population	1.	Serugudi	0.5Km - NE	600	2.	Papapatti	1.2Km - NW	300	3.	Soorampatti	0.5Km - SE	400	4.	Appananallur	3.1km - SW	800
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4.	Appananallur	3.1km - SW	800																			
10.6	Plan for Air, Dust Suppression	<p>Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. 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.</p>																				
10.7	Plan for Noise Control	<p>Quarrying of Rough Stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.</p>																				
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Five years	<p>The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF.</p>																				



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 46m 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 46m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.
10.11	Program for Afforestation	:	The 7.5m and 10m safety distance along the lease boundary has been identified to be utilized for afforestation. Appropriate native species of Neem/Pungan trees will be planted in the first year. Nearly 6200Sqm area is proposed to use under afforestation by planting 744nos 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. 19,14,000
	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. 22,14,000/-
	B. Operational Cost:		
	1. Machineries	:	Rs.70,00,000-
	2. Fencing cost	:	Rs.2,00,000-
	Total	:	Rs.72,00,000/-



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. 1,30,000/-
2. Sanitary Arrangements	:	Rs. 50,000/-
3. Safety kids	:	Rs. 50,000/-
4. Water sprinkling	:	Rs. 1,50,000/-
5. Afforestation	:	Rs. 1,00,000/-
Total=		Rs. 6,00,000/-
Total Project Cost (A+B+C)	:	Rs. 1,00,14,000/-
CSR Cost(2% of Total Project Cost)	:	Rs. 2,00,280/-

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.

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12.0 Any Other Details Intend to Furnish by the Applicant:

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

Prepared by

S. Gopi, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

S. GOPI, M.Sc.,

Qualified Person

Under Rule 15 of Amended MCR, 2016

Place : Salem
Date : 19.05.2023

This Mining Plan is approved subject to the conditions stipulated in this office L.O. No. 427/2022 Mines., Dated 02.06.2023. As per the Rule 41 & 42 of TNMMCR 1959.

**ASSISTANT DIRECTOR
GEOLOGY & MINING
TIRUCHIRAPPALLI**

ந.க.எண்.427/2022/கனிமம்

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் கரங்கத்துறை,
மாவட்ட ஆட்சியரக வளாகம்,
திருச்சிராப்பள்ளி-636 001.

நாள்: 17.05.2023.



குறிப்பாணை

பொருள்: கனிமங்களும், கரங்கங்களும் - சிறுவகைக் கனிமம் - திருச்சிராப்பள்ளி மாவட்டம் - முசிறி வட்டம் - சேருகுடி கிராமம் - புல எண்கள். 378/2B2, 378/2C, 380/4A, 380/4B2 மற்றும் 381/2A - மொத்தம் பரப்பு 3.61.0 ஹெக்டேர் - மட்டா நிலத்தில் கல் குவாரி செய்ய அனுமதி கோரி திரு.ரெரீந்திரன் என்பவர் விண்ணப்பித்தது - ஏற்பளிக்கப்பட்ட கரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் சமர்ப்பிக்க கோரப்பட்டது - தற்போது 3.61.0 ஹெக்டேர் நிலத்தில் 0.42 ஹெக்டேர் நிலப் பகுதியை மட்டும் தவிர்த்து மீதி பகுதியில் குவாரி பணிக்கு அனுமதி கோரப்பட்டது - ஏற்பளிக்கப்பட்ட கரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் சமர்ப்பிக்க கோருதல் - தொடர்பாக.

- பார்வை:
1. திரு.ரெரீந்திரன் என்பவர் விண்ணப்ப நாள்: 04.04.2022.
 2. இய்வகை இடே எண்ணிட்ட கடிதம் நாள்: 12.04.2022 (வருவாய் கோட்டாட்சியர், முசிறி அவர்களுக்கு முகவரியிடப்பட்டது).
 3. வருவாய் கோட்டாட்சியர், முசிறி அவர்களின் கடித ந.க.எண்.ஆ1/2050/2022 நாள்: 05.08.2022.
 4. உதவி இயக்குநர், புவியியல் மற்றும் கரங்கத்துறை திருச்சிராப்பள்ளி புலத்தணிக்கை அறிக்கை நாள்: 10.01.2023.
 5. அரசாணை எண்: 79, தொழில் (எம்.எம்.சி) துறை, நாள்: 6.4.2015.
 6. அரசாணை எண்: 169, தொழில் (எம்.எம்.சி) துறை, நாள்: 04.08.2020.
 7. உதவி இயக்குநர், புவியியல் மற்றும் கரங்கத்துறை திருச்சிராப்பள்ளி அவர்களின் ந.க.எண்.427/2022/கனிமம், நாள்: 07.02.2023.
 8. உதவி இயக்குநர், புவியியல் மற்றும் கரங்கத்துறை திருச்சிராப்பள்ளி புலத்தணிக்கை அறிக்கை நாள்: 27.02.2023.
 9. இய்வகை இடே எண்ணிட்ட கடிதம் நாள்: 01.03.2023 (வருவாய் கோட்டாட்சியர், முசிறி அவர்களுக்கு முகவரியிடப்பட்டது).
 10. வருவாய் கோட்டாட்சியர், முசிறி அவர்களின் கடித

ந.க.எண்.ஆ1/2050/2023 நாள்: 27.04.2023.

11 திரு.ரெ.ரீந்திரன் என்பவர் மனு நாள்: 13.05.2023

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பார்வை 1-ல் காணும் விண்ணப்பத்தில், 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகணிமீச் சலுகை விதி எண்:19(1)ன் படி திருச்சிராப்பள்ளி மாவட்டம், முசிநி வட்டம், சேருகுடி கிராமம், புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2 மற்றும் 381/2A ல் மொத்தபரப்பு 3.610 ஹெக்டேர் பட்டா நிலத்தில் 5 ஆண்டுகளுக்கு கல் குவாரி மேற்கொள்ள அனுமதி கோரி திரு.ரெ.ரீந்திரன் என்பவர் மனு செய்துள்ளார்.

மேற்படி இவ்விண்ணப்பம் தொடர்பாக, முசிநி, வருவாய் கோட்டாட்சியர் மற்றும் திருச்சிராப்பள்ளி புலியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோரால் புலத்தணிக்கை மேற்கொண்டு திருச்சிராப்பள்ளி மாவட்டம், முசிநி வட்டம், சேருகுடி கிராமம், புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2(P) (1.29.0) மற்றும் 381/2A(P) (0.14.5)-ல் மொத்த விஸ்தீரணம் 3.19.0 ஹெக்டேர் பட்டா நிலத்தில் கல் குவாரி செய்வதற்கு 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு பரிந்துரை செய்துள்ளார்கள்.

நியந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எல்வித இடையூறும் இன்றி கல் குவாரி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள அரசு புறம்போக்கு நிலத்திற்கு 10 மீட்டர் இடைவெளியும், பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு கல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. உயர்மூத்தம் மற்றும் தாழ்வழுத்த மின்கம்பிகளுக்கு தமிழ்நாடு சிறுகணிமீச் சலுகைவிதிகளின் படி போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. சுமார் 100 மீட்டர் தொலைவில் உள்ள குடிபாட்டு கோவிலுக்கு வழிபாட்டு நேர்வுகளில் இடையூறு ஏற்படாவண்ணம் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
5. குவாரித் தொழிலாளர்களை தமிழ்நாடு தொழிலாளர் நல வாரியத்தில் பதிவு செய்வதுடன் குழு கம்பீடு செய்வதையும் உறுதி செய்திடல் வேண்டும்.
6. வரைவு சுரங்கத் திட்டம் சமர்ப்பிக்கும்பொது இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021-ல் தெரிவித்த படி அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்திணை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS Survey செய்து அதன் அறிக்கையினை சமர்ப்பிக்க வேண்டும்.

குத்தகை அனுமதி கோரியுள்ள புல எண்கள்: 378/2B2 ,378/2C, 380/4A, 380/4B2 மற்றும் 381/2A மொத்த விஸ்தீரணம் 3.61.0 ஹெக்டேர் பட்டா நிலங்கள் கிராம கணக்குகளில் கீழ்க்கண்டவாறு தாக்கவாகியுள்ளது.



திருச்சிராப்பள்ளி மாவட்டம், முசிநி வட்டம், தூம்பலம் பகுதி, சேருகும் கிராம புன்செய் புல எண்.378/282 கிராம "அ" பதிவேட்டில் 0.23.5 ஏர்ஸ் 0.31 தீர்வை மட்டா எண்.247 பெ.தர்மலிங்கம் என பதிவு செய்யப்பட்டுள்ளது. கிராம புன்செய் புல எண்.378/2C "அ" பதிவேட்டில் 0.52.0 ஏர்ஸ் 0.65 தீர்வை மட்டா எண்.632-ன் மடி தெற்குடன் என பதிவு செய்யப்பட்டுள்ளது. கிராம புன்செய் புல எண்.380/4A "அ" பதிவேட்டில் 1.00.0 ஹெக்டேர் 1.24 தீர்வை மட்டா எண்.775-ல் பூநீநர் என பதிவாகியுள்ளது. கிராம புன்செய் புல எண்.380/4B2 "அ" பதிவேட்டில் 1.46.0 ஹெக்டேர் 1.80 தீர்வை மட்டா எண்.981-ல் திருப்பதி என பதிவாகியுள்ளது. கிராம புன்செய் புல எண்.381/2A "அ" பதிவேட்டில் 0.39.5 ஏர்ஸ் 0.48 தீர்வை மட்டா எண்.60 மாகணபதிபிள்ளை என பதிவு செய்யப்பட்டுள்ளது. கிராம 10(1) சிட்டாவில் மட்டா எண்.303 ரெங்கராஜன் மகன் ரபீந்திரன் என புல எண்.378/282-0.23.5 ஏர்ஸ், 378/2C-0.52.0 ஏர்ஸ், 380/4A-1.00.0 ஹெக்டேர், 380/4B2-1.46.0 ஹெக்டேர், 381/2A-0.39.5 ஏர்ஸ் என பதிவு செய்யப்பட்டுள்ளது. மேற்படி புல எண்களை புலத்தணிக்கை செய்த போது புல எண்கள்.378/282, 380/4A, 380/4B2, 381/2A ஆகியவற்றில் பாறை குழிகள் உள்ளன. புல எண்.378/2C-ல் பாறைகள் கற்களாக உள்ளது.

மேற்படி குவாரி அமைக்க கோரும் புல எண்.380/4A - இன் நான்கெல்லைகள் முசிநி வருவாய் கோட்டாட்சியர் அவர்களின் அறிக்கையின் படி பின்வருமாறு அமைந்துள்ளன.

378/2C	ரபீந்திரன் நிலத்திற்கு தெற்கு
380/4B2	ரபீந்திரன் நிலத்திற்கு வடக்கு
380/1A	பரமேஸ்வரன் நிலத்திற்கு கிழக்கு
382/2	கல்லாங்குத்துக்கு மேற்கு

புல எண்.378/282 -ன் நான்கெல்லைகள் விவரம்.

378/2B1	பரமேஸ்வரன் நிலத்திற்கு கிழக்கு
378/2C	ரபீந்திரன் நிலத்திற்கு மேற்கு
378/1	வண்டிப்பாறைக்கு தெற்கு
380/4A	ரபீந்திரன் நிலத்திற்கு வடக்கு

புல எண்.378/2C-ன் நான்கெல்லை விவரம்.

378/282	ரபீந்திரன் நிலத்திற்கு கிழக்கு
370/4	கிருஷ்ணசாமி நிலத்திற்கு மேற்கு
378/1	வண்டிப்பாறைக்கு தெற்கு
380/4A	ரபீந்திரன் நிலத்திற்கு வடக்கு

புல எண்.381/2A-ன் நான்கெல்லை விவரம்.

381/2B	சப்பாணிவாசன் நிலத்திற்கு வடக்கு
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382/2	கல்வாயறத்திற்கு, தெற்கு
381/28	சப்பாணிவாசல் நிலத்திற்கு, மேற்கு
380/4B2	ரேந்திரன் நிலத்திற்கு, கிழக்கு



புல எண்.380/4B2-ன் நான்கெல்லை விவரம்.

380/4A	ரேந்திரன் நிலத்திற்கு, தெற்கு
387/1C	ரேந்திரன் நிலத்திற்கு, வடக்கு
380/4B1	ரேந்திரன் நிலத்திற்கு, கிழக்கு
381/2A	ரேந்திரன் நிலத்திற்கு, மேற்கு

மேற்படி நிலங்கள் பூச்சியில் தரிசாகவும், கிராம 10(1) சிட்டாவில் பட்டா எண்.303-ல் செங்கராஜன் மகன் ரேந்திரன் என்று பெயரில் பதிவாகியுள்ளது.

பட்டாதாரால் விண்ணாபம் செய்யப்பட்டுள்ள புலத்திற்கு வடக்கு திசையில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 100 மீட்டர் தொலைவில் ஸ்ரீராமாஜி புல மெட்டல் உரிமையாளர் குண்டிக்கற்களை அவர்களின் புல எண்.380-ல் குவித்து வைத்துள்ளார். சுமார் 200 மீட்டர் தொலைவில் காட்டுக்கோவில் ஒன்றும் சுமார் 150 மீட்டர் தொலைவில் விடு மற்றும் மின்கம்பங்கள் அமைந்துள்ளது. வடகிழக்கு திசையில் விண்ணாபம் செய்துள்ள பட்டாதாரால் ஏற்கனவே குவாரிப் பணிகள் மேற்கொள்ளப்பட்ட புல எண்.378-ல் குவாரியில் நீர் நிரம்பி காணப்பட்டது.

இப்புலத்திற்கு தெற்கு திசையில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 100 மீட்டரில் தாழ்வழுத்த மின்கம்பிகள் மற்றும் இப்புலத்தின் அருகில் உள்ள நிலங்களில் வைலமரங்கள் (Eucalyptus) காணப்படுகின்றன. இப்புலத்தின் எல்லையிலிருந்து சுமார் 1.5 கிலோ மீட்டர் தூரத்தில் சூரப்பட்டி கிராமம் அமைந்துள்ளது.

இப்புலத்தின் மேற்கில் குவாரி அமைய உள்ள புலத்தின் எல்லையிலிருந்து சுமார் 300 மீட்டர் தூரத்தில் விண்ணாபதாரருக்கு சொந்தமான Crusher Unit ஒன்று புல எண். 401-ல் காணப்படுகிறது. சுமார் 20 மீட்டர் தொலைவில் Thatched Shed ஒன்றும் சுமார் 100 மீட்டர் தூரத்தில் தாழ்வழுத்த மின்கம்பிகள் செல்கின்றது.

குத்தகை கோரும் புல எண்களுக்கு அருகே புராதான சின்னங்கள், கோவில்கள், பள்ளிகள், சமாதிகள், மற்றும் நிரந்தர குடியிருப்பு வீடுகள் ஏதும் இல்லை என தெரிவிக்கப்பட்டுள்ளது.



பார்வை (7)-ல் காணும் உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி அவர்களின் கடிதத்தில் குறிப்பிடப்பட்ட குத்தகை இன்ற பரப்பு ஆணை பார்வை(11)-ல் கண்ட விண்ணப்பதாரரின் கோரிக்கை அடிப்படையில் இரத்து செய்யப்படுகிறது.

பார்வை (8)ல் காணும் உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை திருச்சிராப்பள்ளி அவர்களின் புலத்தணிக்கையில் குவாரி குத்தகைக்கு விண்ணப்பித்த பகுதியில் கார்னெட்டிபெரஸ் நெய்சிக் (Gemetic ferrous gneiss) சார்னோடைட் வகை பாறைகள் காணப்படுகின்றன.

பார்வை (9)-ல் காணும் கடித்தின்படி வருவாய் வட்டாட்சியர், முசிறி அவர்களிடம் மீள அறிக்கை கோரப்பட்டது. அதன்படி பார்வை (10)-ல் காணும் கடித்தின் வாயிலாக வருவாய் கோட்டாட்சியர், முசிறி அவர்கள் வட்டாட்சியர், முசிறி அவர்களின் அறிக்கையின் அடிப்படையிலும் மேற்படி புலங்களை 26.04.2023 அன்று தலப்பார்வை செய்ததின் அடிப்படையிலும் விண்ணப்பதாரருக்கு குத்தகை உரிமம் வழங்க கீழ்க்கண்டவாறு பரிந்துரை செய்துள்ளார்.

*திருவீரத்திரன் என்பவர் சேருகுடி கிராம புல எண். 378/2B2, 378/2C, 380/4A, 380/4B2, 381/2A-ல் சாதாரண கற்கள் வெட்டி எடுக்க 1959ம் ஆண்டு சிறுகனிம சலுகை விதிகளின் கீழ் விண்ணப்பம் செய்துள்ளார். இந்நேரவில் புல எண். 380/4B2 பரப்பு 1.46.0ஹெக்டேர் மனுதாரர் பெயரில் உள்ள பட்டா நிலத்தின் புலப்படத்தில் மேற்புறம் குட்டை விளக்கியாக காண்பிக்கப்பட்டுள்ளது. மேலும் மேற்படி பட்டா குட்டைக்கு நீர்வழிப்பாதை ஒன்றும் மேற்படி புல எண்ணில் விளக்கியாக காண்பிக்கப்பட்டுள்ளது.

தலத்தணிக்கையில் மேற்படி புல எண்ணில் புலப்படத்தில் உள்ளவாறு சுமார் 7 சென்ட் பரப்பில் குட்டை தூர்ந்த நிலையில் உள்ளது தெரியவருகிறது. மேற்படி குட்டையில் நீர்த்தேங்கி அதன் மூலம் பாசனம் செய்ததற்கான அறிகுறி ஏதும் காணப்படவில்லை. மேலும், மேற்படி குட்டைக்கான ஆயக்கட்டு நிலங்கள் ஏதுமில்லை. புலப்படத்தில் விளக்கியாக காட்டப்பட்டுள்ள நீர்வழித்தடம் பூஸ்திதியில் இல்லை. மேலும், மேற்படி புல எண். 380/4B2 பரப்பு 1.46.0ஹெக்டேர் நிலம் கிராம கணக்கில் மனுதாரர் வீரத்திரன் என்பவர் பெயரில் தாக்கலாகி உள்ளது. புல எண்கள்.380/4A மற்றும் 380/4B2 ஆகியவை ஏற்கனவே கல்குவாரி குத்தகை வழங்கப்பட்டு குவாரி நடந்த இடமாகும். புல எண்கள்.378/2B2, 380/4A, 380/4B2 மற்றும் 381/2A ஆகியவற்றில் பாறைகுழிகள் உள்ளன. புல எண்.378/2C-ல் பாறைகள் கற்கள் உள்ளன.



எனவே, மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டன ஆகிய பூச்சியில் தாரீந்த நிலையில் உள்ளதானும், தண்ணீர் தேக்கி வைப்பதற்கான குழல் திட்டத்தினாலும் மேற்படி குட்டைக்கு ஆயக்கட்டு நிலங்கள் ஏதுமில்லை என்பதானும், மேற்படி புல எண்ணில் விளக்கியாக காட்டப்பட்டுள்ள நீர்வழித்தடம் பூச்சியில் இல்லை என்பதானும், மேற்படி பூச்சியில் ஏற்கனவே கங்குவாரி நடத்துவதற்கு அனுமதி வழங்கப்பட்டு, கங்குவாரி செயல்பட்டு வந்துள்ளதன் அடிப்படையிலும் விண்ணப்பதாரர் திரு.ரீந்திரன் என்பவர் பெயரில் கங்குவாரி குத்தகை உரிமம் அனுமதி வழங்கலாம் என தெரிவித்துள்ளார். மேலும், பார்வை (10)-ல் காணும் மனுவில் திரு.ரீந்திரன் என்பவர் தனது சொந்த உபயோகத்திற்காக புல எண். 380/4B2-ல் உள்ள 1.46.0 ஹெக்டேர் மொத்த பரப்பளவில் இருந்து 0.17 ஹெக்டேர் பரப்பு மற்றும் புல எண்.381/2A-ல் உள்ள 0.39.5 ஹெக்டேர் மொத்த பரப்பளவில் இருந்து 0.25.0 ஹெக்டேர் ஆக மொத்தம் 0.42.0 ஹெக்டேர் பரப்புளவு பகுதியை சொந்த உபயோகத்திற்கு பயன்படுத்துவதாகவும் இது உள்ள பகுதியில் கங்குவாரி பணி மேற்கொள்ள அனுமதி தரும்படியும் கேட்டுக்கொண்டுள்ளார்.

எனவே, வருவாய் கோட்டாட்சியர், முசிறி மற்றும் உதவி இயக்குநர், பூச்சியல் மற்றும் கரங்கத்துறை, திருச்சிராப்பள்ளி ஆகியோரின் அதிகக்கையின் படி திருச்சிராப்பள்ளி மாவட்டம், முசிறி வட்டம், சேருகுடி கிராமம், புலஎண்கள். 378/2B2 ,378/2C, 380/4A, 380/4B2(P) (1.29.0) மற்றும் 381/2A(P) (0.14.5)-ல் மொத்த வீச்சீரணம் 3.19.0 ஹெக்டேர் பட்டா நிலத்தில் திரு.ரீந்திரன் என்பவருக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகணிமக் சலுகை விதி 19(1)-ன் படி கங்குவாரி செய்வதற்கு குத்தகை பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்குவதற்குரிய தேற்று (Precise Area Communication) பரப்பாக கருதலாம்.

மேலும், தமிழ்நாடு சிறுகணிம சலுகை விதிகள் 1959 விதி எண். 41 மற்றும் 42-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சரங்க திட்டத்தினை 90 தினங்களுக்குள் கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு சமர்ப்பிக்குமாரும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப்பெறவும் மனுதாரர் கேட்டுக்கொள்ளப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடைபூரும் இன்றி கங்குவாரி மேற்கொள்ள வேண்டும்.

2. அருகில் உள்ள அரசு புறங்கோக்கு நிலத்திற்கு 10 மீட்டர் ஜனா வெளியல், பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு ஜனா வெளியல் விட்டு கல் குவார்டிங் பணி மேற்கொள்ள வேண்டும்.
3. உட்புறத்தின் மற்றும் தாழ்வாரத்தின் பின்னங்கோக்கு நிலத்திற்கு கல் குவார்டிங் பணி மேற்கொள்ள வேண்டும்.
4. சுமார் 100 மீட்டர் தொலைவில் உள்ள குடிபாட்டு கோணிகளுக்கு வழிபாட்டு ஷேட்களில் இடைபூறு ஏற்படவண்ணம் குவார்டிங் பணி மேற்கொள்ள வேண்டும்.
5. குவார்டிங் தொழிலாளர்களை தனிநபராக தொழிலாளர் நல வாரியத்தில் பதிவு செய்வதன் குழு கார்ட்டு செய்வதையும் உறுதி செய்திடல் வேண்டும்.
6. வரைவு கரங்கத் திட்டம் சமர்ப்பிக்கும்பொது ஜயக்குநர், புனிவியல் மற்றும் கரங்கத்துறை சென்னை அவர்களின் கடித ந.க.எண்.2921/எம்.எம்.4/2016 தேதி.09.03.2021-ல் தெரிவித்த படி அங்கீகரிக்கப்பட்ட நபர்களை கொண்டு மேற்கண்ட புலத்தினை விண்ணப்பதாரர் தனது சொந்த செலவில் DGPS Survey செய்து அதன் அறிக்கையினை சமர்ப்பிக்க வேண்டும்.



[Handwritten Signature]
17/5/22

உதவி ஜயக்குநர்,
புனிவியல் மற்றும் கரங்கத்துறை,
திருச்சிராப்பள்ளி

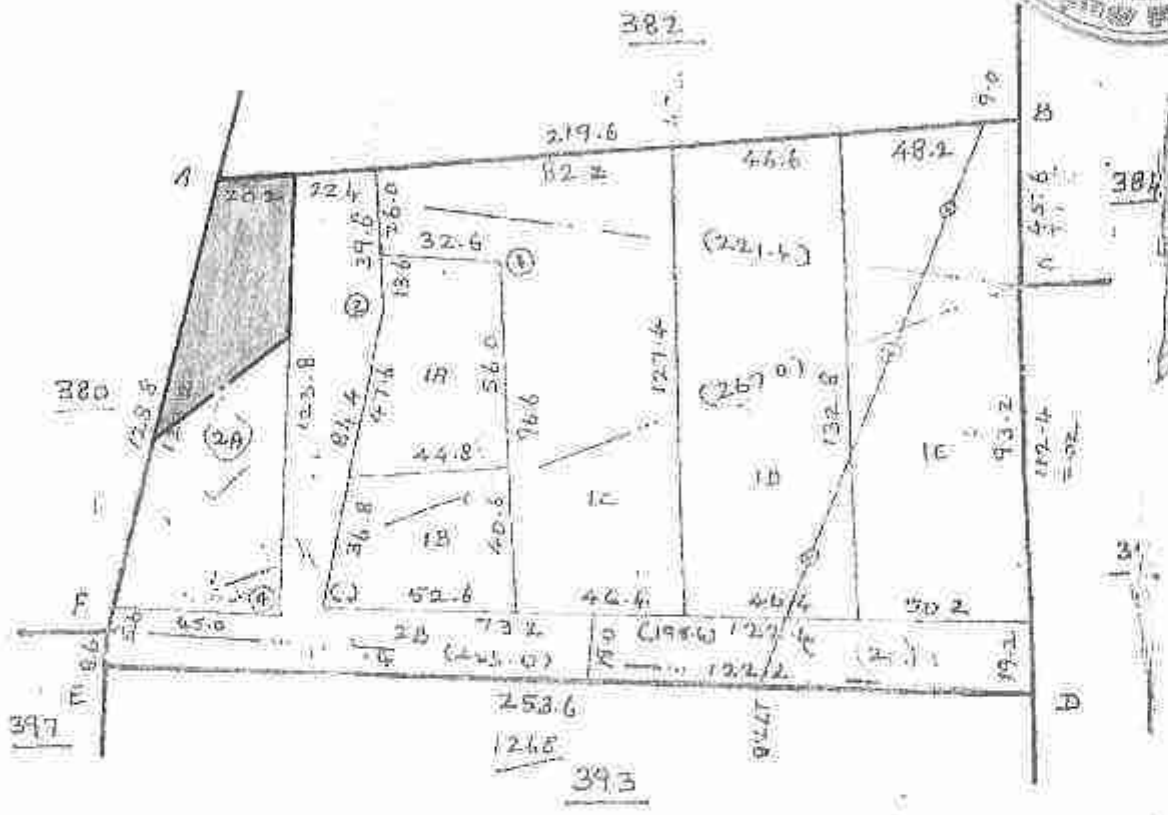
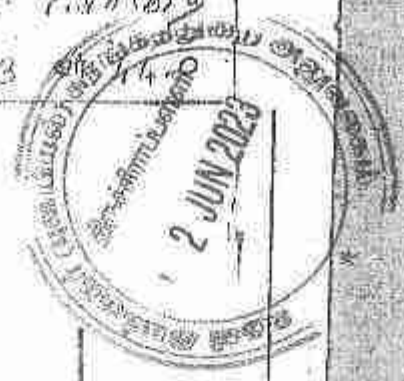
பெறுதல்,

திரு.ரெ.ரஜிந்திரன்,
த/பெ.ரெங்கராஜன்
எண்.452/54.E2, V.O.C. நகர் மெயின் ரோடு,
காங்குடி வட்டம், திருச்சிராப்பள்ளிமாவட்டம்.

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17/5/22

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புல எண்: 381
 பரப்பு: சென்சிட்டிவ்
 கிராமம்: வெய்யூர் (150) டி
 தாலுகா: 4/5



(உரிமையாளர்)
 கி. சி. சிவசாமி அண்ணாதுரை
 18, செருகுடி வீதி,
 முச்சி TK, திருச்சி Dt.

		F	
		(267.0)	
4	12.6	222.2	
		131.6	57.1
		C	
		F	
		(267.0)	
3	15.2	210.4	
		165.2	56.2
		C	

உரிமையாளர்
 கி. சி. சிவசாமி அண்ணாதுரை
 23986
 11/12

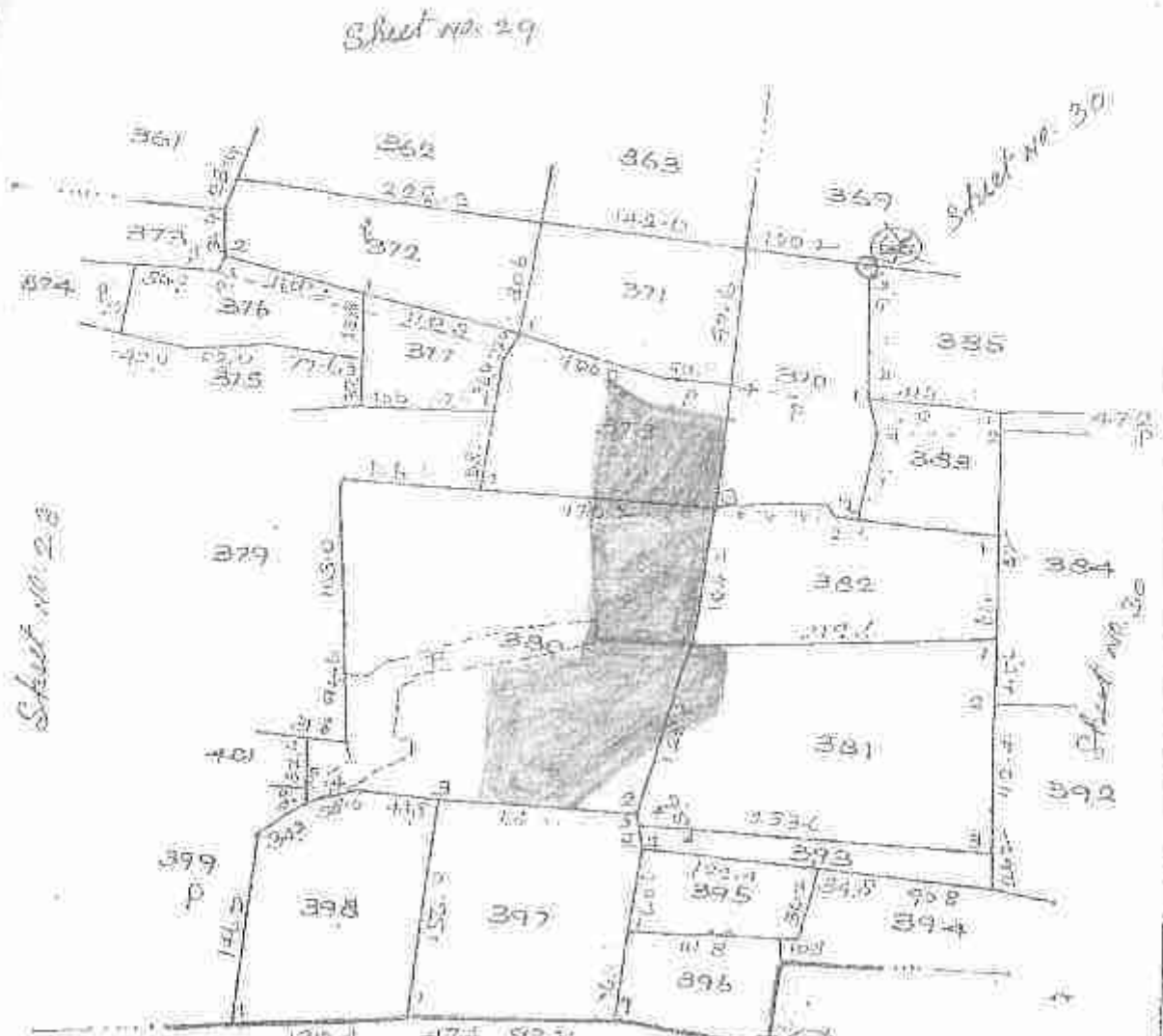
அளவு: 115.5 : 2000 ஏ.டி.

LEASE APPLIED AREA

M.L.O. *[Signature]*
 1751 STROD.

31
 Sheet No: 31
 பரப்பு: சென்னை

சிராமம்
 கிராம சபை



1200000 சென்னை

[Signature]
 சிராம நிர்வாக அலுவலர்
 18, செருகுடி சிராமம்
 முசிறி Tk, திருச்சி Dt.

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ANNEXURE IV

தமிழக அரசு
வருவாய்த் துறை

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



மாவட்டம் : திருச்சிராப்பள்ளி
வருவாய் கிராமம் : சேர்குடி

பட்டா எண் : 303

உரிமையாளர்கள் பெயர்

1. ரெங்கராஜன்

தற்கை

ரய்திரன்

பட்டா எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	
371	2B	0 - 22.50	0.28	--	--	--	--	S2004/1658--- 25-11-2004
371	3	0 - 45.50	0.56	--	--	--	--	S2004/1658--- 25-11-2004
378	2B2	0 - 23.50	0.31	--	--	--	--	S2004/1658--- 25-11-2004
378	2C	0 - 52.00	0.65	--	--	--	--	S2004/1658--- 25-11-2004
379	6	0 - 22.00	0.27	--	--	--	--	DK1181/11--- 13-08-2011
380	2	0 - 6.00	0.08	--	--	--	--	S2004/1721--- 25-11-2004
380	4A	1 - 0.0	1.24	--	--	--	--	DK1181/11- -2004/64 -- 13- 08-2011
380	4B1	0 - 71.00	0.87	--	--	--	--	DK1181/11--- 13-08-2011
380	4B2	1 - 46.00	1.80	--	--	--	--	DK1181/11--- 13-08-2011
381	2A	0 - 39.50	0.48	--	--	--	--	DK1181/11--- 13-08-2011
381	2C	0 - 23.00	0.29	--	--	--	--	DK1181/11--- 13-08-2011
382	1	0 - 60.50	0.66	--	--	--	--	--- -- 29-11- 2002
382	3	0 - 16.50	0.18	--	--	--	--	--- -- 29-11- 2002
383	2	0 - 69.50	0.86	--	--	--	--	DK1181/11--- 13-08-2011
391	2	0 - 32.50	0.40	--	--	--	--	DK1181/11--- 13-08-2011
397	1A	0 - 19.50	0.24	--	--	--	--	DK1181/11--- 13-08-2011
397	1C	0 - 37.00	0.46	--	--	--	--	DK1181/11--- 13-08-2011
398	1A1	0 - 41.50	0.51	--	--	--	--	DK1181/11--- 13-08-2011

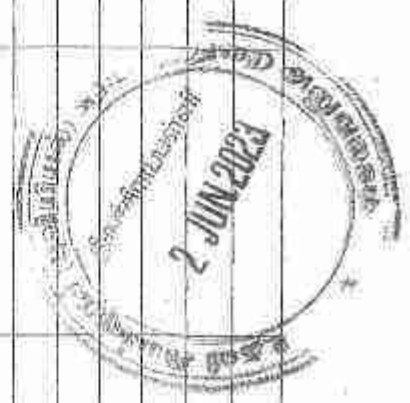
399	1B	0 - 22.50	0.29	--	--		DK1181/11--- -- 13-08-2011
401	1A	0 - 40.00	2.25	--	--		DK1181/11--- -- 13-08-2011
401	1B	0 - 21.00	1.17	--	--		DK1181/11--- -- 13-08-2011
401	1C1	0 - 6.00	0.34	--	--		DK1181/11--- -- 13-08-2011
401	1C5	0 - 31.00	1.73	--	--		DK1181/11--- -- 13-08-2011
402	5A	--	--	0 - 16.00	2.32		DK1181/11--- -- 13-08-2011
402	5B	--	--	0 - 11.00	1.57		DK1181/11--- -- 13-08-2011
		9 - 48.50	15.92	0 - 27.00	3.89		

குறிப்பு 2 :



1. பெண்கள் தகவல் / சான்றிதழ் நகல் விவரங்கள் யின் பதிவேட்டிலிருந்து பெறப்பட்டவை, இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 15/04/045/00303/60576 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 19-05-2023 அன்று 11:40:17 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் barcode பயன்பாடு மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்.

(Handwritten Signature)



சென்னை 2
 திருவள்ளூர் மாவட்டம் கருவாசி வார்டு 18-ம் வட்டம் கருவாசி கட்டிடம் கட்டிடம்

பெயர்	பெயர்					பெயர்	பெயர்	பெயர்	பெயர்	பெயர்
	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்					
...

1A-21 - சட்டமன்றம், திருச்சூர், கருவாசி வார்டு 18-ம் வட்டம் கருவாசி கட்டிடம் கட்டிடம்

பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்
...

...

(Handwritten signature)

	2	3	4	5	6	7	8	9	10	11
1	380	1	4		8-3	10	1 24	0 05.5	0 07	502 ப. முத்து விளக்கம்
2		2	4		8-3	10	1 24	0 60.0	0 08	775 ப. முத்து விளக்கம் (1), ப. முத்து விளக்கம் (2), ப. முத்து விளக்கம் (3).
3		3	4					0 31.5		
4		4	4		8-3	10	1 24	3 17.0	3 01	775 ப. முத்து விளக்கம் (1), ப. முத்து விளக்கம் (2), ப. முத்து விளக்கம் (3).
5								5 70.5	6 72	
6	38	1A	4		8-3	10	1 24	0 13.0	0 27	33 ப. முத்து விளக்கம்
7	38	1B	4		8-3	10	1 24	0 18.5	0 23	714 ப. முத்து விளக்கம் (1), ப. முத்து விளக்கம் (2).
8	38	1C	4		8-3	10	1 24	0 30.0	0 32	775 ப. முத்து விளக்கம் (1), ப. முத்து விளக்கம் (2), ப. முத்து விளக்கம் (3).
9	38	1D	4		8-3	10	1 24	0 50.5	0 56	33 ப. முத்து விளக்கம்
10	38	1E	4		8-3	10	1 24	0 02.0	0 03	714 ப. முத்து விளக்கம் (1), ப. முத்து விளக்கம் (2).
11	38	1F	4		8-3	10	1 24	0 30.5	0 38	60 ப. முத்து விளக்கம்
12	38	1G	4		8-3	10	1 24	0 43.5	0 54	478 ப. முத்து விளக்கம்
13	38	1H	4		8-3	10	1 24	0 11.0	0 20	பி. முத்து விளக்கம்
14								3 44.0	4 20	
15	382	1	4		8-3	11	1 24	0 00.5	0 06	303 ப. முத்து விளக்கம்
16	2							1 17.5		



சுயமாக
செய்தது

(2007/06/05/01)

இந்த விவரம் விவரமாக...
 சீரம் திரவிக அலுவலர்
 18, சந்திரகிராமம்
 முகிதி Tk, திருச்சி Dt.

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भारत सरकार
GOVERNMENT OF INDIA



பெ. ராஜேந்திரன்
R Rabeendran
பிறந்த நாள் / DOB : 02/06/1965
ஆண் / MALE



6022 3915 4788

சமூக அடையாள அட்டை



भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

Address:
S/O Ranganajan, 45/2/54 E 2-V
G C NAGAR, MAIN ROAD,
ALGUDI TALUK, Angara
Tiruchirappalli, Tamil Nadu
621703

Address:
S/O Ranganajan, 45/2/54 E 2-V
G C NAGAR, MAIN ROAD,
ALGUDI TALUK, Angara
Tiruchirappalli, Tamil Nadu
621703



1847
1800 307 3047

www.uidai.gov.in



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Jeppiaar Cements Private Limited

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



CERTIFICATE

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

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

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



For Jeppiaar cements (P) Ltd

S. Kannan

Mines Agent and General Manager

Attested
30.3.23
Head Master
Govt High School
Thimmachipuram 639 105
Kannur - Dt



FACULTY OF SCIENCE
அறிவியல் புலம்



The Senate of the University of Madras hereby makes known that **GOPINATH** has been admitted to the

DEGREE OF MASTER OF SCIENCE IN GEOLOGY

he/she having been certified by duly appointed Examiners to be qualified to receive the same and was placed in the **FIRST CLASS** at the Examinations held in

FIRST CLASS

APRIL 2010

through **PRESIDENCY COLLEGE, CHENNAI (Autonomous)**

சென்னைப் பல்கலைக்கழகப் பேரவை, 2010 ஆம் ஆண்டு ஏப்ரல்

மாதம் நடைபெற்ற தேர்வுகளில்

தேர்ச்சியில்

சென்னை, மாநிலக் கல்வியியல் (தொண்டாட்சி)

பயிற்சியில்

கேள்வி

என்பவரின்

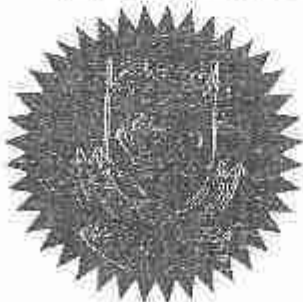
முதல் வகுப்பில்

தேர்ச்சி வெற்றியாக உள்ளது.

தேர்வாளர்கள் சான்றளித்தபடி, அறிவியல் பி.எஸ்சி.

என்னும் பட்டத்தை அவருக்கும் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

Sua under the seal of the University



Date:
நாள்:

03 MAR 2011

Chennai, Chennai 600 005, Tamil Nadu, India.
சென்னை, சென்னை - 600005, தமிழ்நாடு, இந்தியா.

[Signature]
Registrar
பதிவுரை

[Signature]
Vice-Chancellor
அனைவலந்தர்

[Signature]
Head Master
Govt High School
Thimmachipuram 638 108
Karur - 01

2K-71 027915

[Signature]

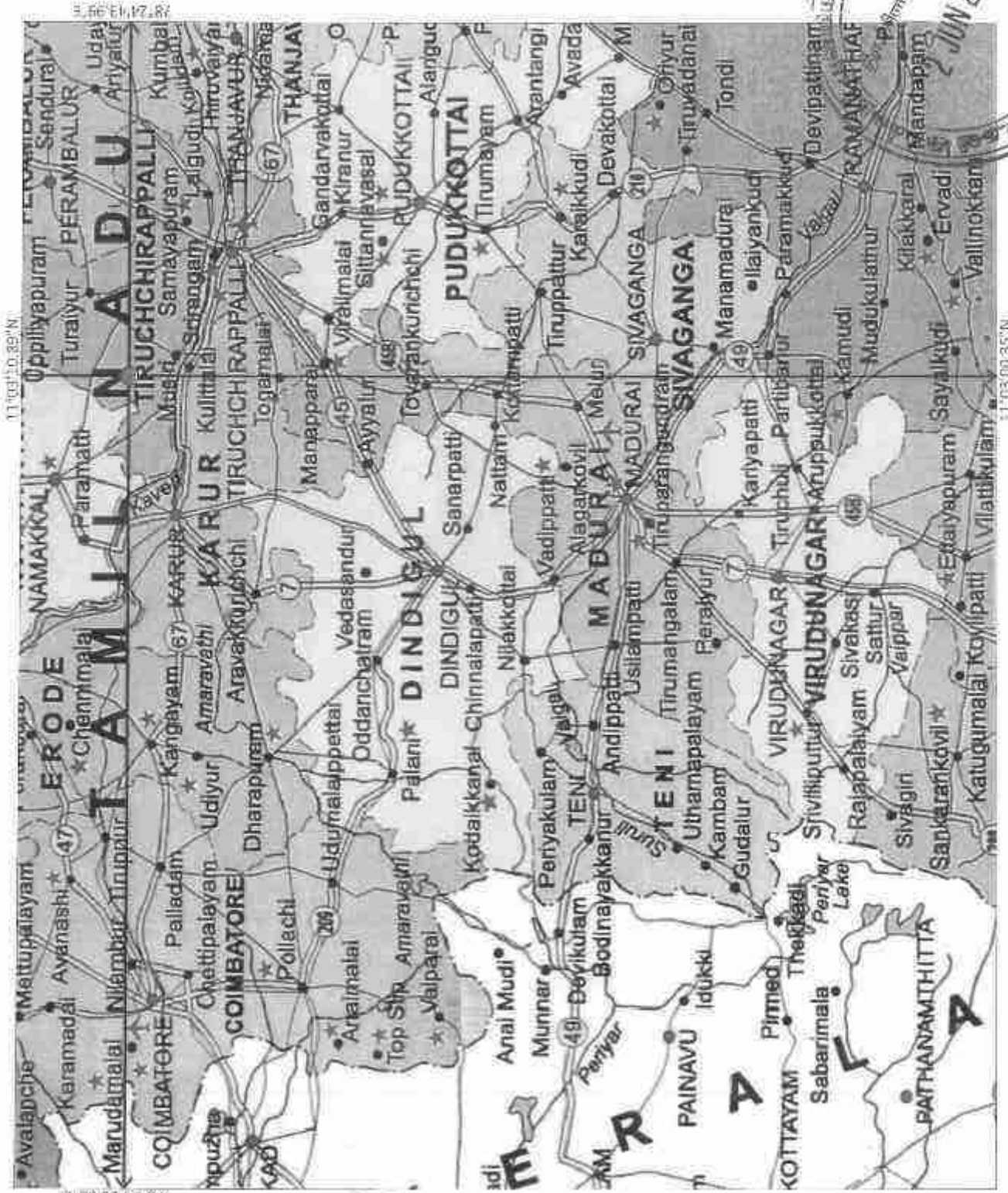


PLATE NO: I
 DATE OF SURVEY: 15.05.2023
 APPLICANT:
 HIGGS FERTILISERMAN,
 5/3, TENKALAI,
 NO. 45/254, EDUVILAI, CIVILAVAN MAIN ROAD,
 LAAGUVAI, TALUK,
 MULLAIPPALLE, DISTRICT.
 QUARRY LEASE APPLIED AREA,
 S.F. NOS. 378/29, 378/26, 380/1A, 380/1B, 381/1A, 381/1B,
 385/1A, 385/1B,
 EXTENT: 3.150 Ha,
 VILLAGE: SIVAGANGA,
 TALUK: MADURAI,
 DISTRICT: TAMILNADU.

INDEX

G.L. APPLIED AREA :
 TOPO SHEET NO. : 581/06
 LATITUDE : 11°03'00.35" N To 11°03'10.85" N
 LONGITUDE : 78°24'38.33" E To 78°24'43.99" E

LOCATION PLAN

NOT TO SCALE



PREPARED BY:
 SURVEYOR
 I hereby certify that the information
 on this plate is true and correct to
 the best of my knowledge based upon
 the field work and the data furnished.
 THIS MAP AUTHENTICATED BY STATE
 GOVERNMENT

SIVAGANGA
 QUALIFIED PERSON

11°03'10.35"N

11°03'00.35"N

78°24'38.33"E

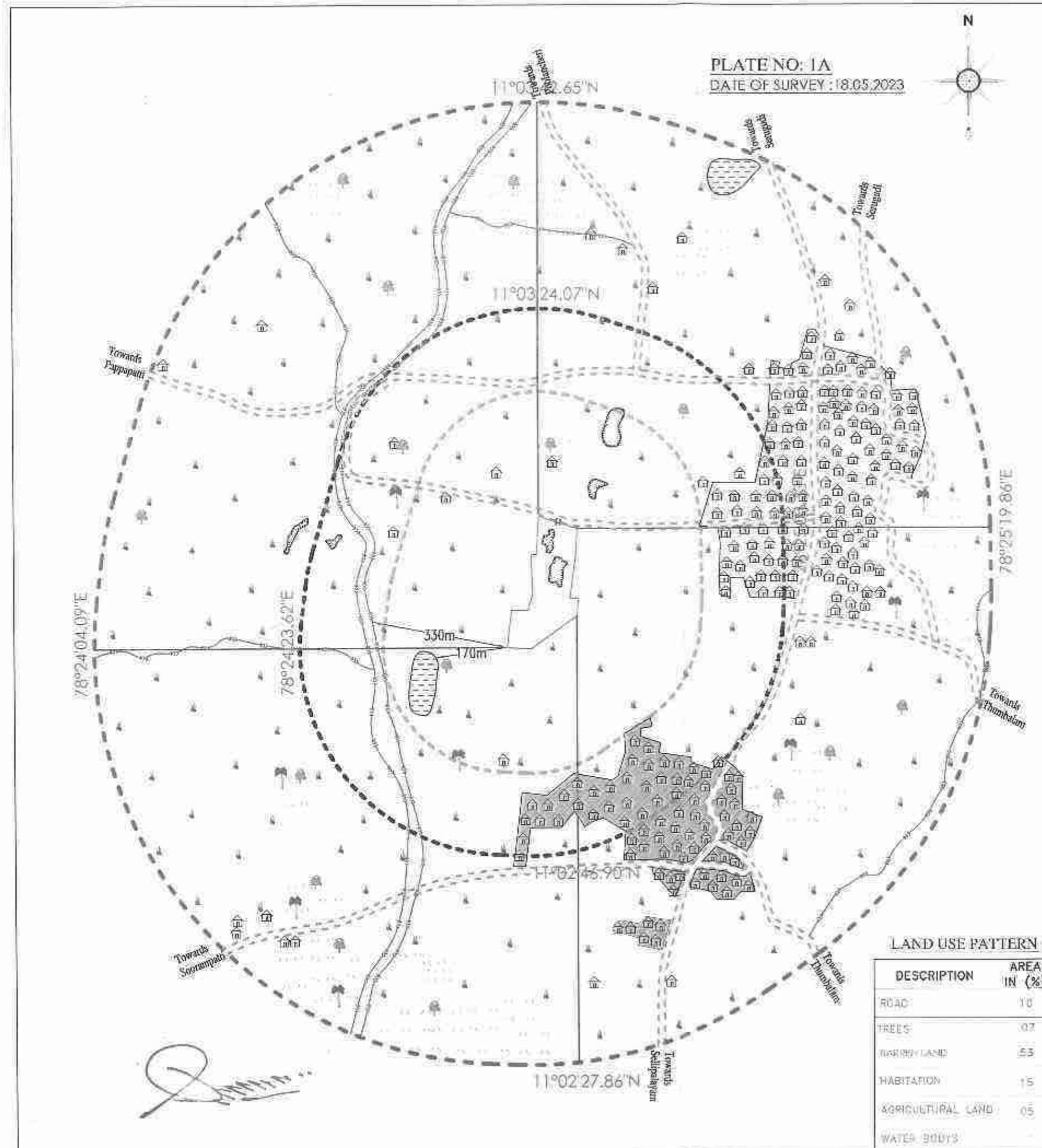


PLATE NO: 1A
DATE OF SURVEY : 18.05.2023



APPLICANT:
THIRU R. RAJENDRAN,
S/O. RENGARAJAN,
NO.452/54.E2, V.O.C NAGAR MAIN ROAD,
LALSUDI, TALUK-
TIRUCHIRAPPALLI DISTRICT.

QUARRY LEASE APPLIED AREA:
S.F.NOS : 378/2B2, 378/2C, 380/4A, 380/4B, 380/4C & 381/2A (Part).
EXTENT : 3.19.0 Ha,
VILLAGE : SERUGUDI,
TALUK : MUSIRI,
DISTRICT : TIRUCHIRAPPALLI

INDEX

TOPO SHEET NO : 58/1/08
LATITUDE : 11°03'00.35"N to 11°03'00.89"N
LONGITUDE: 78°24'38.33"E to 78°24'43.99"E

Q.L APPLIED AREA	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
PANCHAYAT ROAD	
BARREN LAND	
TREES	
SEASONAL AGRICULTURE	
HABITATIONS	
QUARRY PIT	
POND	
ODAI	

ENVIRONMENTAL PLAN
SCALE 1 : 10,000

LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	10
TREES	07
BARREN LAND	53
HABITATION	15
AGRICULTURAL LAND	05
WATER BODYS	-

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

S. GOPAL M. Sc.,
QUALIFIED PERSON





78°24'04.09"E

11°03'00.65"N

78°25'19.86"E

11°02'27.86"N

சுரேஷ்டி

[Handwritten signature]



PLATE NO: 1B

DATE OF SURVEY: 18.05.2023

APPLICANT:
 THIRU S. RABEENDRAN,
 S/O. BENGARAJAN,
 NO. 452/54, E3, V.O. E. NAGAR MAIN ROAD,
 LAICUBI TALUK,
 TIRUCHIRAPPALLI DISTRICT.

QUARRY LEASE APPLIED AREA:
 S.F.NOS : 378/2B2, 378/2C, 380/4A, 380/4B2 (Part)
 & 381/2A (Part),
 EXTENT : 3.19.0 Ha.
 VILLAGE : SERUGUDI,
 TALUK : MUSIRI,
 DISTRICT : TIRUCHIRAPPALLI.

INDEX

TOPO SHEET NO : 58 I / 08
 LATITUDE : 11°03'00.35"N to 11°03'10.89"N
 LONGITUDE : 78°24'38.33"E to 78°24'43.99"E

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

SATELLITE IMAGE
 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

[Handwritten signature]
 S. GOVINDARAJAN,
 QUALIFIED PERSON

Towards
Narakkal



Padur

Devanur

Serugudi

Mavilipatti

Pappapatti

Tosavali
Pappapatti

Sourampatti

Towards
Thiruvananthapuram

SH-167

Towards
Tharuvattur

PLATE NO:LD

DATE OF SURVEY :18.05.2023

APPLICANT:

THIRU RAFEENDRAN,
S/O. RENGARAJAN,
NO.482/5412, V.O.C. NAGAR MAIN ROAD,
LAGUDIPITALUKI
TIRUCHIRAPPALLI DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NOS 378/2B2, 378/2C, 380/4A, 380/4B2 (Part)
& 381/2A (Part).

EXTENT : 3.19.0 Ha.

VILLAGE : SERUGUDI.

TALUK : MUSIRI.

DISTRICT : TIRUCHIRAPPALLI.

INDEX

Q.L. APPLIED AREA



STATE HIGHWAY



MAJOR DISTRICT ROAD



PANCHAYAT ROAD



APPROACH ROAD



HABITATIONS



KEY PLAN

Not To Scale

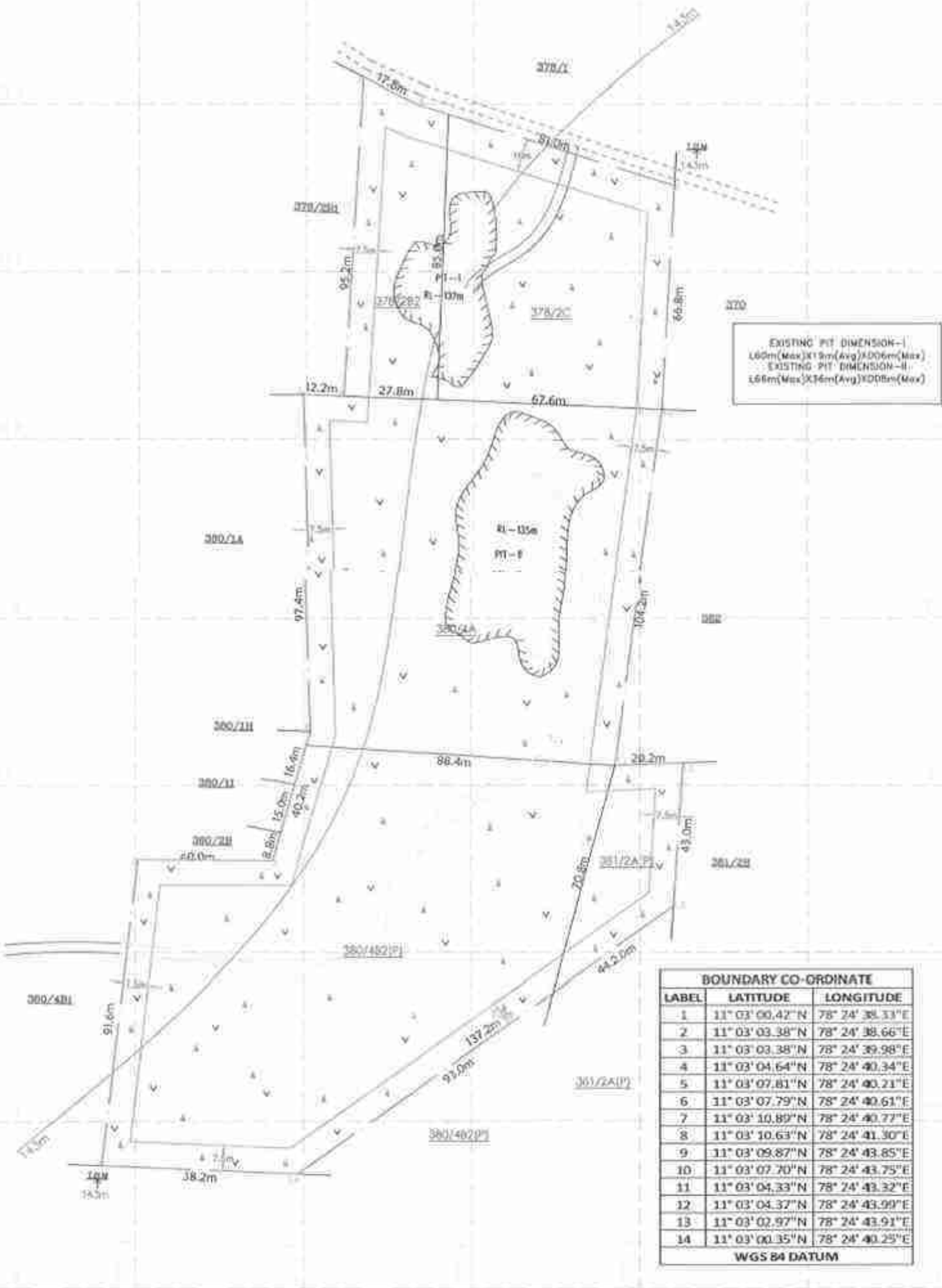
PREPARED BY:

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

S.GOPINATH M.Sc.,
QUALIFIED PERSON



MSD.



EXISTING PIT DIMENSION-I
 160m(Max)X19m(Avg)X006m(Max)
 EXISTING PIT DIMENSION-II
 168m(Max)X14m(Avg)X008m(Max)

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	11° 03' 00.42" N	78° 24' 38.33" E
2	11° 03' 03.38" N	78° 24' 38.66" E
3	11° 03' 03.38" N	78° 24' 39.98" E
4	11° 03' 04.64" N	78° 24' 40.34" E
5	11° 03' 07.81" N	78° 24' 40.21" E
6	11° 03' 07.79" N	78° 24' 40.61" E
7	11° 03' 10.89" N	78° 24' 40.77" E
8	11° 03' 10.63" N	78° 24' 41.30" E
9	11° 03' 09.87" N	78° 24' 43.85" E
10	11° 03' 07.70" N	78° 24' 43.75" E
11	11° 03' 04.33" N	78° 24' 43.32" E
12	11° 03' 04.37" N	78° 24' 43.99" E
13	11° 03' 02.97" N	78° 24' 43.91" E
14	11° 03' 00.35" N	78° 24' 40.25" E

WGS 84 DATUM

PLATE NO-II
 DATE OF SURVEY : 18.05.2023

APPLICANT:
 THIRUKA BALENDHAN,
 THIRUKA BALENDHAN,
 S/O RENGARAJAN,
 NO.45/54-E, V.D.C NAGAR MAIN ROAD,
 IALGUTHY TALUK,
 TRUCHIRAPPALLI DISTRICT.

QUARRY APPLIED LEASE AREA:
 S.F.NOS : 378/110, 378/2C, 380/4A, 380/4B2(Part)
 & 381/2A (Part).

EXTENT : 3.19.0 Hha.
 VILLAGE : SERUGUDI,
 TALUK : MUSRI,
 DISTRICT : TRUCHIRAPPALLI

INDEX

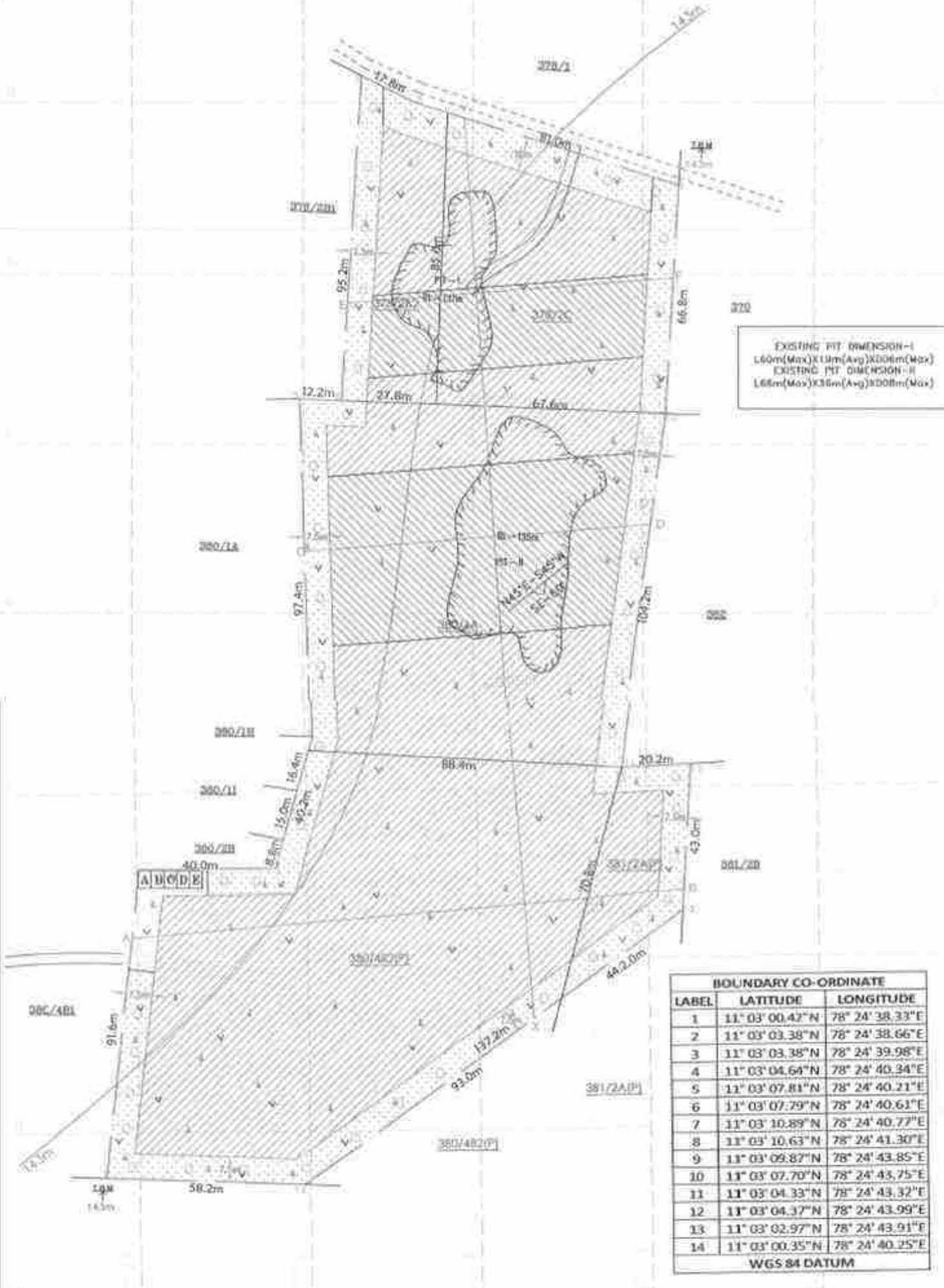
- G.I. APPLIED BOUNDARY
- 7.5m & 10m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- PANCHAYAT ROAD
- APPROACH ROAD
- QUARRY ROAD
- CONTOUR
- SCRUB
- QUARRY PIT
- TOP SOIL

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.

[Signature]
 S. GOPAL S.
 QUALIFIED PERSON

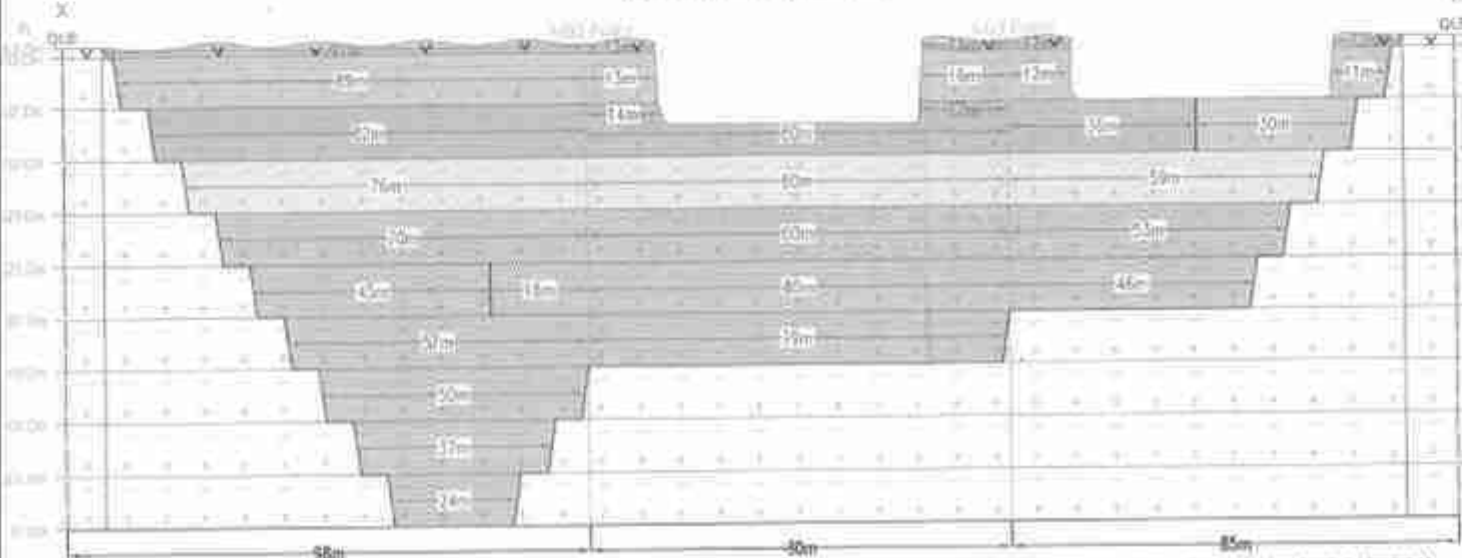
[Handwritten signature]



BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	11° 03' 00.42" N	78° 24' 38.33" E
2	11° 03' 03.38" N	78° 24' 38.66" E
3	11° 03' 03.38" N	78° 24' 39.98" E
4	11° 03' 04.64" N	78° 24' 40.34" E
5	11° 03' 07.81" N	78° 24' 40.21" E
6	11° 03' 07.79" N	78° 24' 40.61" E
7	11° 03' 10.89" N	78° 24' 40.77" E
8	11° 03' 10.63" N	78° 24' 41.30" E
9	11° 03' 09.87" N	78° 24' 43.85" E
10	11° 03' 07.70" N	78° 24' 43.75" E
11	11° 03' 04.33" N	78° 24' 43.32" E
12	11° 03' 04.37" N	78° 24' 43.99" E
13	11° 03' 02.97" N	78° 24' 43.91" E
14	11° 03' 00.35" N	78° 24' 40.25" E

WGS 84 DATUM

SECTION ALONG X-Y



- PROPOSED SITE SERVICES**
- X - OFFICE
 - V - STORE ROOM
 - G - FIRST AID ROOM
 - D - REST SHELTER
 - E - TOILET

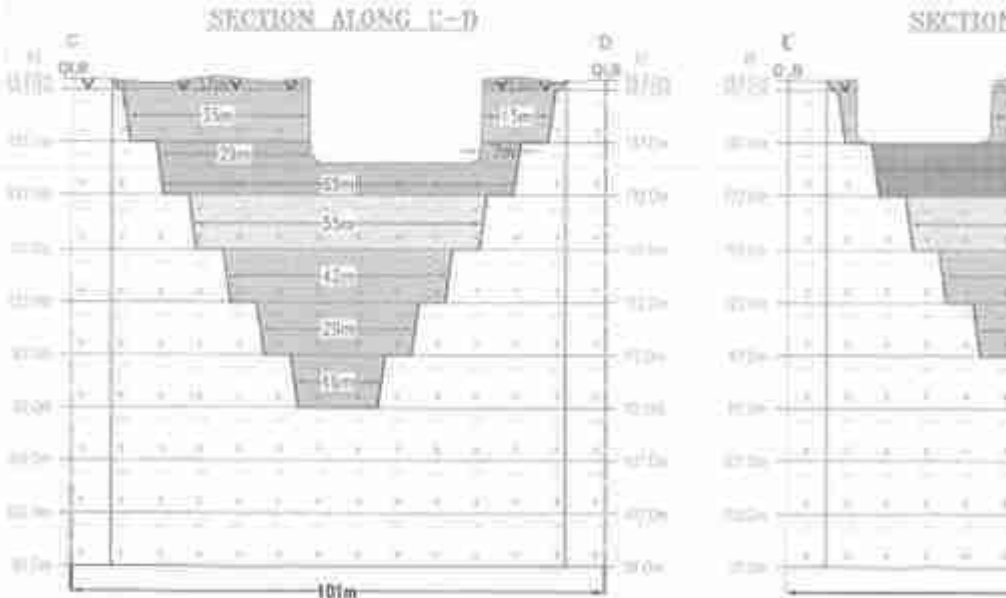
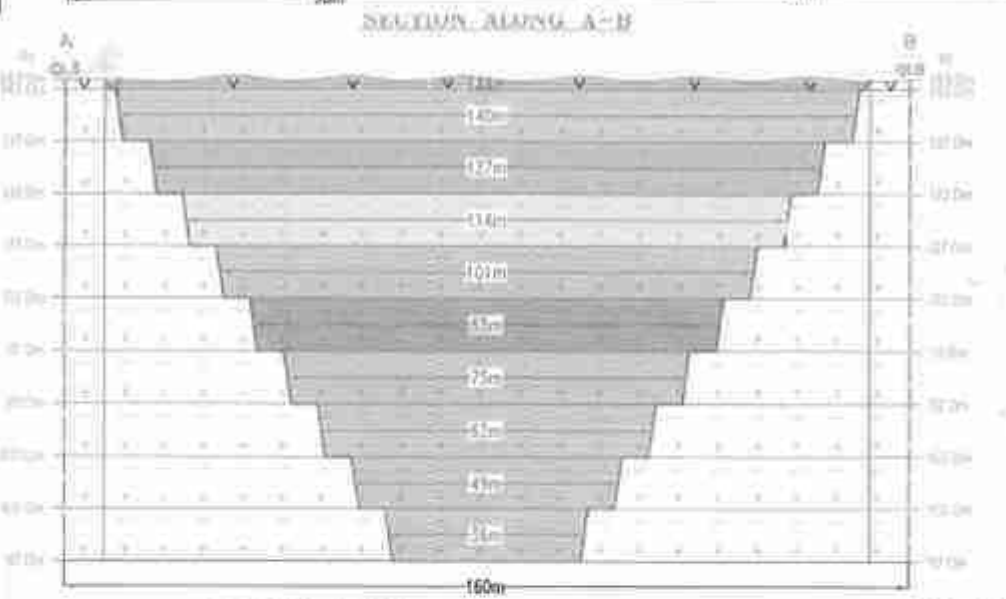
PLATE NO-III
DATE OF SURVEY : 8.05.2023

APPLICANT:
THIRUKARANDRAN,
S/O RENGARATHAN,
NO.45/54.E2, V.O.C NAGAR MAIN ROAD,
TALUK: TALUK,
DISTRICT: TALUK

QUARRY APPLIED LEASE AREA:
S.E.NOS: 378/2B2, 378/2C, 380/4A, 380/4B2(Part),
380/7A (Part)
EXTENT : 3.19.0 Ha,
VILLAGE : SERUGUDI,
TALUK : MYSRL,
DISTRICT : TRICHIRAPPALLI

DESCRIPTION	PRESENT AREA (Ha)	USE PATTERN AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	0.55.0	2.54.0
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.01.0	0.02.0
GREEN BELT	0.01.0	0.02.0
UN-UTILIZED AREA	2.82.0	Nil
GRAND TOTAL	3.19.0	3.19.0

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



INDEX

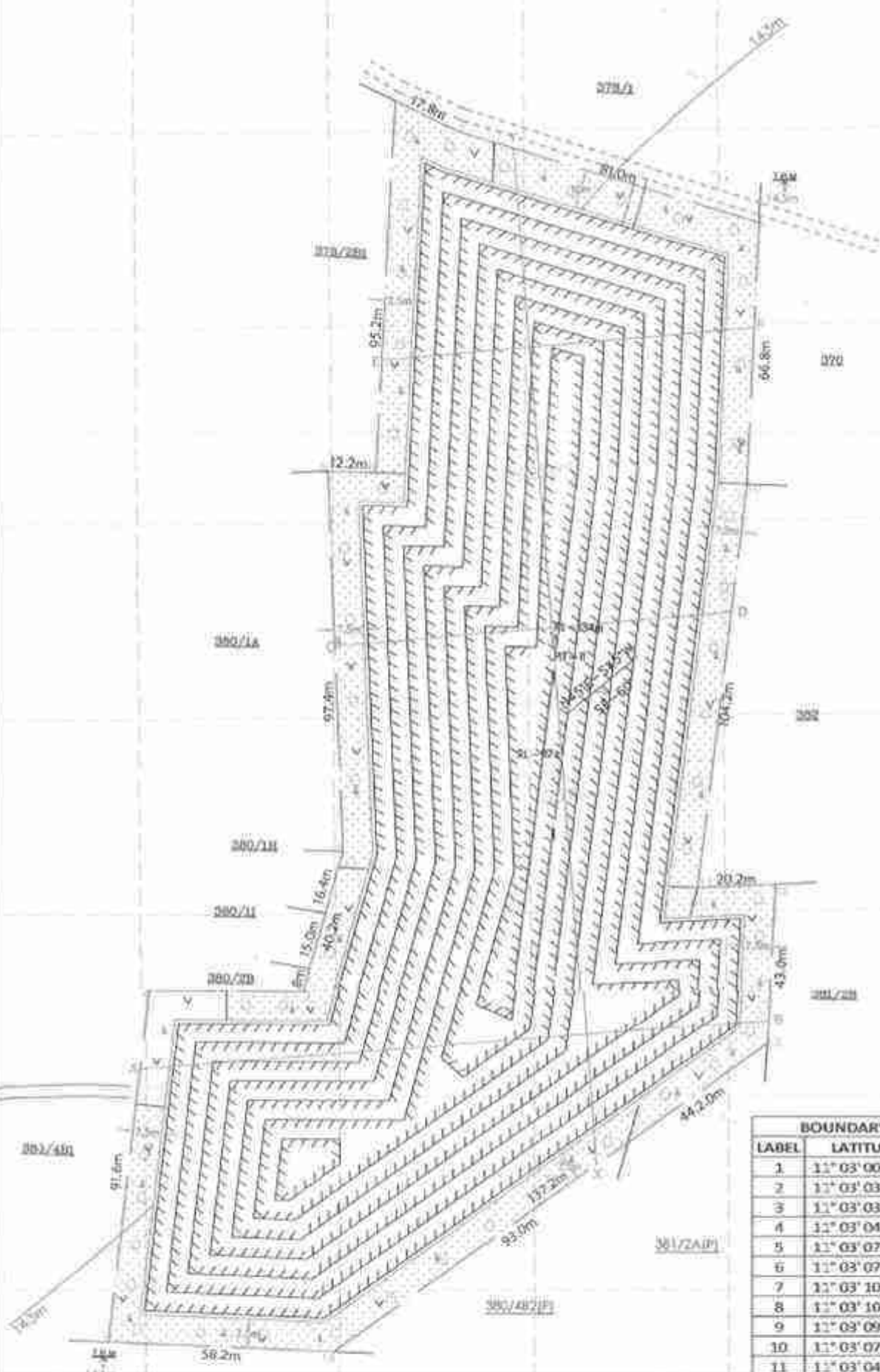
- Q.L. APPLIED BOUNDARY
- 7.5m & 10m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- PANCHAYAT ROAD
- APPROACH ROAD
- QUARRY ROAD
- CONTOUR
- SCRUB
- QUARRY PIT
- TOP SOIL
- ROUGH STONE
- STRIKEADP

TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTION
SCALE 1 : 1000
SECTION 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

[Signature]
S.GOPAL S.
QUALIFIED PERSON





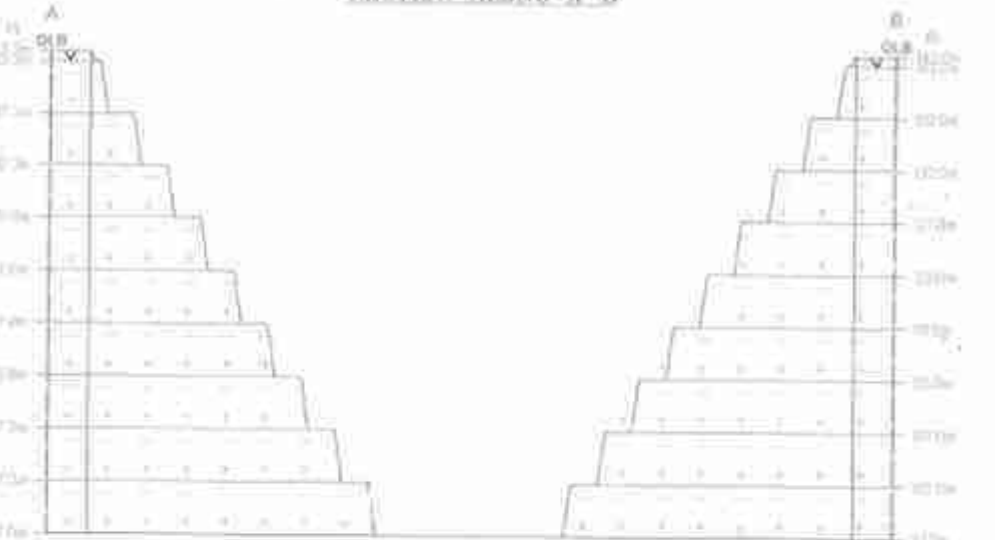
BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	11° 03' 00.42" N	78° 24' 38.33" E
2	11° 03' 03.38" N	78° 24' 38.66" E
3	11° 03' 03.38" N	78° 24' 39.98" E
4	11° 03' 04.64" N	78° 24' 40.34" E
5	11° 03' 07.81" N	78° 24' 40.21" E
6	11° 03' 07.79" N	78° 24' 40.61" E
7	11° 03' 10.89" N	78° 24' 40.77" E
8	11° 03' 10.63" N	78° 24' 41.30" E
9	11° 03' 09.87" N	78° 24' 43.85" E
10	11° 03' 07.70" N	78° 24' 43.75" E
11	11° 03' 04.33" N	78° 24' 43.32" E
12	11° 03' 04.37" N	78° 24' 43.99" E
13	11° 03' 02.97" N	78° 24' 43.91" E
14	11° 03' 00.35" N	78° 24' 40.25" E

WGS 84 DATUM

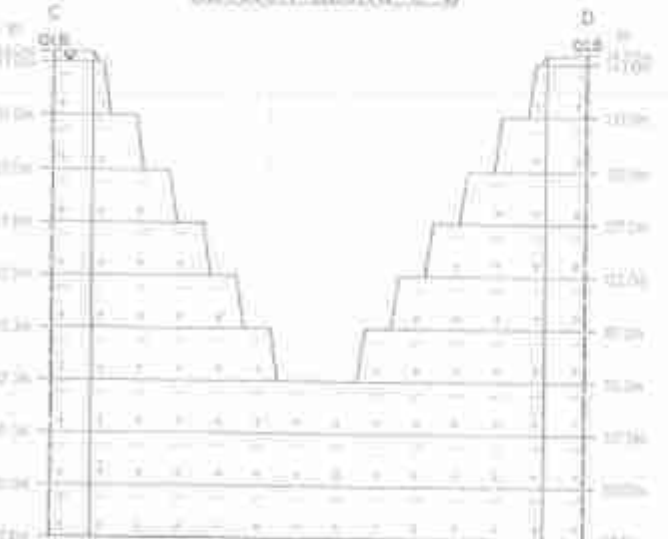
SECTION ALONG X-Y



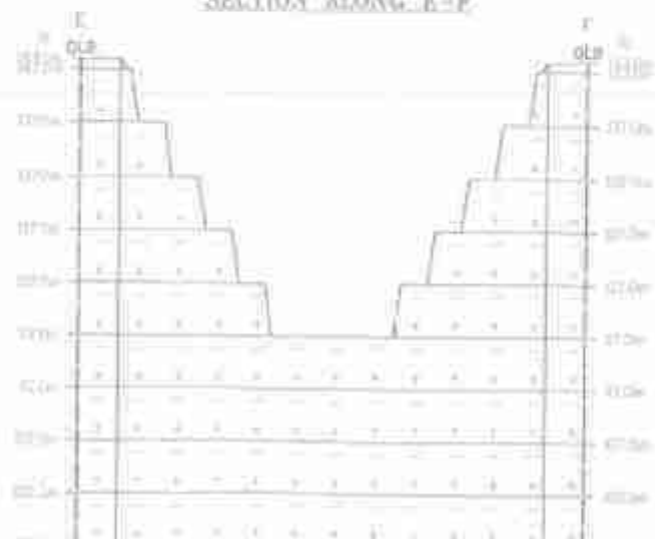
SECTION ALONG A-B



SECTION ALONG C-D



SECTION ALONG E-F



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

ULTIMATE PIT DIMENSION - I
 LEAD (Max) m: 112.8 (Avg) m: 44.8 (Max) m: 10.0

- 1st Year Proposed area to be Planted
- 2nd Year Proposed area to be Planted
- 3rd Year Proposed area to be Planted
- 4th Year Proposed area to be Planted
- 5th Year Proposed area to be Planted

PLATE NO-IV
 DATE OF SURVEY: 18.05.2023

APPLICANT:
 NO 482/54/EZ V.O.C NAGAR MAIN ROAD,
 LALGUDI TALUK,
 TRUCHIRAPPALLI DISTRICT.
QUARRY APPLIED LEASE AREA:
 S.F. NOS: 378/282, 378/283, 380/4A, 380/4B, 380/4C,
 4351/2A (Part).
 EXTENT : 3.19.0 Ha.
 VILLAGE : SERUGUDI,
 TALUK : MUSRI,
 DISTRICT : TRUCHIRAPPALLI



- INDEX**
- Q.L. APPLIED BOUNDARY
 - 7.5m & 10m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - PANCHAYAT ROAD
 - APPROACH ROAD
 - QUARRY ROAD
 - CONTOUR
 - SCRUB
 - PROPOSED QUARRY PIT
 - TOP SOIL
 - ROUGH STONE
 - STRIKEADP

CONCEPTUAL PLAN & SECTION
 SCALE 1 : 1000
 SECTION 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

[Signature]
 SURVEYOR
 QUALIFIED PERSON

ANNEXURE - 3

Existing Quarry - Lease Deed

भारतीय गैर न्यायिक INDIA NON JUDICIAL

दस हजार रुपये

₹. 10000



Rs. 10000

TEN THOUSAND RUPEES

தமிழ்நாடு தமிழ்நாடு TAMILNADU

13206

18.4.2012

ரஜித்குமார்
ஸரங்கி

A 3606
S. S. ராஜ்குமார்
ம.கா. 1
L.No: 6/2
ம.கா. 5/19

ANTICIPATED SEIGNIORAGE FEE FOR 3 YEARS : Rs.19,44,000/-
SECURITY DEPOSIT : Rs. 5,000/-
AREA ASSESSMENT FOR 3 YEARS : Rs. 1,200/-

(Proceedings of the District Collector, Tiruchirappalli in
Rc.B.902/ 2011 dated: 19.04.2012)


APPENDIX - IV

[See Rules 19]

FORM OF AGREEMENT FOR QUARRYING AND CARRYING AWAY
MINOR MINERALS FROM RYOTWARI LANDS IN WHICH THE
MINERALS BELONGS TO GOVERNMENT.

AGREEMENT made this 18th day of June 2012
between Thiru R.Rabeendran, S/o.R.S.Rengarajan, No.64, 3rd Cross


REGISTERED HOLDER
LESSER


DISTRICT COLLECTOR
LESSOR



தமிழ்நாடு திருமில்நாடு TAMILNADU



13207
18.4.2012

ரஜிஸ்ட்ரார்
தமிழ்நாடு

F. 01974
S. ரங்கராஜ்
ம.கா. 68
Date: 6/20/12
...

Street, Paramasivapuram, Lagudi Taluk, Tiruchirappalli District (hereinafter referred to as "the registered holder" which term shall include in these presents where the context so admits include also his heirs, executors, administrators, legal representatives and assigns) of the one part and the Collector of Tiruchirappalli District (hereinafter called "the Collector" which term shall where the context so admits, include also his successors in office and assigns) of the other part.

WHEREAS the registered holder holds (amongst others) the lands described in the schedule hereunder written (hereinafter referred to as the said lands).


REGISTERED HOLDER
LESSEE


DISTRICT COLLECTOR
LESSOR



தமிழ்நாடு தமிழ்நாடு TAMILNADU

S 0026
 S. ராஜ்குமார்
 மு.தா. ச.
 L.No: 6/20
 மாவட்ட கலெக்டர்



13208
 18.4.2012

ரஜ்குமார்
 ஸரஸ்வதி

AND, WHEREAS, the registered holder has made application to the Collector of the District of Tiruchirappalli (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying aralai, jelly and sholing the said lands and to deposit quarrying waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND, WHEREAS, the Governor, acting for and on behalf of the Government has granted a quarrying lease to the registered holder and allowed him to commence quarrying operations for aralai, jelly and sholing in the said lands and to deposit quarrying waste thereon by the registered holder.


 REGISTERED HOLDER
 LESSEE


 DISTRICT COLLECTOR
 LESSOR



தமிழ்நாடு தமிழ்நாடு TAMILNADU

S 00266
 J. Per
 S. ராஜ்குமார்
 மு.தா. 6
 L.No: 3/20
 18.4.2012



13209
 18.4.2012

ரஜ்குமார்
 ராஜ்குமார்

AND, WHEREAS the registered holder has deposited with the Collector, the sum of Rs. 5000/- as security against any loss or damage which may be incurred by the Government by reason of any of the said lands being rendered unfit for cultivation by any quarrying operations therein of the registered holder or by the deposit of quarrying waste thereon by the registered holder.

NOW THESE PRESENTS WITNESS and the registered holder doth hereby agree with the Collector in the manner following, that is to say :-

1. The registered holder shall be at liberty at all times during the period of the lease to carry on mining operations for aralai, jelly


 REGISTERED HOLDER
 LESSEE


 DISTRICT COLLECTOR
 LESSOR

भारतीय गैर न्यायिक INDIA NON JUDICIAL

एक हजार रुपये

रु.1000

ONE THOUSAND RUPEES

Rs.1000



தமிழ்நாடு தமிழ்நாடு TAMILNADU



132-10

18.4.2012

ரஜித் கரன்
வரன் குடி

S. 00266

S. ராஜ்கமலா
மு.கா. சி.
L.No: 5/2000
மசீ.ப. தமிழ்நாடு

and sholing in the said lands in a proper and workmen like manner and to deposit quarrying waste on the said lands and shall at all times be answerable and accountable to the Government for all acts and defaults by any of her nominees, servants or agents in carrying on such operations or in making such deposit.

2. The registered holder shall and will on the 18th day of June 2012 next and on the 17th day day of June 2015 every succeeding year during so long as he shall have carried on any such mining operations as aforesaid pay to the Collector for and on behalf of the Government in addition to the land assessment for the time being payable in respect of the said lands, seigniorage on the


REGISTERED HOLDER
LESSEE


DISTRICT COLLECTOR
LESSOR



रु. 1000/-

தமிழ்நாடு தமிழ்நாடு TAMILNADU

S. 00266
S. ராஜ்கமல
மு.கா. வி.
L.No: G/200
மேல. தமிழ்நாடு

13211
18.4.2012

ரஜிங்கரம்
வரல்கிடி



minor minerals at the rate specified in Appendix - II to the Tamil Nadu Minor Mineral Concession Rules 1959.

3. The registered holder shall and will keep correct accounts in such form as the Collector shall from time to time required and direct showing the quantities and other particulars of all minerals obtained by the registered holder from the said lands and also the number of persons employed in carrying on the said quarrying operations therein and shall from time to time when so directed by the Collector prepare and maintain complete and correct plans of all mines and working in the said lands and shall allow any officer here unto authorised by the


REGISTERED HOLDER
LESSEE


DISTRICT COLLECTOR:
LESSOR



தமிழ்நாடு தமிழ்நாடு TAMILNADU

₹. 1000/-



13218
18.4.2012

ரஜித்தரன்
லாஸ்கிரி

S. 002664
S. ராஜ்கிரி
ம.கா. சி.
L.No: 6/203
மு.சி. தமிழ்நாடு

Commissioner of Geology and Mining, Chennai from time to time and at any time to examine such accounts and any such plans and shall when so required supply and furnish all such information and returns regarding all or any of the matter aforesaid as the Government shall, from time to time, require and direct.

4. The registered holder shall and will at all times allow any officer authorised by the Commissioner of Geology and Mining, Chennai in that behalf to enter upon any part of the said lands where any quarrying operations may be carried on for the purpose of inspecting the same.


REGISTERED HOLDER
LESSER


(DISTRICT COLLECTOR)
LESSOR

5. The registered holder shall forthwith send to the District Collector a report of any accident which may occur at or in the said lands and also of the discovery of any mineral other than aralai, jelly and sholing.

6. It shall be lawful for the registered holder at any time to cease mining operations under these present provided he shall pay to Collector for and on behalf of the Government land assessment, cess and Seigniorage due to the Government and shall restore the said lands or fence or fill in abandoned pits and excavations therein if required by the Collector and upon his so doing these presents shall cease and determine.

7. In case the registered holder shall relinquish the whole or any part of the said lands or in case of the expiry of sooner determination of this agreement then and in any such case, he shall restore the lands so relinquished or so much thereof as the Collector shall required to be restored to a state fit for cultivation or shall securely and permanently fence or fill in all such abandoned pits and excavations there in as the Collector shall require to be so fenced or filled in, and in case the registered holder shall fail or neglect to restore any such lands which he shall be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit, or excavation which he shall be required to so fence or fill in them and in any such case, it shall be lawful for the Collector to so restore any such lands, or as the case may be to so fence or fill any such pits or excavation at the expense of the registered holder and to apply the said sum of Rs.5,000/- as deposited in or towards the cost of so doing and to deduct from the amount of the said deposit and retain on behalf of the Government a sum of equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If however, the amount of deposit is not sufficient to cover the cost of such restoration of fencing or filling in or to meet thirty times the assessment on the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to civil court.

8. The registered holder shall not be entitled to any remission of assessment in respect of any of the said lands which shall be rendered


REGISTERED HOLDER
LESSEE


DISTRICT COLLECTOR
LESSOR

unfit for surface cultivation by the carrying on of any quarrying operations or by the deposit of quarrying waste, unless thirty times the assessment thereon has already been deducted under the preceding clause.

9. The registered holder shall not assign, lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous intimation in writing to the Collector.

10. If the registered holder does not intend to carry on quarrying operations himself, but intends to lease out the right to do so to another person the registered holder and his lessee shall enter into an agreement with Government binding themselves jointly and severally to accept the conditions and stipulations herein contained which agreement shall be in the form set out in Appendix - V to the Tamil Nadu Minor Mineral Concession Rules 1959.


11. All land assessment, cess and Seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act 1864, as if they were arrears of land revenue.

12. In the event of any breach by the registered holder by any of the conditions of this agreement, it shall be lawful for the Government to levy enhanced Seigniorage or for the Collector to give notice in writing to the registered holder of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the pattadar in respect of any antecedent claim or breach of covenant or condition.

13. Any notice to be given to the registered holder may be addressed to his last known place of abode and where a notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.

14. Should any question or dispute arise regarding the agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the registered holder thereunder, the amount or payment of the Seigniorage fee or area assessment made payable thereby, the matter in issue shall be decided by the Commissioner of Geology and Mining. In case the registered holder, lessee is not satisfied


REGISTERED HOLDER
LESSEE

 9/11
DISTRICT COLLECTOR

with the decision of the Commissioner of Geology and Mining, the matter shall be referred to the State Government for decision.

15. The registered holder shall abide by the conditions laid down in the payment of Wages Act 1936 (Central Act IV of 1936) the mines Act 1952 (Central Act XXXV of 1952) and the Indian Explosives Act 1884 (Central Act IV of 1884).

16. The lessee should obtain the bulk permits and despatch slips from the Assistant Director, Geology and Mining, Tiruchirappalli for the quantity of rough stone, Jelly etc., transporting from the quarry site.

17. The lessee should remit the seigniorage fee for the minerals exploited and area assessment at such rates as may be specified from time to time in Appendix II to the Rules in each and every vehicle transporting the minerals such as Rough Stone, Jelly etc.,

18. The lessee should demarcate the area covered by the grant at her own cost and should quarry common use minor minerals only within the area for which permission granted.

19. The lessee shall not assign, sub-lease or part with the possession of the lands or any part thereof for the whole or any part without prior permission of the Collector in writing.

20. The lessee should make her own arrangements for road, pathways and ramp etc. to the quarry at her own cost.

21. The lessee should pay the seigniorage fee at the rates fixed by the Government from time to time for the quantity of mineral ready for transport and obtain transport permits and despatch slips for the transport of aralai, jelly and sholing from the concerned authorities. The dispatch slips should be kept at the quarry site and be issued to all the vehicles while transporting the aralai, jelly and sholing from the quarry.

22. The lessee should keep correct accounts for the quarry and submit to the Assistant Director, Geology and Mining, Tiruchirappalli a monthly return showing the number of workers employed in the quarry, quantity of mineral quarried and transported, before the 5th day of the succeeding month. The lessee shall also furnish a copy of the annual audited accounts relating to the said grant to the Assistant Director, Geology and Mining, Tiruchirappalli. The lessee shall allow at





10
11

any time the officers authorized by the Government from time to time, to examine such accounts as and when required and furnish to the Government all such information and returns.

23. The lessee should leave a safety distance of not less than 50 metres from the features like National Highways / State Highways road, low tension power lines, high tension power lines and transformers, according to the situation and importance of the features in the area. In the case of cart tracks and detail pathways in villages not less than 10 metres safety distance should be left out between the quarry and the cart track or detailed pathways.

24. The lessee should strictly adhere to the conditions and the rules stipulated by the Government for minor minerals from time to time.

25. The lessee shall erect a board at the entrance of the lease hold area showing very clearly the details of the S.Nos., village, extent of the area, period of lease, orders of the authority granting the lease.

26. If any loss incurred to the lessee during the tenure of lease period, the Government will not bear any kind of compensation, etc. to the lessee for the loss.

27. The lessee shall take proper care to the quarry workers employed by him and also report any accident that may occur in the quarry site to the Collector, Assistant Director, Geology and Mining, Tiruchirappalli and other authorities concerned including the Director General of Mines Safety, Ooragum, Kolar District, Karnataka state.

28. The lessee should not stock the explosive materials in the quarry site and explosive should be utilized in the quarry under proper licence only. Before blasting necessary precautionary measure / safety aspects should be followed as per Indian Explosive Act in force.

29. The lessee should quarry only Aralai, jelly and sholing from the area leased out to him. No export worthy blocks should be quarried from the said quarry. If the rock available in the quarry is found to be suitable for the extraction of export worthy blocks, the lease should be surrendered immediately, otherwise, the lease will be terminated without any prior notice.

30. The lessee should not quarry the dimensional blocks for cutting and polishing from the area.


REGISTERED HOLDER
LESSOR


DISTRICT COLLECTOR
LESSOR

11/15/11

31. Child labour should not be engaged in quarrying work. If child labour is found to be engaged in quarrying work, necessary action will be initiated to cancel the lease and also to file criminal case against the grantee through the appropriate authorities.

32. Besides, the above said conditions, the lessee shall abide by the conditions laid down in Tamil Nadu Minor Mineral Concession Rules, 1959 and Mines and Minerals (Development and Regulation) Act, 1957 and the orders of the Government, the Commissioner of Geology and Mining, Chennai and the District Collector, Tiruchirappalli to be issued from time to time.

33. The lease granted to the lessee to quarry Aralai, jelly and sholing in the said patta land is valid for Three (3) years from 18th day of June 2012 to 17th day of June, 2015.

SPECIAL CONDITIONS:

- 1) The lessee should leave a safety distance of 7.5 metres for the adjacent patta lands.
- 2) The lessee should leave a safety distance of 10 Metres for the Vandipathai (S.F.No.378/1) located on the Northern side of the area, Kuttai (S.F.No.380/4B2 Part) and Odai (S.F.No.380/3) located on the Western side of the area and Kallankuthu (S.F.No.382/2) located on the Eastern side of the area.
- 3) The lessee should not be allowed any hindrance to the adjacent pattadars during quarrying operation.
- 4) The lessee should not be allowed encroachment to the adjacent patta lands at any cost during the quarrying operation.

THE SCHEDULE

TALUK : MUSIRI

VILLAGE : SERUKUDI

S.F.No.	Extent (in Hects.)	Classifi- cation	Boundaries
378/2B2	0.23.5	Ryotwari Dry Patta No.303	NORTH : S.F.No.378/1 SOUTH : S.F.No.380 EAST : S.F.No.378/2C WEST : S.F.No.378/2B1
378/2C	0.52.0		NORTH : S.F.No.378/1 SOUTH : S.F.No.380 EAST : S.F.No.370 WEST : S.F.No.378/2B2

REGISTERED HOLDER

DISTRICT COLLECTOR,
LESSOR

380/4A	1.00.0		NORTH : S.F.No.378 SOUTH : S.F.No.380/4B2 EAST : S.F.No.382 WEST : S.F.No.380/1A
380/4B2	1.46.0		NORTH : S.F.No.380/3, 4A SOUTH : S.F.No.397 EAST : S.F.No.381 WEST : S.F.No.380/4B1
381/2A	0.39.5		NORTH : S.F.No.382 SOUTH : S.F.No.381/2B EAST : S.F.No.381/2B WEST : S.F.No.380
Total	3.61.0		

WITNESS whereof **Thiru R.Rabeendran**, the registered holder and **Tmt.Jayashree Muralidharan, I.A.S.**, District Collector, Tiruchirappalli acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.



**REGISTERED HOLDER
LESSEE**

Signed by the above named
Thiru R.Rabeendran,
lessee in the presence of

WITNESS

- 1) *V. Bharathi Bharan*
23/10/2013
main sponsor
Tirichy

- 2) *S. Srinivasan*
Boarding
Wingman Block RO
13/10/13



**(DISTRICT COLLECTOR)
LESSOR**

Signed by the above named
Tmt.Jayashree Muralidharan, I.A.S.,
lessor in the presence of

WITNESS

- 1) *P. Mariammal*
(P. MARIAMMAL)
ASSISTANT GEOLOGIST
GEOLOGY & MINING
TIRUCHIRAPPALLI.

- 2) *P. Srinivasan*
Special Revenue Inspector
(Mines)
Tiruchirappalli

ANNEXURE - 4

500m radius cluster letter

From

Thiru.A.Balamurugan.,M.Sc.,M.B.A.,
Assistant Director,
Dept. of Geology and Mining,
Collectorate,
Tiruchirappalli -620 021.

To

Thiru.R.Rabeendran,
S/o.Rengarajan,
No.452/54.E2, V.O.C Nagar
main Road,
Lalgudi Taluk,
Tiruchirappalli ..

Rc.No.427/2022/Mines

dated: -06-2023

Sir,

Sub: Mines and quarries - Minor minerals - Rough stone quarry - Tiruchirappalli District - Musiri Taluk - Serukudi Village - S.F.No.378/2B2, 378/2C, 380/4A, 380/4B2(P), 381/2A(P) over an extent of 3.19.0 Hects of Patta land - Rough Stone quarry permission requested by Thiru.R.Rabeendran, S/o.Rengarajan Trichy - Precise area communicated - Mining Plan approved -the details of existing/abandoned quarries situated within 500M radial distance requested by the applicant - details furnished - Reg.

- Ref:
- 1) Quarry lease application preferred by Thiru.R.Rabeendran, S/o.Rengarajan Trichy District application dated 04.04.2022
 - 2) Precise area communication letter Rc.No.427/2022/Mines dated 17.05.2023.
 - 3) Assistant Director of Geology and Mining, Tiruchirappalli letter Rc No.427/2022/Mines dated. 02.06.2023.
 - 4) Thiru.R.Rabeendran, S/o.Rengarajan Tiruchirappalli letter No.Nil, dated 02.06.2023

In the reference 1st cited Thiru.R.Rabeendran, S/o.Rengarajan has requested for the grant of quarry lease of Rough Stone quarry over an extent of 3.19.0 Hects. of patta land in S.F.Nos. 378/2B2, 378/2C, 380/4A, 380/4B2(P), 381/2A(P) of Serukudi Village, Musiri Taluk, Tiruchirappalli District for a period of 5 years under Rule 19 of Tamil Nadu Minor Mineral Concession Rules, 1959.

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

In the reference 3rd cited, the Assistant Director of Geology and Mining, Tiruchirappalli has approved the mining plan vide letter Rc. No.427/2022/Mines dated. 02.06.2023.

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

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

Sl. No	Name of the lessee/applicant	Name of Village & Survey Number	Extent in Hectare	Lease Period
(i) Abandoned quarries:-				
1	D.Dharmaingam, S/o.Devendran 19A/5, Natarajapuram Musiri Taluk, Tiruchirappalli.	S.F.No.411/1 (Part) of Serukudi Village of Musiri Taluk.	3.95.5	5 Years 02-06-2008 to 01-06-2013
(ii) Existing quarries:-				
1	D.Krishnamoorthy, S/o.Devendran 19A/9, Natarajapuram Musiri Taluk, Tiruchirappalli.	S.F.No.365/1,369/1, 370/1 of Serukudi Village of Musiri Taluk.	3.57.5	5 Years 11.05.2022 to 10.05.2027
(iii) Proposed quarries:-				
1	Thiru.R.Rabeendran, S/o.Rengarajan, No.14/1A, Aandal street,, Ayyappa Nagar, Tiruchirappalli -21	S.F.No.378/2B2, 378/2C, 380/4A, 380/4B2(P), 381/2A(P) of Serukudi village, Musiri Taluk	3.19.0	5 years from the date of execution of lease deed
(iv) Future Proposed quarries:				
1	-Nil-			

The Proposed quarry S.F.No. 378/2B2, 378/2C, 380/4A, 380/4B2, 381/2A of Serukudi village, Musiri Taluk was already leased out to Thiru.R.Rabeendran vide Tiruchirappalli, District Collector Proceedings Rc.No.902/2011/Mines Dated: 17.04.2012. The lease period was 3 years from 18.06.2012 to 17.06.2015. The Existing quarry pit measurement is tabulated below:-

	Length	Width	Depth
PIT-I	60 m	19 m	6 m BGL
PIT-II	66 m	36 m	8 m BGL


Assistant Director
Geology and Mining,
Tiruchirappalli.


5/6/23


ANNEXURE - 5

VAO Letter for features within 500 m radius

கிராம நிர்வாக அலுவலர் சான்று

திருச்சிராப்பள்ளி மாவட்டம், முசிறி வட்டம், சேருகுடி கிராமம் புல எண். 378/2B2, 378/2C, 380/4A, 380/4B2 (P), 381/2A (P) (பரப்பு 3.19.0 தரிசு) ஆனது கிராமக் கணக்கில் பட்டா எண் 303-ல் ரெங்கராஜன் மகன் ரபீந்திரன் பெயரில் பதிவாகி உள்ளது.

மேற்படி புல எண்ணில் ரெங்கராஜன் மகன் ரபீந்திரன். என்பவர் கல் குவாரிக்கு உரிமம் பெற விண்ணப்பம் செய்துள்ளார். இந்த புலத்தைச் சுற்றிலும் 300 மீட்டர் சுற்றளவில் பொதுமக்கள் வசிக்கும் குடியிருப்புகளோ, அங்கீகரிக்கப்பட்ட மனை இடங்களோ மற்றும் புராதான சின்னங்கள், பள்ளிகள், கல்லூரிகள் மயான பூமிகள், கோவில்கள், பறவைகள் மற்றும் விலங்குகள் சரணாலயங்கள் ஆகியவை இல்லை என்பதற்கு இச்சான்று வழங்கப்படுகிறது.


கிராம நிர்வாக அலுவலர்,
கிராம நிர்வாக அலுவலர்
18, சேருகுடி கிராமம்,
முசிறி TK, திருச்சி Dt.

ANNEXURE - 6

Monitoring Report for Air, Water, Noise & Soil carried out by NABL Lab



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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-315	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-315	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	10.10.2023	Test Completed on	21.10.2023
Temperature	34°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.9	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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
21/10/23



Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

Terms and conditions:

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TEST REPORT

Report No.	SARL/23-316	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		


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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-316	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	10.10.2023	Test Completed on	21.10.2023
Temperature	34°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified  21/10/23




21/10/23
Authorized Signatory

Please Contact:

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

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J. GNANAPRAKASAM
Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-317	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-317	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	11.10.2023	Test Completed on	21.10.2023
Temperature	30°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-318	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-318	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	11.10.2023	Test Completed on	21.10.2023
Temperature	30°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 21/10/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-319	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-319	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	12.10.2023	Test Completed on	21.10.2023
Temperature	32°C	Relative Humidity	58%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

Verified  21/10/23



For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/23-320	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-320	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	12.10.2023	Test Completed on	21.10.2023
Temperature	32°C	Relative Humidity	58%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.7	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified



Authorized Signatory

Please Contact:

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

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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-321	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-321	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	13.10.2023	Test Completed on	21.10.2023
Temperature	32°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.5	100
2	Particulate Matter less than 2.5 micron 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	11.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
21/10/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-322	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-322	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	13.10.2023	Test Completed on	21.10.2023
Temperature	32°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.9	100
2	Particulate Matter less than 2.5 micron 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	7.9	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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21/10/23



21/10/23

Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-323	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		


Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-323	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Temperature	33°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.5	100
2	Particulate Matter less than 2.5 micron 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	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.2	80
5	Carbon Monoxide (CO)	SARL/10P/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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END OF THE REPORT J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-324	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-324	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Temperature	33°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		


S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-325	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		


Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-325	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	15.10.2023	Test Completed on	21.10.2023
Temperature	33°C	Relative Humidity	48%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.7	100
2	Particulate Matter less than 2.5 micron 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	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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21/10/23




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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-326	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

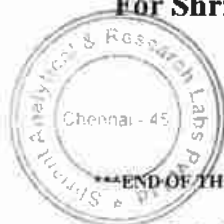
Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-326	Sample Received on	16.10.2023
Sample Collected by	LABORATORY	Test Commenced on	16.10.2023
Sample Collected Date	15.10.2023	Test Completed on	21.10.2023
Temperature	33°C	Relative Humidity	48%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.9	100
2	Particulate Matter less than 2.5 micron 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	7.3	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)	02

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


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TEST REPORT

Report No.	SARL/23-337	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-337	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	17.10.2023	Test Completed on	28.10.2023
Temperature	33°C	Relative Humidity	50%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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28/10/23



T. J.
28/10/23
Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-338	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-338	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	17.10.2023	Test Completed on	28.10.2023
Temperature	33°C	Relative Humidity	50%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.0	100
2	Particulate Matter less than 2.5 micron 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	6.3	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
28/10/23



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28/10/23

J. GNANAPRAKASAM
Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-339	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		


Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-339	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	18.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	49%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified  28/10/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-340	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-340	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	18.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	49%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.6	100
2	Particulate Matter less than 2.5 micron 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	7.1	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)	02

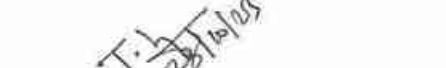
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit.

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 28/10/23



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-341	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-341	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	19.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 28/10/23




Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-342	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-342	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	19.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	40.6	100
2	Particulate Matter less than 2.5 micron 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	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 28/10/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-343	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-343	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	20.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.9	100
2	Particulate Matter less than 2.5 micron 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	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
08/10/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-344	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-344	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	20.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.4	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 28/10/23



J. G. GNANAPRAKASAM
28/10/23
Authorized Signatory

END OF THE REPORT
J. G. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-345	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-345	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	21.10.2023	Test Completed on	28.10.2023
Temperature	33°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.3	100
2	Particulate Matter less than 2.5 micron 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	6.7	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 28/10/23



Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-346	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-346	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	21.10.2023	Test Completed on	28.10.2023
Temperature	33°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

Verified 28/10/23



For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-347	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		


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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-347	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	22.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

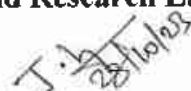
S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.2	80
4	Nitrogen 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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 28/10/23




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-348	Report Date.	28.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-348	Sample Received on	23.10.2023
Sample Collected by	LABORATORY	Test Commenced on	23.10.2023
Sample Collected Date	22.10.2023	Test Completed on	28.10.2023
Temperature	32°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-349	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-349	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	24.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.1	100
2	Particulate Matter less than 2.5 micron 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	6.9	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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04/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-350	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-350	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	24.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	43%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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Technical Manager

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TEST REPORT

Report No.	SARL/23-351	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		


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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-351	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	25.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.7	100
2	Particulate Matter less than 2.5 micron 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	7.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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TEST REPORT

Report No.	SARL/23-352	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-352	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	25.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-353	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-353	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	26.10.2023	Test Completed on	04.11.2023
Temperature	32°C	Relative Humidity	49%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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04/11/23



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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-354	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-354	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	26.10.2023	Test Completed on	04.11.2023
Temperature	32°C	Relative Humidity	49%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.3	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 04/11/23



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TEST REPORT

Report No.	SARL/23-355	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-355	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	27.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.9	100
2	Particulate Matter less than 2.5 micron 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	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


04/11/23
Verified




04/11/23
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-356	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-356	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	27.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	44%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.4	100
2	Particulate Matter less than 2.5 micron 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	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified *[Signature]* 04/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-357	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-357	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	28.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		


S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.1	100
2	Particulate Matter less than 2.5 micron 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	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 
04/11/23




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-358	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-358	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	28.10.2023	Test Completed on	04.11.2023
Temperature	33°C	Relative Humidity	46%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-359	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-359	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	29.10.2023	Test Completed on	04.11.2023
Temperature	31°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.9	100
2	Particulate Matter less than 2.5 micron 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	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified  04/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-360	Report Date.	04.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-360	Sample Received on	30.10.2023
Sample Collected by	LABORATORY	Test Commenced on	30.10.2023
Sample Collected Date	29.10.2023	Test Completed on	04.11.2023
Temperature	31°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.4	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified *[Signature]* 04/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-361	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-361	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	31.10.2023	Test Completed on	11.11.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.1	100
2	Particulate Matter less than 2.5 micron 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	5.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 



Authorized Signatory 

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-362	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-362	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	31.10.2023	Test Completed on	11.11.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.6	100
2	Particulate Matter less than 2.5 micron 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	5.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 11/11/23



Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-363	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-363	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	01.11.2023	Test Completed on	11.11.2023
Temperature	31°C	Relative Humidity	55%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.3	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 11/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-364	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

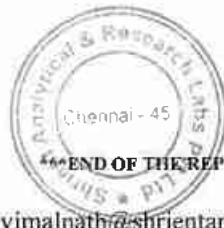
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-364	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	01.11.2023	Test Completed on	11.11.2023
Temperature	31°C	Relative Humidity	55%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-365	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-365	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	02.11.2023	Test Completed on	11.11.2023
Temperature	30°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.1	100
2	Particulate Matter less than 2.5 micron 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	7.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-366	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-366	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	02.11.2023	Test Completed on	11.11.2023
Temperature	30°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.3	100
2	Particulate Matter less than 2.5 micron 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	4.3	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)	02

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

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-367	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-367	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	03.11.2023	Test Completed on	11.11.2023
Temperature	31°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-368	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

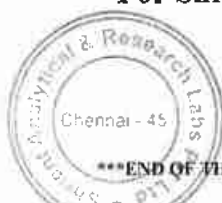
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-368	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	03.11.2023	Test Completed on	11.11.2023
Temperature	31°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.9	100
2	Particulate Matter less than 2.5 micron 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	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-369	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-369	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	04.11.2023	Test Completed on	11.11.2023
Temperature	28°C	Relative Humidity	75%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 11/11/23

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END OF THE REPORT

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TEST REPORT

Report No.	SARL/23-370	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-370	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	04.11.2023	Test Completed on	11.11.2023
Temperature	28°C	Relative Humidity	75%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 
11/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-371	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-371	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	05.11.2023	Test Completed on	11.11.2023
Temperature	26°C	Relative Humidity	82%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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Please Contact:

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-372	Report Date.	11.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-372	Sample Received on	06.11.2023
Sample Collected by	LABORATORY	Test Commenced on	06.11.2023
Sample Collected Date	05.11.2023	Test Completed on	11.11.2023
Temperature	26°C	Relative Humidity	82%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.2	100
2	Particulate Matter less than 2.5 micron 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	7.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-373	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-373	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	07.11.2023	Test Completed on	18.11.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.2	100
2	Particulate Matter less than 2.5 micron 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	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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18/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-374	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-374	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	07.11.2023	Test Completed on	18.11.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.6	100
2	Particulate Matter less than 2.5 micron 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	8.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-375	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-375	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	08.11.2023	Test Completed on	18.11.2023
Temperature	28°C	Relative Humidity	77%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.1	100
2	Particulate Matter less than 2.5 micron 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	7.1	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-376	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-376	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	08.11.2023	Test Completed on	18.11.2023
Temperature	28°C	Relative Humidity	77%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	59.4	100
2	Particulate Matter less than 2.5 micron 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	7.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-377	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-377	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	09.11.2023	Test Completed on	18.11.2023
Temperature	30°C	Relative Humidity	63%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.1	80
5	Carbon Monoxide (CO)	SARL/10P/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

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TEST REPORT

Report No.	SARL/23-378	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-378	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	09.11.2023	Test Completed on	18.11.2023
Temperature	30°C	Relative Humidity	63%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	39.2	100
2	Particulate Matter less than 2.5 micron 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	3.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	7.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-379	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-379	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	10.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	70%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon Monoxide (CO)	SARL/10P/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 18/11/23




Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:
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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-380	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-380	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	10.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	70%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



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TEST REPORT

Report No.	SARL/23-381	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-381	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	11.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	65%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.3	100
2	Particulate Matter less than 2.5 micron 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	5.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-382	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

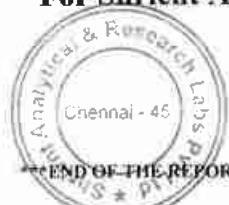
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-382	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	11.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	65%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.4	100
2	Particulate Matter less than 2.5 micron 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	6.9	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-383	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-383	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	12.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.6	100
2	Particulate Matter less than 2.5 micron 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	7.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-384	Report Date.	18.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-384	Sample Received on	13.11.2023
Sample Collected by	LABORATORY	Test Commenced on	13.11.2023
Sample Collected Date	12.11.2023	Test Completed on	18.11.2023
Temperature	29°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.0	100
2	Particulate Matter less than 2.5 micron 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	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-385	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-385	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	14.11.2023	Test Completed on	26.11.2023
Temperature	25°C	Relative Humidity	77%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



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Technical Manager

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TEST REPORT

Report No.	SARL/23-386	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

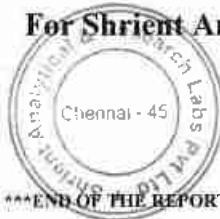
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-386	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	14.11.2023	Test Completed on	26.11.2023
Temperature	25°C	Relative Humidity	77%
Sample Condition	Fit for Analysis		


S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.6	100
2	Particulate Matter less than 2.5 micron 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	8.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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


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TEST REPORT

Report No.	SARL/23-387	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - I: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-387	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	15.11.2023	Test Completed on	26.11.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.7	100
2	Particulate Matter less than 2.5 micron 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	5.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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CIN : U74999TN2017PTC116807 / GST No. 33AA YCS7325R1ZA / Pan No: AAYCS7325R



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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-388	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-388	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	15.11.2023	Test Completed on	26.11.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.4	100
2	Particulate Matter less than 2.5 micron 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	7.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-389	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-389	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	16.11.2023	Test Completed on	26.11.2023
Temperature	31°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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

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TEST REPORT

Report No.	SARL/23-390	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-390	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	16.11.2023	Test Completed on	26.11.2023
Temperature	31°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.6	100
2	Particulate Matter less than 2.5 micron 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	8.1	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-391	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-391	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	17.11.2023	Test Completed on	26.11.2023
Temperature	32°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.7	100
2	Particulate Matter less than 2.5 micron 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	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

[Signature]
Verified 26/11/23



[Signature]
Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-392	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		


Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-392	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	17.11.2023	Test Completed on	26.11.2023
Temperature	32°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 
26/11/23



Authorized Signatory 

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-393	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-393	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	18.11.2023	Test Completed on	26.11.2023
Temperature	31°C	Relative Humidity	55%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	69.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	32.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-394	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-394	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	18.11.2023	Test Completed on	26.11.2023
Temperature	31°C	Relative Humidity	55%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT

Authorized Signatory

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

TEST REPORT

Report No.	SARL/23-395	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-395	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	19.11.2023	Test Completed on	26.11.2023
Temperature	28°C	Relative Humidity	76%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	65.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 26/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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

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TEST REPORT

Report No.	SARL/23-396	Report Date.	26.11.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-396	Sample Received on	20.11.2023
Sample Collected by	LABORATORY	Test Commenced on	20.11.2023
Sample Collected Date	19.11.2023	Test Completed on	26.11.2023
Temperature	28°C	Relative Humidity	76%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.8	100
2	Particulate Matter less than 2.5 micron 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	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified  26/11/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-397	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-397	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	21.11.2023	Test Completed on	02.12.2023
Temperature	32°C	Relative Humidity	53%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	73.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	34.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	15.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 
02/12/23




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-398	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-398	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	21.11.2023	Test Completed on	02.12.2023
Temperature	32°C	Relative Humidity	53%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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02/12/23



Authorized Signatory
27/12/23

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-399	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part -- 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-399	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	22.11.2023	Test Completed on	02.12.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	66.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-400	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-400	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	22.11.2023	Test Completed on	02.12.2023
Temperature	30°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.8	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 02/12/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-401	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-401	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	23.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.8	100
2	Particulate Matter less than 2.5 micron 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	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/23-402	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-402	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	23.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	68%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.9	100
2	Particulate Matter less than 2.5 micron 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	7.3	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 02/12/23



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J. GNANAPRAKASAM
Technical Manager

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd.

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

TEST REPORT

Report No.	SARL/23-403	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-403	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	24.11.2023	Test Completed on	02.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


02/12/23
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Please Contact:

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-404	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-404	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	24.11.2023	Test Completed on	02.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.1	100
2	Particulate Matter less than 2.5 micron 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	5.1	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-405	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-405	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	25.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	41.9	100
2	Particulate Matter less than 2.5 micron 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	4.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT
J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-406	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-406	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	25.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.4	100
2	Particulate Matter less than 2.5 micron 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	5.9	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)	02

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

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TEST REPORT

Report No.	SARL/23-407	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-407	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	26.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.9	100
2	Particulate Matter less than 2.5 micron 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	5.7	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-408	Report Date.	02.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-408	Sample Received on	27.11.2023
Sample Collected by	LABORATORY	Test Commenced on	27.11.2023
Sample Collected Date	26.11.2023	Test Completed on	02.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.6	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.0	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-409	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003). CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-409	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	28.11.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

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Technical Manager

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TEST REPORT

Report No.	SARL/23-410	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-410	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	28.11.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	66%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.2	100
2	Particulate Matter less than 2.5 micron 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	7.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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09/12/23



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J. GNANAPRAKASAM
Technical Manager

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



Shrient Analytical and Research Labs Pvt. Ltd.

416/15, Dharga Road, Perungalathur, West Tambaram, Chennai- 600045.
Phone No: 9841074398 / 9898141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-411	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-411	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	29.11.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	69%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.3	100
2	Particulate Matter less than 2.5 micron 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	6.1	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)	02

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

Verified  09/12/23



For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-412	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-412	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	29.11.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	69%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.0	100
2	Particulate Matter less than 2.5 micron 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	7.0	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)	02

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


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For Shrient Analytical and Research Labs Pvt. Ltd


Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-413	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-413	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	30.11.2023	Test Completed on	09.12.2023
Temperature	24°C	Relative Humidity	90%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.7	100
2	Particulate Matter less than 2.5 micron 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	8.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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09/12/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-414	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appanallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-414	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	30.11.2023	Test Completed on	09.12.2023
Temperature	24°C	Relative Humidity	90%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	39.9	100
2	Particulate Matter less than 2.5 micron 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	3.9	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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09/12/23



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Technical Manager

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TEST REPORT

Report No.	SARL/23-415	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-415	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	01.12.2023	Test Completed on	09.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.5	100
2	Particulate Matter less than 2.5 micron 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	7.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research/Labs Pvt. Ltd

Verified 09/12/23



Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No. SARL/23-416

Report Date. 09.12.2023

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Appanallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-416	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	01.12.2023	Test Completed on	09.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	46.2	100
2	Particulate Matter less than 2.5 micron 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	5.7	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)	02

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


09/12/23
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For Shrient Analytical and Research Labs Pvt. Ltd


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-417	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-417	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	02.12.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
29/12/23



Authorized Signatory
29/12/23

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Technical Manager

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TEST REPORT

Report No.	SARL/23-418	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-418	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	02.12.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	66.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	14.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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09/12/23



Authorized Signatory

J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-419	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-419	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	03.12.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.8	100
2	Particulate Matter less than 2.5 micron 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	7.3	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)	02

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

Vimal Nath
09/12/23
Verified



For Shrient Analytical and Research Labs Pvt. Ltd

J. Gnanaprakasam
Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-420	Report Date.	09.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-420	Sample Received on	04.12.2023
Sample Collected by	LABORATORY	Test Commenced on	04.12.2023
Sample Collected Date	03.12.2023	Test Completed on	09.12.2023
Temperature	29°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	61.5	100
2	Particulate Matter less than 2.5 micron 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	8.2	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)	02

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

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Technical Manager

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TEST REPORT

Report No.	SARL/23-421	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		


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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-421	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	05.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	58%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	71.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.4	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	15.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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


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16/12/23

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-422	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-422	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	05.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	58%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.9	100
2	Particulate Matter less than 2.5 micron 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	7.4	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)	02

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

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TEST REPORT

Report No.	SARL/23-423	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-423	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	06.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	63.9	100
2	Particulate Matter less than 2.5 micron 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	8.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date -- 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 16/12/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-424	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		


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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-424	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	06.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.1	100
2	Particulate Matter less than 2.5 micron 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	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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


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For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory
G. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-425	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-425	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	07.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	57%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.1	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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


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TEST REPORT

Report No.	SARL/23-426	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-426	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	07.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	57%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.2	100
2	Particulate Matter less than 2.5 micron 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	7.7	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)	02

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

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16/12/23

For Shrient Analytical and Research Labs Pvt. Ltd
Chennai - 45
END OF THE REPORT

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TEST REPORT

Report No.	SARL/23-427	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-427	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	08.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 16/12/23



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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-428	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-428	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	08.12.2023	Test Completed on	16.12.2023
Temperature	31°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	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)	02

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

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Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No. SARL/23-429

Report Date. 16.12.2023

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-429	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	09.12.2023	Test Completed on	16.12.2023
Temperature	30°C	Relative Humidity	65%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	43.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	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)	02

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


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For Shrient Analytical and Research Labs Pvt. Ltd


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Technical Manager

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TEST REPORT

Report No.	SARL/23-430	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-430	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	09.12.2023	Test Completed on	16.12.2023
Temperature	30°C	Relative Humidity	65%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.0	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.8	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.0	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)	02

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

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TEST REPORT

Report No.	SARL/23-431	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-431	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	10.12.2023	Test Completed on	16.12.2023
Temperature	29°C	Relative Humidity	70%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.9	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-432	Report Date.	16.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-432	Sample Received on	11.12.2023
Sample Collected by	LABORATORY	Test Commenced on	11.12.2023
Sample Collected Date	10.12.2023	Test Completed on	16.12.2023
Temperature	29°C	Relative Humidity	70%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.6	100
2	Particulate Matter less than 2.5 micron 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	6.6	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)	02

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

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-433	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-433	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	12.12.2023	Test Completed on	23.12.2023
Temperature	30°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.3	100
2	Particulate Matter less than 2.5 micron 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	5.1	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)	02

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

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TEST REPORT

Report No.	SARL/23-434	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-434	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	12.12.2023	Test Completed on	23.12.2023
Temperature	30°C	Relative Humidity	59%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.6	100
2	Particulate Matter less than 2.5 micron 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	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

23/12/23
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23/12/23
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TEST REPORT

Report No.	SARL/23-435	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-435	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	13.12.2023	Test Completed on	23.12.2023
Temperature	27°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 23/12/23



Authorized Signatory

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Technical Manager

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202



Shrient Analytical and Research Labs Pvt. Ltd.

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

TEST REPORT

Report No.	SARL/23-436	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-436	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	13.12.2023	Test Completed on	23.12.2023
Temperature	27°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.7	100
2	Particulate Matter less than 2.5 micron 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	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

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23/12/23



For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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TEST REPORT

Report No.	SARL/23-437	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-437	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	14.12.2023	Test Completed on	23.12.2023
Temperature	28°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	56.7	100
2	Particulate Matter less than 2.5 micron 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	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

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For Shrient Analytical and Research Labs Pvt. Ltd

23/12/23
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END OF THE REPORT
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-438	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-438	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	14.12.2023	Test Completed on	23.12.2023
Temperature	28°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.0	100
2	Particulate Matter less than 2.5 micron 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	4.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

23/12/23
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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-439	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-439	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	15.12.2023	Test Completed on	23.12.2023
Temperature	26°C	Relative Humidity	73%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	49.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-440	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-440	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	15.12.2023	Test Completed on	23.12.2023
Temperature	26°C	Relative Humidity	73%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	47.6	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-441	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-441	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	16.12.2023	Test Completed on	23.12.2023
Temperature	29°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.6	100
2	Particulate Matter less than 2.5 micron 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	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory


G. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-442	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003). CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-442	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	16.12.2023	Test Completed on	23.12.2023
Temperature	29°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	64.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.9	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.4	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 23/12/23




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GNANAPRAKASAM
Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-443	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-443	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	17.12.2023	Test Completed on	23.12.2023
Temperature	23°C	Relative Humidity	90%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	61.2	100
2	Particulate Matter less than 2.5 micron 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	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

Verified 23/12/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-444	Report Date.	23.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-444	Sample Received on	18.12.2023
Sample Collected by	LABORATORY	Test Commenced on	18.12.2023
Sample Collected Date	17.12.2023	Test Completed on	23.12.2023
Temperature	23°C	Relative Humidity	90%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	60.8	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 23/12/23



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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

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Page 1 of 1

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-445	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-445	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	19.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	67.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.7	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.6	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 30/12/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-446	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-446	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	19.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	57.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/23-447	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-447	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	20.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	62.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-448	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-448	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	20.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	64%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.7	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/23-449	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-449	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	21.12.2023	Test Completed on	30.12.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	48.3	100
2	Particulate Matter less than 2.5 micron 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	5.8	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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30/12/23



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Technical Manager

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TEST REPORT

Report No.	SARL/23-450	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-450	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	21.12.2023	Test Completed on	30.12.2023
Temperature	29°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.7	100
2	Particulate Matter less than 2.5 micron 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	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 30/12/23



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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-451	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-451	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	22.12.2023	Test Completed on	30.12.2023
Temperature	29°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.5	100
2	Particulate Matter less than 2.5 micron 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	6.6	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)	02

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

Verified  30/12/23



For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-452	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-452	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	22.12.2023	Test Completed on	30.12.2023
Temperature	29°C	Relative Humidity	56%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	51.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

Verified  30/12/23



For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-453	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-453	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	23.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	42.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	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)	02

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


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Technical Manager



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TEST REPORT

Report No.	SARL/23-454	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

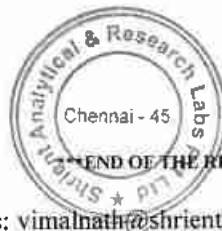
Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-454	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	23.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	52%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.4	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

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TEST REPORT

Report No.	SARL/23-455	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-455	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	24.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.1	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

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TEST REPORT

Report No.	SARL/23-456	Report Date.	30.12.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-456	Sample Received on	25.12.2023
Sample Collected by	LABORATORY	Test Commenced on	25.12.2023
Sample Collected Date	24.12.2023	Test Completed on	30.12.2023
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.2	100
2	Particulate Matter less than 2.5 micron 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	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

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TEST REPORT

Report No.	SARL/23-457	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-457	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	26.12.2023	Test Completed on	06.01.2024
Temperature	27°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	55.1	100
2	Particulate Matter less than 2.5 micron 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	7.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.0	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

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TEST REPORT

Report No.	SARL/23-458	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-458	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	26.12.2023	Test Completed on	06.01.2024
Temperature	27°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.0	100
2	Particulate Matter less than 2.5 micron 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	6.5	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-459	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A5-Poolancherry Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-459	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	27.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.9	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.7	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified *[Signature]* 06/01/24



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TEST REPORT

Report No.	SARL/23-460	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A6-Neeliampatty Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-460	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	27.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	61%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	45.9	100
2	Particulate Matter less than 2.5 micron 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	5.7	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-461	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C, 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-461	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	28.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	58.5	100
2	Particulate Matter less than 2.5 micron 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	7.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.9	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 06/01/24



Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



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TEST REPORT

Report No.	SARL/23-462	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A4-Appananallur Village		
Positioned height of Sampler	1.5 M above Ground Level		

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-462	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	28.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	67%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	52.5	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	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)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-463	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

Sample Location	A3-Serugudi Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-463	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	29.12.2023	Test Completed on	06.01.2024
Temperature	29°C	Relative Humidity	63%
Sample Condition	Fit for Analysis		

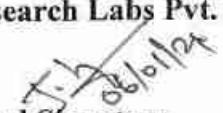
S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	53.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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TEST REPORT

Report No. SARL/23-464

Report Date. 06.01.2024

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines


Sample Location	A4-Appananallur Village
Positioned height of Sampler	1.5 M above Ground Level


Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-464	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	29.12.2023	Test Completed on	06.01.2024
Temperature	29°C	Relative Humidity	63%
Sample Condition	Fit for Analysis		


S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	44.7	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	8.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd


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J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:
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TEST REPORT

Report No.	SARL/23-465	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-465	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	30.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	70.2	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.0	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	14.2	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-466	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS - 5182 (Part - 14: 2000 & Part - V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-466	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	30.12.2023	Test Completed on	06.01.2024
Temperature	28°C	Relative Humidity	60%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	50.3	100
2	Particulate Matter less than 2.5 micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur Dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	9.3	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date - 01.03.2023)	mg/m ³	BDL (D.L - 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified *[Signature]*
06/01/24



[Signature]
06/01/24
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:
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CIN : U74999TN2017PTC116807 / GST No. 33AA YCS7325R1ZA / Pan No: AAYCS7325R

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TEST REPORT

Report No.	SARL/23-467	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-467	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	31.12.2023	Test Completed on	06.01.2024
Temperature	29°C	Relative Humidity	53%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	64.8	100
2	Particulate Matter less than 2.5 micron 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	8.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.8	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/23-468	Report Date.	06.01.2024
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	AMBIENT AIR QUALITY		
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines		

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

Customer Reference	As per work order	Sampling Procedure	24 hrs
Sample Reference No	SARL/A/CHE-468	Sample Received on	01.01.2024
Sample Collected by	LABORATORY	Test Commenced on	01.01.2024
Sample Collected Date	31.12.2023	Test Completed on	06.01.2024
Temperature	29°C	Relative Humidity	53%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10 micron size (PM ₁₀)	IS:5182: Part 23:2006	µg/m ³	54.5	100
2	Particulate Matter less than 2.5 micron 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	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.5	80
5	Carbon Monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL (D.L – 1.1)	02

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

For Shrient Analytical and Research Labs Pvt. Ltd

Verified 06/01/24



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Technical Manager

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TEST REPORT

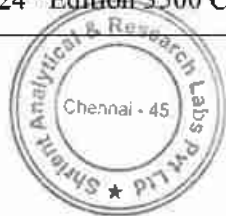
Report No.	SARL/23-327	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	WATER		
Sample Mark	GW1 - Mine Lease Area		

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-327	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	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	-	7.33	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	606.9	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	374	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	145	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	32.1	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	15.5	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	80.4	-

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TEST REPORT

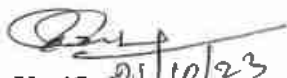
Report No. SARL/23-327

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	64.7	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	143	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	110	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ - E: 2023	mg/L	78.8	400
15	Iron (as Fe)	APHA 24 th 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	3.04	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified  21/10/23



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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-328	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	GW2 - Soorampatti Village

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-328	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A. Physical parameters					
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.42	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	615.8	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	390	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	147	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	31.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	16.5	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	78.4	-

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TEST REPORT

Report No. SARL/23-328

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	68.6	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	147	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	114	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ - E: 2023	mg/L	82.1	400
15	Iron (as Fe)	APHA 24 th 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	3.12	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-329	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	GW3 - Serugudi Village

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-329	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	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	-	7.58	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	1401	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	850	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	380	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	97.2	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	32.9	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	243	-

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TEST REPORT

Report No. SARL/23-329

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	137	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	212	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	237	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ - E: 2023	mg/L	213	400
15	Iron (as Fe)	APHA 24 th 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	4.05	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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END OF THE REPORT

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Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-330	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	GW4 - Appananallur Village

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-330	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	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	-	7.64	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	2169	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	1360	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	519	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	125	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	49.4	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	314	-

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TEST REPORT

Report No. SARL/23-330

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	206	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	412	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	503	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L – 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	296	400
15	Iron (as Fe)	APHA 24 th Edition 3500 Fe B: 2023	mg/L	0.12	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.58	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	BDL (D.L – 0.1)	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L – 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


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J. GNANAPRAKASAM
Technical Manager

Please Contact:

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TEST REPORT

Report No.	SARL/23-331	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	GW5 - Poolancherry Village

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-331	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	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	-	7.89	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	541.2	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	332	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	149	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	40.0	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	12	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	100	-

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TEST REPORT

Report No. SARL/23-331

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	49.0	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	143	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	61.1	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ - E: 2023	mg/L	78.2	400
15	Iron (as Fe)	APHA 24 th 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	2.14	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	BDL (D.L - 0.1)	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


21/10/23
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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-332	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	GW6 - Neeliampatty Village

Customer Reference	As per work order	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No.	SARL/W/CHE-332	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

Sl. No.	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	-	7.95	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µmhos/cm)	1148	-
B. Chemical parameters					
5	Total Dissolved Solids	APHA 24 th Edition 2540-C: 2023	mg/L	680	2000
6	Total Hardness (as CaCO ₃)	APHA 24 th Edition 2340 C: 2023	mg/L	347	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	54.9	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	50.3	100
9	Calcium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Ca B: 2023	mg/L	137	-

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21/10/23



[Signature]
21/10/23
Page 1 of 2



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Phone No: 9841074398 / 9698141777 E-mail : Info@shrientanalytical.com
Website : www.shrientanalytical.com

TEST REPORT

Report No. SARL/23-332

Report Date. 21.10.2023

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
10	Magnesium Hardness (as CaCO ₃)	APHA 24 th Edition 3500 Mg B: 2023	mg/L	210	-
11	Total Alkalinity (as CaCO ₃)	APHA 24 th Edition 2320 B: 2023	mg/L	272	600
12	Chloride (as Cl)	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	195	1000
13	Free Residual chlorine	APHA 24 th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO ₄ ²⁻)	APHA 24 th Edition 4500 SO ₄ ²⁻ - E: 2023	mg/L	120	400
15	Iron (as Fe)	APHA 24 th 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	2.34	45
17	Fluoride (as F)	APHA 24 th Edition 4500 F- D: 2023	mg/L	0.44	1.5
18	Manganese (as Mn)	APHA 24 th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: Permissible Limit in the Absence of Alternate Source of Drinking Water Specifications IS: 10500:2012.
BDL - Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified
21/10/23



END OF THE REPORT

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

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

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R



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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-333	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	SOIL		
Sample Mark	S1 - Mine Lease Area		

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-333	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.35
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	95.4
3	Dry matter content	IS 15106: 2002	%	98.06
4	Water Content	IS 15106: 2002	%	1.94
5	Organic Matter	IS 2720: Part 22: 1972	%	0.31
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	397
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	%	35.65
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	42.30
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	22.05
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	22.05
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.098
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	273
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	469
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L - 0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date - 01.03.2023): 2023	%	18.0
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.1

Remarks: BDL - Below Detectable limit (DL - Detectable limit).

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21/10/23



For Shrient Analytical and Research Labs Pvt. Ltd

Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-334	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	SOIL		
Sample Mark	S2 - Soorampatti Village		

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-334	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.12
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	91.2
3	Dry matter content	IS 15106: 2002	%	94.48
4	Water Content	IS 15106: 2002	%	5.52
5	Organic Matter	IS 2720: Part 22: 1972	%	0.29
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	592
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	Silt Loam
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	23.18
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	59.42
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	17.40
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	17.40
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.074
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	968
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	405
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	%	20.0
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.7

Remarks: BDL - Below Detectable limit (DL - Detectable limit).

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

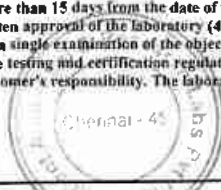
END OF THE REPORT

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Website : www.shrientanalytical.com

TEST REPORT

Report No.	SARL/23-335	Report Date.	21.10.2023
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Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.		
Sample Description	SOIL		
Sample Mark	S3 - Serugudi Village		

Customer Reference	As per work order	Sampling Procedure	EPA/600/R-92/128
Sample Reference No.	SARL/SO/CHE-335	Sample Received on	15.10.2023
Sample Collected by	LABORATORY	Test Commenced on	15.10.2023
Sample Collected Date	14.10.2023	Test Completed on	21.10.2023
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.87
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	86.59
3	Dry matter content	IS 15106: 2002	%	95.67
4	Water Content	IS 15106: 2002	%	4.33
5	Organic Matter	IS 2720: Part 22: 1972	%	0.54
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	821
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	%	30.98
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	48.93
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	20.09
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.106
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	326
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	649
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L - 0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date - 01.03.2023): 2023	%	17.0
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	4.5

Remarks: BDL - Below Detectable limit (DL - Detectable limit).


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For Shrient Analytical and Research Labs Pvt. Ltd

END OF THE REPORT


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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/23-336	Report Date.	21.10.2023
------------	-------------	--------------	------------

Customer Name & Address	The proposed quarry Of Thiru R.Rabeendran, survey nos. 378/2B2, 378/2C. 380/4A, 380/4B2(Part) and 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/N/CHE-336	Date of Monitoring	14.10.2023
Sample Collected by	LABORATORY		

Level in dB (A)

Time in hrs	N1	N2	N3	N4	N5	N6
06.00	37.4	36.7	38.4	38.9	36.6	39.9
07.00	44.7	44.1	41.0	46.8	38.9	42.1
08.00	48.6	47.9	43.7	45.4	44.9	44.2
09.00	50.0	49.4	45.7	47.1	48.6	45.8
10.00	47.3	46.7	46.9	39.4	50.4	47.1
11.00	50.3	49.7	45.8	42.7	47.6	43.4
12.00	44.5	43.9	46.7	43.8	46.7	45.3
13.00	45.3	44.7	47.3	42.0	46.1	43.8
14.00	48.3	47.7	45.4	44.9	49.5	44.0
15.00	47.4	46.8	42.7	41.1	49.8	42.4
16.00	46.8	46.6	45.8	43.3	49.1	43.8
17.00	42.3	41.7	42.0	44.8	48.1	41.4
18.00	40.4	39.6	42.4	43.7	45.5	40.1
19.00	39.5	38.9	43.8	41.3	44.0	37.9
20.00	38.3	37.7	39.5	38.8	41.8	36.8
21.00	40.8	39.6	40.6	36.8	40.8	38.4
22.00	36.4	35.8	38.7	34.9	37.3	37.6
23.00	35.0	34.4	37.8	35.4	36.7	38.0
24.00	37.5	36.6	36.3	36.1	35.8	37.6
01.00	35.6	35.0	36.7	35.0	35.0	38.1
02.00	36.4	35.8	36.1	36.4	36.8	37.8
03.00	37.7	37.1	36.8	35.5	37.4	36.4
04.00	35.6	35.0	37.6	35.7	37.9	37.1
05.00	39.3	38.7	36.6	36.5	37.4	38.9

Page 1 of 2

[Signature]
21/10/23



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21/10/23

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Website : www.shrientanalytical.com

TEST REPORT

Report No. SARL/23-336

Report Date. 21.10.2023

	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	46.1	45.5	44.4	43.4	46.9	43.1
NIGHT EQUIVALENT	36.9	36.3	37.2	35.7	36.9	37.7
DAY & NIGHT EQUIVALENT	44.6	44.0	43.0	42.0	45.4	42.0

Remarks:

LOCATIONS:

- N1 - Within Mine Lease Area
- N2 - Soorampatti Village
- N3 - Serugudi Village
- N4 - Appananallur Village
- N5 - Poolancherry Village
- N6 - Neeliampatty Village

For Shrient Analytical and Research Labs Pvt. Ltd


Verified 21/10/23


Authorized Signatory

J. GNANAPRAKASAM
Technical Manager

END OF THE REPORT

Please Contact:

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

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CIN : U74999TN2017PTC116807 / GST No. 33AAYCS7325R1ZA / Pan No: AAYCS7325R

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National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE
LIMITED**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

416/15, DHARGAS ROAD, PERUNGALATHUR, WEST TAMBARAM, CHENNAI, KANCHIPURAM, TAMIL
NADU, INDIA

in the field of

TESTING

Certificate Number: TC-12339

Issue Date: 30/09/2023

Valid Until:

29/09/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued
satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: SHRIENT ANALYTICAL AND RESEARCH LABS PRIVATE LIMITED

Signed for and on behalf of NABL

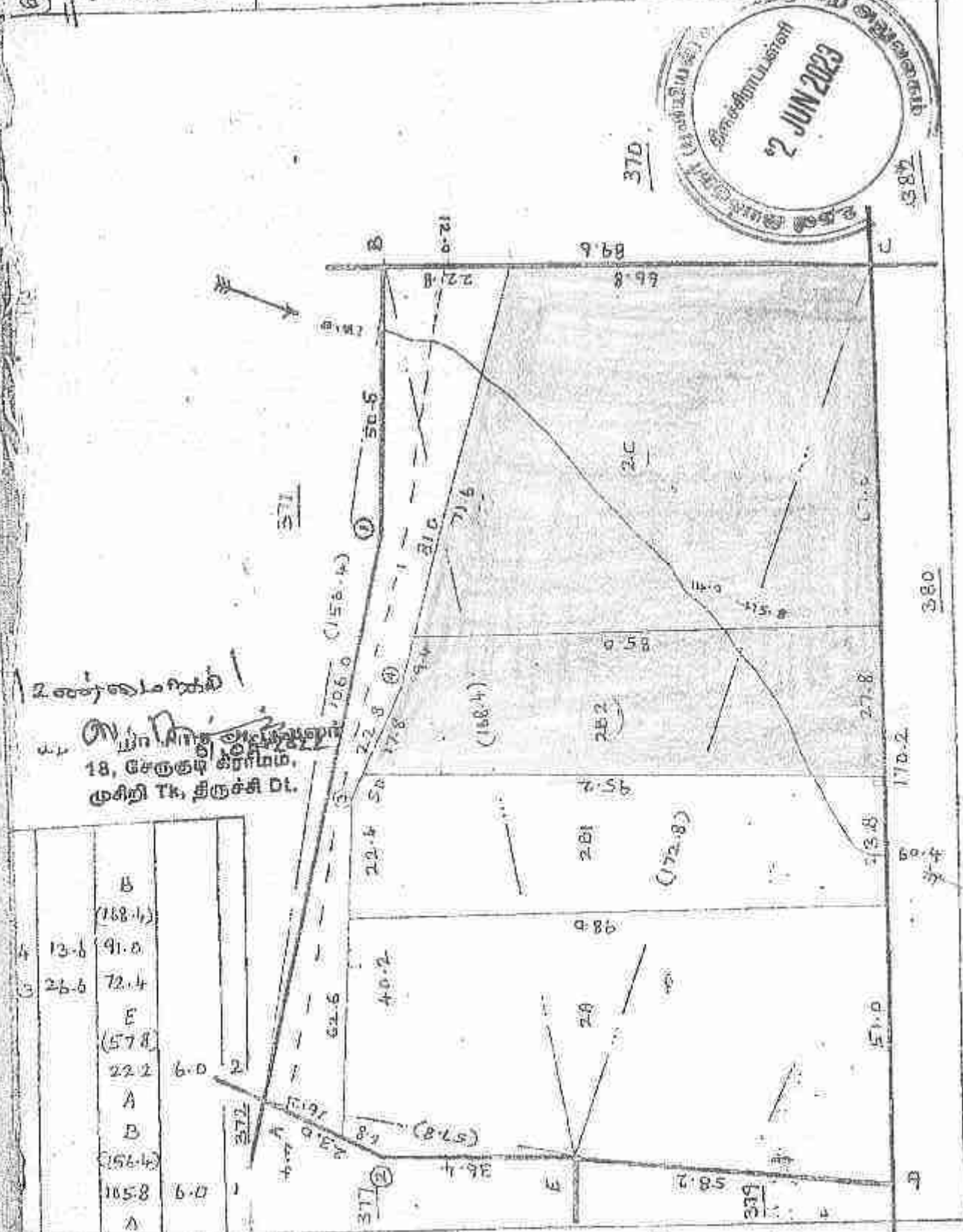


N. Venkateswaran
Chief Executive Officer

ANNEXURE - 7
Land Documents

பெட்டம். 4983
 முல்லை எண். 378

பரப்பு: ஏக்கர்கள் 1 ஏர் 44.5



2. கையாண்டு
 18. செஞ்சி கிராமம்.
 முகிதி Tk, திருச்சி Dt.

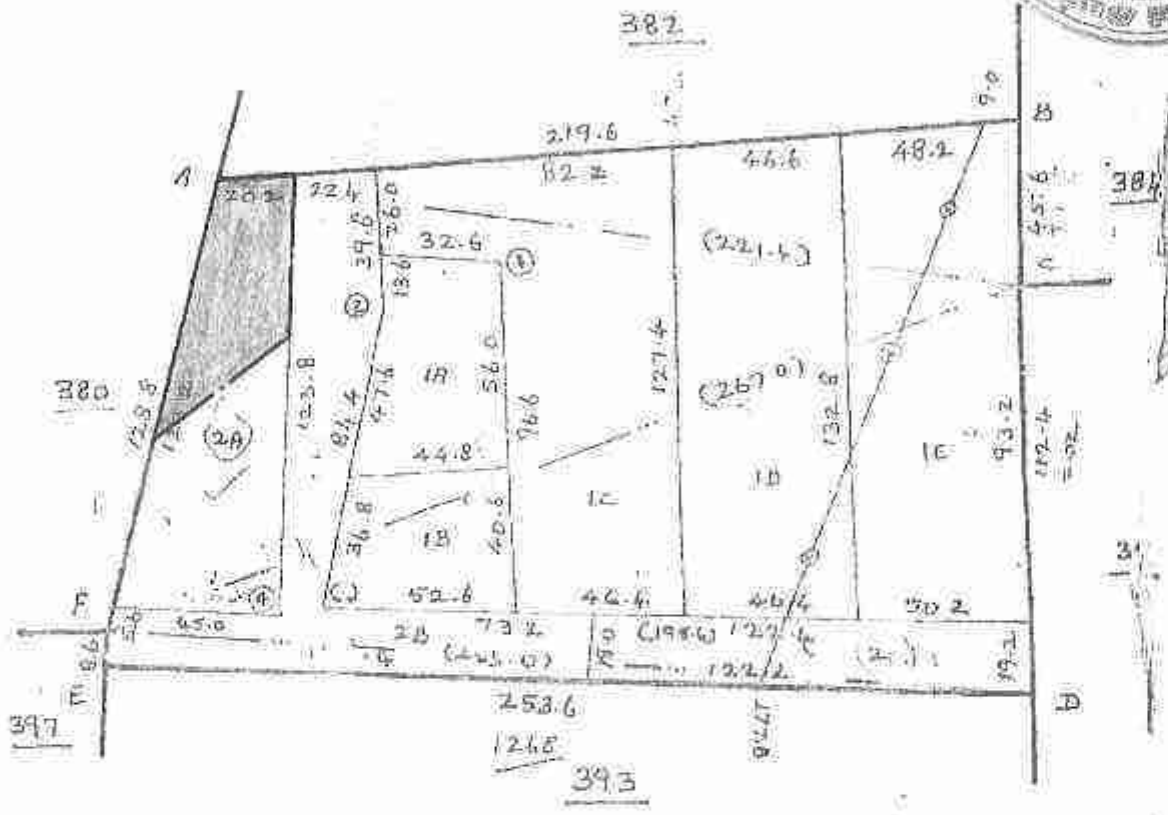
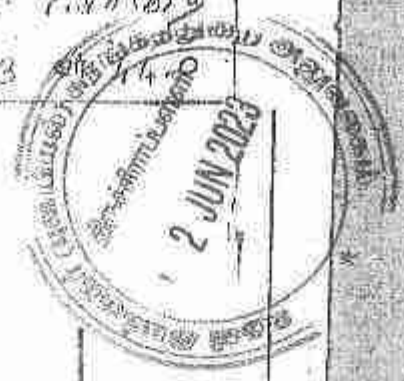
4	13-6	91.0	B	(188.4)
3	26-6	72.4	E	(57.8)
		22.2	A	
		6.0	B	(158.4)
		105.8	A	

2. கையாண்டு
 22986
 2111

அளவு: 1 ஏர் 44.5

LEASE APPLIED AREA

புல எண்: 381
 பரப்பு: சென்சிட்டிவ்
 கிராமம்: வெய்யா (150) டி
 தாலுகா: 4/5



(உரிமையாளர்)
 கி.வி. சி. சிவசாமி அண்ணாதுரை
 18, செருகுடி வீதி,
 முச்சி TK, திருச்சி Dt.

		F	
		(267.0)	
4	12.6	222.2	
		131.6	57.1
		C	
		F	
		(267.0)	
3	15.2	210.4	
		165.2	56.2
		C	

உரிமையாளர்
 கி.வி. சி. சிவசாமி அண்ணாதுரை
 23986
 11/2

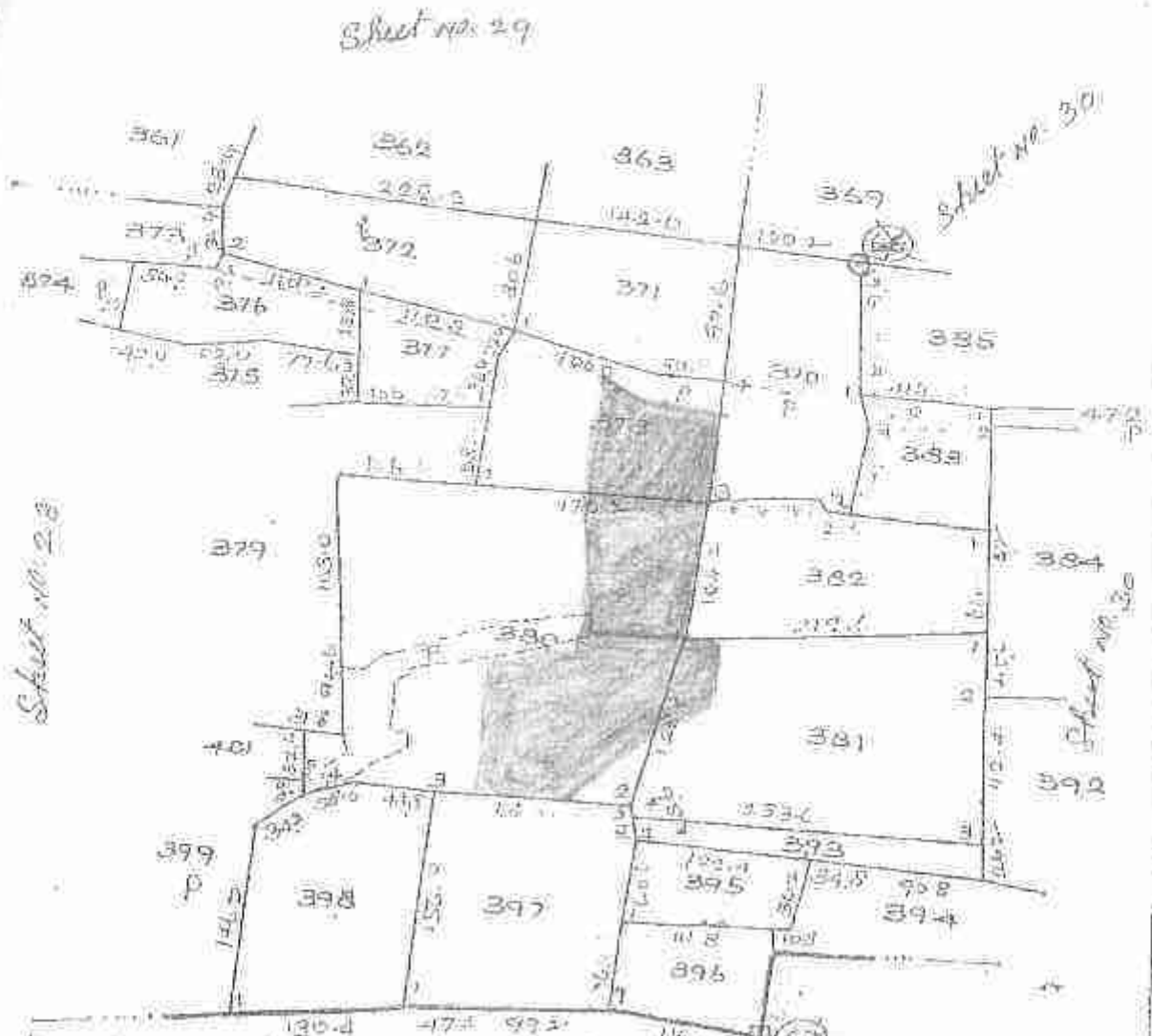
அளவு: 115.5 : 2000 ஏ.டி.

LEASE APPLIED AREA

M.L.O. *[Signature]*
 1751 STROD.

31
 Sheet No: 31
 பரப்பு: சென்னை

சிராமம்
 கிராம சபை



1200000 சென்னை

சிராமம் நிர்வாக அலுவலர்
 18, செருகுடி சிராமம்
 முசிறி Tk, திருச்சி Dt.

LEASE APPLIED AREA

[Signature]

[Signature]



ANNEXURE IV

தமிழக அரசு
வருவாய்த் துறை

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



மாவட்டம் : திருச்சிராப்பள்ளி

வருவாய் கிராமம் : சேர்குடி

பட்டா எண் : 303

உரிமையாளர்கள் பெயர்

1. ரெங்கராஜன்

தந்தை

ரயந்திரன்

பட்டா எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	
371	2B	0 - 22.50	0.28	--	--	--	--	S2004/1658--- 25-11-2004
371	3	0 - 45.50	0.56	--	--	--	--	S2004/1658--- 25-11-2004
378	2B2	0 - 23.50	0.31	--	--	--	--	S2004/1658--- 25-11-2004
378	2C	0 - 52.00	0.65	--	--	--	--	S2004/1658--- 25-11-2004
379	6	0 - 22.00	0.27	--	--	--	--	DK1181/11---- 13-08-2011
380	2	0 - 6.00	0.08	--	--	--	--	S2004/1721--- 25-11-2004
380	4A	1 - 0.0	1.24	--	--	--	--	DK1181/11- -2004/64 -- 13- 08-2011
380	4B1	0 - 71.00	0.87	--	--	--	--	DK1181/11--- 13-08-2011
380	4B2	1 - 46.00	1.80	--	--	--	--	DK1181/11--- 13-08-2011
381	2A	0 - 39.50	0.48	--	--	--	--	DK1181/11--- 13-08-2011
381	2C	0 - 23.00	0.29	--	--	--	--	DK1181/11--- 13-08-2011
382	1	0 - 60.50	0.66	--	--	--	--	--- -- 29-11- 2002
382	3	0 - 16.50	0.18	--	--	--	--	--- -- 29-11- 2002
383	2	0 - 69.50	0.86	--	--	--	--	DK1181/11--- 13-08-2011
391	2	0 - 32.50	0.40	--	--	--	--	DK1181/11---- 13-08-2011
397	1A	0 - 19.50	0.24	--	--	--	--	DK1181/11--- 13-08-2011
397	1C	0 - 37.00	0.46	--	--	--	--	DK1181/11---- 13-08-2011
398	1A1	0 - 41.50	0.51	--	--	--	--	DK1181/11---- 13-08-2011

399	1B	0 - 22.50	0.29	--	--		DK1181/11--- -- 13-08-2011
401	1A	0 - 40.00	2.25	--	--		DK1181/11--- -- 13-08-2011
401	1B	0 - 21.00	1.17	--	--		DK1181/11--- -- 13-08-2011
401	1C1	0 - 6.00	0.34	--	--		DK1181/11--- -- 13-08-2011
401	1C5	0 - 31.00	1.73	--	--		DK1181/11--- -- 13-08-2011
402	5A	--	--	0 - 16.00	2.32		DK1181/11--- -- 13-08-2011
402	5B	--	--	0 - 11.00	1.57		DK1181/11--- -- 13-08-2011
		9 - 48.50	15.92	0 - 27.00	3.89		

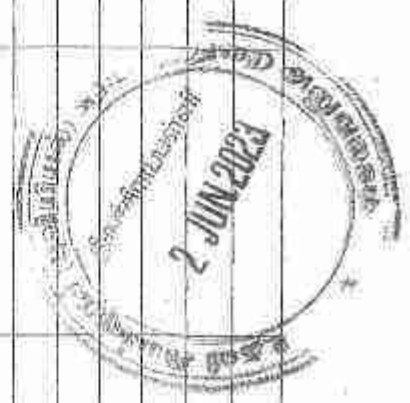


குறிப்பு 2 :



1. பெண்கள்/தகவல் / சான்றிதழ் நகல் விவரங்கள் யின் பதிவேட்டிலிருந்து பெறப்பட்டவை, இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 15/04/045/00303/60576 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 19-05-2023 அன்று 11:40:17 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் barcode பயன்படும் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்.

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சென்னை 2
 திருவள்ளூர் மாவட்டம் கருவாசி வார்டில் உள்ளிருந்து எடுத்துள்ள பட்டியல் கீழ்க்கண்ட மாதிரியில்

பெயர்	பெயர்					பெயர்	பெயர்	பெயர்	பெயர்	பெயர்
	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்					
...

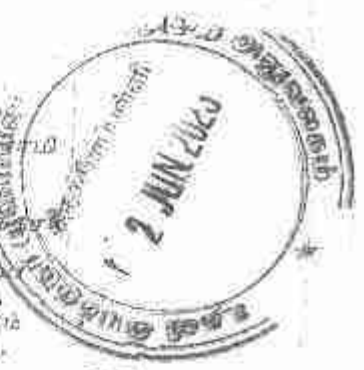
1A-21 - சட்டமன்றத்தின் சிவில் பிளாட்டில் உள்ளிருந்து எடுத்துள்ள பட்டியல் கீழ்க்கண்ட மாதிரியில்

பெயர்	பெயர்					பெயர்	பெயர்	பெயர்	பெயர்	பெயர்
	பெயர்	பெயர்	பெயர்	பெயர்	பெயர்					
...

...

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	2	3	4	5	6	7	8	9	10	11		
1	380	1	4	8-3	10	1	24	0	05-5	0	07	502 ப. முத்து பிள்ளை
2		2	4	8-3	10	1	24	0	60-0	0	08	775 ப. முத்து பிள்ளை (1), ப. முத்து பிள்ளை (2), ப. முத்து பிள்ளை (3).
3		3	4						31-5			
4		4	4	8-3	10	1	24	3	17-0	3	01	775 ப. முத்து பிள்ளை (1), ப. முத்து பிள்ளை (2), ப. முத்து பிள்ளை (3).
5									70-5	6	72	
6	38	1A	4	8-3	10	1	24	0	13-0	0	27	31 ப. முத்து பிள்ளை
7	38	1B	4	8-3	10	1	24	0	13-5	0	23	714 ப. முத்து பிள்ளை (1), ப. முத்து பிள்ளை (2).
8	38	1C	4	8-3	10	1	24	0	10-0	0	22	775 ப. முத்து பிள்ளை (1), ப. முத்து பிள்ளை (2), ப. முத்து பிள்ளை (3).
9	38	1D	4	8-3	10	1	24	0	10-5	0	25	31 ப. முத்து பிள்ளை
10	38	1E	4	8-3	10	1	24	0	02-0	0	43	714 ப. முத்து பிள்ளை (1), ப. முத்து பிள்ளை (2).
11	38	1F	4	8-3	10	1	24	0	10-5	0	48	60 ப. முத்து பிள்ளை
12	38	1G	4	8-3	10	1	24	0	43-5	0	54	478 ப. முத்து பிள்ளை
13	38	1H	4	8-3	10	1	24	0	11-0	0	20	பி. முத்து பிள்ளை
14									44-0	4	20	
15	382	1	4	8-3	11	1	24	0	00-5	0	06	303 ப. முத்து பிள்ளை
16	2								17-5			



சுயமாக
பிள்ளை

200/10/20/20/20

இந்த பிள்ளை பிள்ளைகள்...
 சீரமைக்கப்பட்டிருக்கின்றன...
 18, சீரமைக்கப்பட்டிருக்கின்றன...
 முகிழி Tk. திருச்சி Dt.

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भारत सरकार
GOVERNMENT OF INDIA



பெ. ராஜேந்திரன்
R Rabeendran
பிறந்த நாள் / DOB : 02/06/1965
ஆண் / MALE
6022 3915 4788



भारत सरकार / மலையாளம் அறிவிப்புகள்



भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

आपका नाम :
Srinivas / Arun Srinivas
चेरुवन्तूरु, 452/54 E 2, 4
A, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Address:
S/O Ranganajan, 452/54 E 2, V
G C NAGAR, MAIN ROAD,
LALGUDI TALUK, Angara
Tiruchirappalli, Tamil Nadu
621703



1847
www.uidai.gov.in



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ANNEXURE - 8

The Copy of Blasting
Agreement



தமிழ்நாடு தமில்நாடு TAMILNADU

09.06.2023

BG 554590

முபகிசுரன்
இலங்கை

இ.பாரதி

முத்திரைநாள் விழைகையாளர்
முசுரி. திருச்சி மாவட்டம்.
உரிமம் எண் : 6/2015 மர.ப.அ.



AGREEMENT

This agreement made on day of 08.06.2023 between Thiru. R.Rabeendran, S/o. R.S. Rengarajan, No.452/54.E2, V.O.C. Nagar, Main Road, Angarai Post, Lalgudi Taluk, Trichirappalli District - 621703, Tamil Nadu (here after called the owner of quarry)

And

Sri Selva Vinayagar Explosive, No.509/3, Mugavanoor South, Manapparai Taluk, Trichirappalli District, having Explosive License No.E/SC/TN/22/745 (E124611) and explosive magazine situated at Mugavanoor South here after referred as dealer of explosives.

Whereas the owner of the quarry having Re.No.427/2022/Mines, Dated: 02.06.2023, Quarry Survey Nos. 378/2B2, 378/2C, 380/4A, 380/4B2 (P), 381/2A (P) 8.19.0 Hectares the Survey Numbers are within Serugudi Village, Musiri Taluk, Trichirappalli District.



N. Sakthivel 8/6/23
N. SAKTHIVEL P.A.B.L.
ADVOCATE & NOTARY PUBLIC
(GOVT OF TAMILNADU) G.O.MS.No.259/2018
No.6-143B, Attalappan, Mettuchatti Po,
Musiri Tk, Trichy Dt - 621211
Cell: 94438 50247 / 89251

For SR SELVA VINAYAGAR EXPLOSIVE
[Signature]
Managing Partner

And whereas the dealer of explosives have agree to carry out the blasting operation with skillful short firer with in valid date.

Whereas the Party of the Second Part has decided to entrust the work of conducting blasting operation in his/their quarry work to the party of the First Part on contract basis as per mutually agreed terms and conditions.

Whereas the party of the Second Part is responsible for blasting operation and also making his own agreements for the explosives and exploding machines/ equipments required for the work. The entire blasting in the above quarry and the posses of blasting equipments will be handled by the party of the Second Party having valid license and short firer permits under the Explosives Rules, 2008 issued by the Department of Explosives and here by undertake the responsibility for the work entrusted.

Whereas payments will be made periodically by the party of the First Part for the quantity of explosives used and hours & time of the exploding equipments put into use calculations will be made and element will be arrived at one the completion of blasting operations.

SIGNED BY BOTH PARTIES

PARTY 1 :



For Thiru. R. Rabeendran

PARTY 2 :

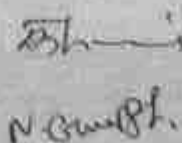


For Sri Selva Vinayagar Explosive

WITNESSES :

SIGNATURE

- * 1. B. THILAKASIRAMAN S/O BETHU
pattini patti
- * 2. N. Gowtham Pragasath S/O Nagaraj
pattini patti



SIGNED BEFORE ME AT MUSIRI.



SI. Sairaj 8/6/23
N. SAKTHIVEL B.A. B.L.
ADVOCATE & NOTARY PUBLIC
GOVT OF TAMILNADU & O.M.S. No. 250/2013
No. 5/143B, Attampalli, Melupatti, Po.
Musiri Tn, Trichy Dt - 621211
Cell: 94436 50247 / 89250 08699



भारत सरकार | Government of India
 वाणिज्य और उद्योग विभाग | Ministry of Commerce & Industry
 पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पिसो) | Petroleum & Explosives Safety Organisation (PESO)
 पूर्व नाम- विस्फोटक विभाग | Formerly- Department of Explosives
 पंचिवा तल इ-ब्लॉक, सी जे ओ कॉम्प्लेक्स | Sriv Panchar A-Block, SJO Complex,
 सेगिनरी हिल्स नगपुर | Seginri Hills, Nagpur 440006
 फोन (Phone)- 2510208 | फैक्स (Fax)- 2510577

संख्या (No.): E/SO/TN/22/745(E124611)

दिनांक (Date): 10/03/2023

सेवा में | To,

SRI SELVA VINAYAGAR EXPLOSIVE,
 No. T.A., Pongodaanchi - Post, Marachi, Keshavanthi village, Thon village - Marachi, Keshavanthi
 Distt. TIRUCHIRAPPALLI, State Tamil Nadu, Pincode - 621397

विषय | Survey No.590/3, ग्राम MUGAVANOR SOUTH, जिला TIRUCHIRAPPALLI, राज्य Tamil Nadu में गैस SRI SELVA VINAYAGAR EXPLOSIVE द्वारा विस्फोटक के मैग्जीन में उपयोग के लिए कच्चा हेतु विस्फोटक नियम, 2008 के अंतर्गत 1.1-3 में बारी अनुमति से E/SO/TN/22/745(E124611) के संशोधन संबंधी (विस्फोटक की मात्रा / मासिक खरीद सीमा में परिवर्तन)

Subject | Possession for Use of Explosives from magazine situated at Survey No.:590/3, MUGAVANOR SOUTH, Dist. TIRUCHIRAPPALLI, Tamil Nadu - Licence No.: E/SO/TN/22/745(E124611) granted in Form I.E.-3 of Explosives Rules, 2008 - (Amendment of Quantity of Explosives/Monthly Purchase Limit).

संदर्भ | Ref:

आपका उपरोक्त विषय पर मंत्र संख्या 82585 दिनांक 10/03/2023 का संदर्भ ग्रहण करें।
 Please refer to your letter no. 82585 dated 10/03/2023.

अनुमति संख्या E/SO/TN/22/745(E124611) विस्फोटक की मात्रा / मासिक खरीद सीमा में परिवर्तन के संदर्भ में तथा संशोधित कर भेजी जा रही है।
 The Licence No.: E/SO/TN/22/745(E124611) is forwarded herewith duly amended in respect of followings:

Quantity of Explosives/Monthly Purchase Limit

किसी भी एक समार में लाइसेंस शर्तों निर्धारित वर्ग तथा मात्रा से अधिक नहीं होगी।
 The license capacity in any one time shall not exceed the kinds and quantities mentioned below :

संख्या No	विस्फोटक Explosives)	वर्ग Class	प्रभाग Div	उप-प्रभाग Sub Div	क्षमता Capacity	इकाई Unit
1	Mixture	2	3	0	1000	Kg
2	Safety Fuse	6	1	0	500	Mtr
3	Detonating Fuse	6	2	0	20000	Mtr
4	Electric and/or Ordinary Detonators	5	3	0	1000	No.

जिसी एकक लैटर मार में खरीदने वाले विस्फोटक की मात्रा (अनुच्छेद 3) का योग (म) के अर्धी अनुमति के लिए समु. 8 गुना
 Quantity of explosives to be purchased in a calendar month shall not be more than 8 times of above.

यह अनुमति दिनांक 31 मार्च 2025 तक प्रवृत्त रहेगी।
 This license shall remain valid till 31st day of March 2025.

अनुमति के आगामी नवीकरण हेतु कृपया विस्फोटक नियम, 2008 के नियम 112 के अंतर्गत प्रक्रिया का पालन करें। कृपया प्रवृत्त।
 For further (revalidation) (if required), please follow the procedure under Rule 112 of Explosives Rules, 2008. Receipt of this letter may please be acknowledged.

भवदीय | Yours faithfully

(एम. के. पण्डेय | Mriddul Kumar Pandey)
 उप मुख्य विस्फोटक नियंत्रक | Deputy Chief Controller of Explosives
 क्री मुख्य विस्फोटक नियंत्रक | The Chief Controller of Explosives

प्रतिलिपि प्रेषित - Copy forwarded to:

1. मुख्य तथा विस्फोटक नियंत्रक, दक्षिण क्षेत्र
 The Jt. Chief Controller of Explosives, South Circle, Chennai
2. District Magistrate, TIRUCHIRAPPALLI, Tamil Nadu with reference to ILS/No. NoCR Dis/22/30318/2019 dated 19/04/2020
3. Superintendent of Police, TIRUCHIRAPPALLI, Tamil Nadu.

क्री मुख्य विस्फोटक नियंत्रक | For Chief Controller of Explosives

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।)
 (For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

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अनुज्ञप्ति प्रारूप एन.ई.-3 | LICENCE FORM (A-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 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञप्ति
Licence to possess (c) for use explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञप्ति सं. (Licence No.): E/SC/TN/22/745/E124611
वार्षिक फीस रूपर (Annual Fee Rs) 5000/-

Licence is hereby granted to:

SRI SETHA VINAYAGAR EXPLOSIVE (अधिभोगी / Occupier): K. Senthil Kumar, No. 74/A, Vengal Kurichy - Peel Marudhi
Ruddipatty village, Town/Village - Marudhi Ruddipatty, District-TIRUCHIRAPPALLI, State-Tamil Nadu, Pincode - 621307



को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रकृति (Status of licensee): **Partnership Firm**

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है।
Licence is valid only for the following purpose:

possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric and/or Ordinary Detonators, - के उपयोग के लिए

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किसों प्रकार और मात्रा के लिए विधिमान्य है।
Licence is valid for the following kinds and quantity of explosives: - (क) या

क्र. सं. (Sr. No.)	नाम और विवरण (Name and Description)	वर्ग और प्रभाग (Class & Division)	उप-प्रभाग (Sub-division)	मात्रा किसी एक समय में (Quantity at any one time)
1	Nitrate Mixture	2.0	0	1000 Kg.
2	Safety Fuse	6.1	0	5000 Mtrs
3	Detonating Fuse	6.2	0	20000 Mtrs
4	Electric and/or Ordinary Detonators	6.3	0	4000 Nos.

(ख) किसी एक कैलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए)
(b) Quantity of explosives to be purchased in a calendar month applicable for licence under article 3(b) and (g)

8 Times as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्त परिसर की चुरि चोती है।
The licensed premises shall conform to the following drawing(s)

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/745/E124611
दिनांक (Dated) 01/01/2023

6. अनुज्ञप्ति परिसर निम्नलिखित माने पर स्थित हैं। The licensed premises are situated at following address:
Survey No. 590/3 ग्राम (Town/Village) - MUGAVANOOR SQUAD

जिला (District)	TIRUCHIRAPPALLI	पुलिस थाना (Police Station) : VAIYAMPATTI	पिनकोड (Pincode)	621315
दूरभाष (Phone)		राज्य (State) Tamil Nadu	केस (Class)	
		ई-मेल (E-mail) parvishkrish@gmail.com		

7. अनुज्ञप्ति परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।
The licensed premises consist of following facilities:

High Explosives storage magazine, lobby and detonator room

8. अनुज्ञप्ति प्राप्त करने पर अनुज्ञप्त विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2008 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपायों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures:

- उपरोक्त क्रम सं. 4 में यथा कथित रेखाचित्र (स्थान, संरचनात्मक संदर्भों और अन्य विवरण दर्शाते हुए।)
Drawing(s) showing site, constructional and other details as stated in serial No. 5 above.
- अनुज्ञप्ति प्राधिकारी द्वारा अधिनियम 1884 के अधीन अनुज्ञप्ति की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्रारूप DE-2। Distance Form DE-2.

9. यह अनुज्ञप्ति तारीख 31 मार्च 2025 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2025.

यह अनुज्ञप्ति अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपरोक्त इस अनुज्ञप्ति की शर्तों का अधिकतम करने या यदि अनुज्ञप्त परिसर मौज्जा या उससे संबंध में दर्शाते विवरण के अनुरूप नहीं पाए जाने पर निरस्त या प्रतिबंधित 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 Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 10/08/2023

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
South Circle, Chennai

Amendments:

- Amendment of Quantity of Explosives Monthly Purchase Limit dated: 03/03/2023

नवीनीकरण के पुनर्ग्रहण के लिए स्थान
Space for Endorsement of Renewal

नवीनीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडिक 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.

TOR COPY



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

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY-TAMILNADU

3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.10166/SEAC/ToR-1517/2023 Dated:07.08.2023.

To

Thiru.R.Rabeendran,
S/o. Rengarajan
No.452/54.E2,
V.O.C Nagar main road,
Lalgudi Taluk,
Tiruchirappalli District-621703

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Proposed Rough stone Quarry over an extent of 3.19.0Ha at SF.No. 378/2B2, 378/2C, 380/4A, 380/4B2 (Part) & 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu by Thiru. R.Rabeendran - under project category – “B1” and Schedule S.No.1 (a) – ToR issued along with Public Hearing - preparation of EIA report – Regarding.

Ref: 1. Online proposal No. SIA/TN/MIN/434467/2023, dated:28.06.2023.
2. Your application submitted for Terms of Reference dated:30.06.2023.
4. Minutes of the 394th SEAC meeting held on 21.07.2023.
5.Minutes of the 644th SEIAA meeting held on 07.08.2023.

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

The proponent, Thiru.R.Rabeendran has submitted application for Terms of Reference (ToR) in Form-I, Pre- Feasibility report for Proposed Rough stone Quarry over an extent of 3.19.0Ha at


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SF.No. 378/2B2, 378/2C, 380/4A, 380/4B2 (Part) & 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

Proposed Rough stone Quarry over an extent of 3.19.0Ha at SF.No. 378/2B2, 378/2C, 380/4A, 380/4B2 (Part) & 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu by Thiru. R. Rabeendran - For Terms of Reference.

(SIA/TN/MIN/434467/2023, Dt. 28.06.2023)

The proposal was placed in the 394th SEAC Meeting held on 21.07.2023. The details of the project furnished by the proponent are given on the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Thiru. R. Rabeendran has applied for Terms of Reference for the Proposed Rough stone Quarry over an extent of 3.19.0Ha at SF.No. 378/2B2,378/2C,380/4A,380/4B2 (Part) & 381/2A (Part) of Serugudi Village, Musiri Taluk, Tiruchirappalli District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) " Mining of mineral of the Schedule to the EIA Notification, 2006.
3. As per the mining plan the lease period is for 5 years. The mining plan is for the period of Five years & the production should not exceed 4,09,762m³ of rough stone & 15,788m³ of Topsoil with an ultimate depth of mining is 46m BGL.The annual peak production is 84,115m³ of rough stone & 15,788m³ of Topsoil.

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

1. The PP shall submit (i) a predictive model showing the blast-induced ground vibration level to be maintained as per the DGMS provisions for the buildings/structures/habitations located within a radial distance of 500 m and (ii) the controlled blast design for the proposed quarry thereby minimizing the impacts due to blasting operation.
2. The PP shall analyze the cumulative pollution load including the crusher on the surrounding environment and the data shall be furnished in EIA report.


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3. The PP shall study and explore the technical feasibility & economical implications of installing conveyor belt system such as In-Pit Crushing Conveying (IPCC) Technology in place of the conventional 'Truck' transport system of ROM to the crusher location for ensuring environmental sustainability.
4. The PP shall submit a '**Conceptual Mining Plan and section (layout)**' indicating the **accessible ramp from the surface to the pit bottom** keeping the benches intact for the dimension as stipulated in the Approved Mining Plan.

Annexure I

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


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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?


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


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SEIAA-TN

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


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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.


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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/TNPCCB.
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.

Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	விளம்ப
2	<i>Adenaanthera pavonina</i>	Marjadi	மரஜாடி
3	<i>Albizia lebbek</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Uol	உல
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தரை
6	<i>Bauhinia racemosa</i>	Aathu	அத்து
7	<i>Bauhinia tomentosa</i>	Iruvathi	இருவாதி
8	<i>Buchanania axillaris</i>	Kathuma	காதுமா
9	<i>Borassus flabellifer</i>	Fanai	பனை
10	<i>Butea monosperma</i>	Murukkamarum	முருக்காமரம்
11	<i>Bobax coiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum inophyllum</i>	Pururai	புரூரை
13	<i>Cassia fistula</i>	Sarakondrai	சரகண்டரை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கண்டரை
15	<i>Chloroxylon swietenia</i>	Purasamaram	புரசாமரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Marjallavu	கொங்கு, மரஜாடி
17	<i>Cordia dichotoma</i>	Narvuli	நர்வூலி
18	<i>Crataeva adansoni</i>	Mavalingum	மாவலிங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உவா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitruzha	சீரு உவா
21	<i>Diospyros sebenerum</i>	Karungali	கரங்கலி
22	<i>Diospyros schloroxylon</i>	Vaganai	வாகை
23	<i>Ficus amplissima</i>	Kallitchi	கலித்தி
24	<i>Hibiscus tiliaceum</i>	Aatrupoovararu	அத்தரூபாரூர்
25	<i>Hardwickia tinata</i>	Aacha	அச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	அயிலி
27	<i>Lamnea coronanillica</i>	Oduam	ஒடும
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மரூது
29	<i>Lepisanthus tetraphylla</i>	Neikottamaram	நெிகொட்டாமரம்
30	<i>Linum acidissimum</i>	Vila marum	வில்லா மரம்
31	<i>Litsea glutinosa</i>	Piampattai	பிம்பாட்டை
32	<i>Madhuca longifolia</i>	Bluppai	புழை
33	<i>Mankara hexandra</i>	UakkaiPaalai	உக்கைபாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழாமரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுனா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுனா
38	<i>Phoenix sylvestris</i>	Eachai	ஏச்சா
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்


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40	<i>Prinna mollissima</i>	Munnai	முண்டை
41	<i>Prinna serratifolia</i>	Narumunai	நறு முண்டை
42	<i>Prinna tomentosa</i>	Malapocvarasu	மலைப் பூரக
43	<i>Prosopis cinara</i>	Vanni maram	வாணி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vernangu, Tada	வேண்டங்கை
46	<i>Pterospermum xylocarpum</i>	Polavu	பலவு
47	<i>Puthranjivu roxburghii</i>	Karipala	கரிபலா
48	<i>Salvadora persica</i>	Ugaa Maram	உகா மரம்
49	<i>Sapindus emarginatus</i>	Manipungan, Soapukai	மணிபுங்கை சோபுகை
50	<i>Saraca asoca</i>	Asoca	அசோகை
51	<i>Strobilus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetta	யெட்டை
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேர்தங்க கோட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia bellaric</i>	Thandri	தாண்டிரி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண்டி மருது
57	<i>Toona ciliata</i>	Sandhara vembu	சந்தரா வேம்பு
58	<i>Theopesia populnea</i>	Puvarasu	பூவரசு
59	<i>Walsuratrifoliata</i>	walsura	வால்சுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கொடுக்கப்பூளி

Discussion by SEIAA and the Remarks:-

The proposal was placed in the 644th Authority meeting held on 07.08.2023. The authority noted that this proposal was placed for appraisal in 394th meeting of SEAC held on 21.07.2023, the committee has furnished its recommendations for granting ToR with Public hearing subject to the conditions stated therein. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the conditions in '**Annexure B**' of this minute.

Annexure 'B'

Cluster Management Committee

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


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3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

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


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h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity

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

Forests

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

Water Environment

23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.

24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

Energy

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

Climate Change

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

Mine Closure Plan

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

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.


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36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment

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

Disaster Management Plan

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

Others

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.

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

41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

A. STANDARD TERMS OF REFERENCE

- 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


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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.


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- 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


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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.


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- 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


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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.


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- 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-11013/41/2006-1A. 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-11011/618/2010-1A. 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


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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.


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


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

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


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Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Tiruchirappalli District.
7. Stock File.

