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**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT  
&  
ENVIRONMENT MANAGEMENT PLAN**

” B1” CATEGORY – MINOR MINERAL – CLUSTER – NON-FOREST LAND-  
GOVERNMENT PORAMBOKE LAND

**GOPANAPALLI ROUGH STONE CLUSTER QUARRIES**

**At**

Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State

**For Obtaining**

**Environmental Clearance under EIA Notification – 2006  
Schedule Sl. No. 1 (a) (i): Mining Project**

**IN CLUSTER OVER AN EXTENT OF 17.50.0 Ha**

NAME OF PROPOSED PROJECT PROPONENTS APPLYING IN CLUSTER

Code	Proponent Name	Extent (Ha)
P1	M/s. Natural stone Industry	3.00.0
P2	M/s. Sree Krish Roughstone	3.00.0

1. Lr No. SEIAA-TN/F.No.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023- P1
2. Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023-P2

**Environmental Consultant**

GEO EXPLORATION AND MINING SOLUTIONS



Old No. 260-B, New No. 17,

Advaitha Ashram Road, Alagapuram,

Salem – 636 004, Tamil Nadu, India



Accredited for sector 1 Category ‘A’ ,31 & 38 Category ‘B’

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ENVIRONMENTAL LAB

**CHENNAI METTEX LAB PRIVATE LIMITED**

**(Approved by AAI, AGMARK, APEDA, BIS, EIC FSSAI, GAFTA,  
IOPEPC, MOEF & TEA BOARD)**

**Jothi Complex, 83, M.K.N Road, Guindy,**

**Chennai – 600 032**

**Baseline Monitoring Season – March 2023 to May2023**

**AUGUST -2023**

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For the easy representation the Proposed quarries are designated as below –

<b>PROPOSED QUARRIES</b>					
<b>CODE</b>	<b>Name of the Proponent and Address</b>	<b>S.F. Nos, Village &amp; Taluk</b>	<b>Extent in Ha</b>	<b>G.O. No &amp; Date</b>	<b>Status</b>
P1	M/s. Natural stone Industry	220/1 (P-1) of Gopanapalli Village, Hosur Taluk	3.00.0	Roc.535/2022/Mines dated: 21.04.2022	Lr No.SEIAA-TN/F.No.9943/SEAC/ToR-1494/2023 Dated:22.06.2023.
P2	M/s. Sree Krish Roughstone	220/1 (P-3) of Gopanapalli Village, Hosur Taluk	3.00.0	Roc.537/2022/Mines dated: 21.04.2022	Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023.
<b>NEAREST PROPOSED QUARRIES</b>					
P3	Thiru.Vijayakumar	220/1 (P-4)	2.00.0	Roc.538/2022/Mines dated: 26.04.2022	Precise area given
P4	Thiru.S. Raghu	381 (P-1)	1.30.0	Roc.539/2022/Mines dated: 04.05.2022	Lr No. SEIAA-TN/F.No.9566/SEAC/ToR-1326/2023 Dated:10.02.2023.
P5	Thiru.C.Nithin Reddy	220/1 (P-2)	3.00.0	Roc.536/2022/Mines dated: 05.05.2022	Lr No. SEIAA-TN/F.No.9570/SEAC/ToR-1348/2022 Dated:10.02.2023.
P6	Thiru.Dhivakar	381/1 (P-2)	1.50.0	Roc.540/2022/Mines dated: 22.04.2022	Precise area given
<b>Total Extent</b>			<b>13.80.0 Ha</b>		
<b>EXISTING QUARRIES</b>					
<b>CODE</b>	<b>Name of the Proponent and Address</b>	<b>S.F. Nos, Village &amp; Taluk</b>	<b>Extent in Ha</b>	<b>G.O. No &amp; Date</b>	<b>Lease Period</b>
E-1	P.Venkata Reddy	457 (P-2)	3.70.0	Roc.112/2016/Mines dated: 26.02.2020	26.02.2020 to 25.02.2030
<b>Total</b>			<b>3.70.0</b>		
<b>NIL</b>					
<b>ABANDONED/EXPIRED QURRY</b>					
<b>CODE</b>	<b>Name of the Proponent and Address</b>	<b>S.F. Nos, Village &amp; Taluk</b>	<b>Extent in Ha</b>		<b>Lease Period</b>
<b>NIL</b>					
<b>TOTAL CLUSTER EXTENT</b>			<b>17.50.0 Ha</b>		

Note: -

- Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

As per above notification S.O.2269(E) dated : 01.07.2016 in para (b) in Appendix XI,- (ii)(5): The lease not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environment Management Plan and the Regional Environmental Management Plan”

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## TERMS OF REFERENCE (ToR) COMPLIANCE

M/s. Natural stone Industry -P1

ToR Obtained vide Lr No.SEIAA-TN/F.No.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023

SPECIFIC CONDITIONS		
1	The proponent is requested to carry out a survey and enumerale on the structures located within 50m, 100m, 150m, 200m, 250m. 300m and 500m from the mine lease area.	Noted
2	The PP shall restrict the depth of mining up to 50m. and shall discuss the production quantity to be mined out in the EIA report	Noted
3	The PP shall furnish the details of the manufacturing unit shed located at a distance of 320m.	Noted
4	The proponent shall discuss the funds for mitigation measures to be included in the EMP.	Yes, Chapter-7 and 8 discussed about mitigation measures.
5	The proponent shall adhere to the bench height - 5m as stated in the approved mining plan.	Noted.
6	The proponent shall obtain Anna University Star rating system.	Noted.
7	The PP shall frame Environmental policy and shall appoint Environmental Manger etc.,	Noted.
8	The Project Proponent shall conduct the hydro-geological study considering the contour map ofthe water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers. tanks. canals, ponds etc. within i km (radius) 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. Necessary data and documentation in this regard may be provided.	enclosed hydrogeological study in chapter 3-Water environment
9	The proponent shall submit the details regarding the nature of blasting activity which will be carried out.	Noted
10	The PP shall furnish DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., upto a radius of25 km from the proposed site.	Noted
11	The PP shall provide individual notice regarding the Public Hearing to the nearby house owners located in the vicinity ofthe project site.	Noted and agreed
12	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or)	Noted and agreed

	partially formed as per the approved Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.	
13	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/Ist Class mines manager appointed by the proponent.	Noted and agreed
14	Since the quarry lies in a cluster situation, the PP shall furnish a Standard Operating Procedure for carrying out the safe blasting operation while considering the adjacent quarries lies in a radial distance of 500 m from their quarry.	Noted and agreed
15	Details of Green belt & fencing shall be included in the EIA Report.	Noted and agreed
16	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 else where in the State with video and photographic evidences.	Noted and agreed
17	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 a) what was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? b) Quantity of minerals mined out c) Highest production achieved in any one year d) Detail of approved depth of mining e) Actual depth of the mining achieved earlier f) Name of the person already mined in that leases area g) If EC and CTO already obtained' the copy of the same shall be submitted h) whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	<ul style="list-style-type: none"> <li>➤ It is a Fresh Lease application.</li> <li>➤ This is government poramboke land.</li> </ul>
18	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	Noted and agreed. Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3.



	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).	
19	he PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	Noted and agreed
20	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.	Noted and agreed
21	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.	Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2.
22	The Project Proponent shall provide the organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Discussed about Organization chart in Chapter 6,
23	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.	Baseline Data were collected for One Season (Summer season) March to May2023 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
24	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil, health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The Cumulative impact study due to mining operations is explained in chapter – 7
25	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Noted and agreed
26	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	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3.

	mine lease area should be prepared to encompass pre operational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	
27	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
28	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
29	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.	Mine Closure in Chapter -2
30	Impact on local transport infrastructure due to the Project should be indicated.	Transportation details mentioned in Chapter -2
31	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.	Details of the trees in the buffer zone given in Chapter No.3.
32	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Mine closure plan is detailed in Chapter:4.
33	Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.	Noted and agreed
34	The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.	Noted and agreed
35	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.	Noted and agreed
36	As a part of the study of flora and fauna around the	Noted and agreed

	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.	
37	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 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.	Species are proposed to plant in the safety barrier as mentioned in the ToR appendix. Proposed species are given in the Chapter No 4
38	Taller/one year old Saplings raised in appropriate size of bags; preferably eco-friendly bags should be planted in proper espacement 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.	It is a Proposed Lease. Around 1500 trees are proposed to quarry
39	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management Plan details in Chapter-7
40	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	A Risk Assessment and management Plan Chapter- 7
41	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 chapter- 10
42	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.	It is explained in Chapter -3
43	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	Details are listed in Chapter:3.

	indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	
44	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
45	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.	Noted and agreed
46	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.	It is Fresh Lease
47	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted and agreed
48	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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed

## **TERMS OF REFERENCE (ToR) COMPLIANCE**

**Thiru.Sree Krish Roughstone-P2**

**ToR Obtained vide Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023**

<b>SPECIFIC CONDITIONS</b>		
1	The PP shall submit photographs of fencing, greenbelt and garland drain.	Noted and agreed
2	The PP shall submit revised mining plan approval from Dept. of Geology & Mining in regard to the bench height of 5m each instead of 7m proposed bench height.	Noted and agreed
3	AD mines letter for the existing pit with details of earlier lease period and pit dimension.	Noted and agreed
4	The structures within the radius of (i) 50 m. (ii) 100 m. (iii) 200 m and (iv) 300 m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not,	Not applicable

	places of worship. industries. factories. sheds. etc.	
5	The study on impact of the dust & other environmental impacts due to proposed quarrying operations on the Rose flowers being cultivated through greenhouse nearby.	Noted and agreed
6	The Proponent shall furnish photographs of greenbelt, fencing and garland drain around the boundary of the proposed quarry.	Noted and agreed
7	The proponent shall furnish a revised EMP budget for entire life of proposed mining.	Noted and agreed
8	The revised and corrected version of the Production & Development Plan shall be produced with showing the safety berm width of 2m is maintained for the bench height of 2m distinctly in the gravel information and it shall be duly signed by the concerned QP & approved by the concerned AD (Geology & Mining).	Noted and agreed
9	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 prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.	Noted and agreed
10	If the blasting operation is to be carried out, the PP shall present a conceptual design for carrying out the NONEL initiation based controlled blasting operation including the line drilling & muffle blasting techniques and a Simulation Model indicating the anticipated Blast-induced Ground Vibration levels in the proposed quarry as stipulated by the DGMS Circular No 7 of 1997. during the EIA Proposal.	Noted and agreed
11	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 <sup>st</sup> Class mines manager appointed by the proponent.	Noted and agreed
12	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	Noted and agreed

	from the blast site.	
13	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 else where in the State with video and photographic evidences.	Noted and agreed
14	<p>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</p> <p>a) what was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?</p> <p>b) Quantity of minerals mined out</p> <p>c) Highest production achieved in any one year</p> <p>d) Detail of approved depth of mining</p> <p>e) Actual depth of the mining achieved earlier</p> <p>f) Name of the person already mined in that leases area</p> <p>g) If EC and CTO already obtained' the copy of the same shall be submitted</p> <p>h) whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches</p>	It is a Fresh lease application
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)	Noted and agreed. Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3.
16	The PP shall carry out Drone video survey covering the cluster, Green belt , fencing etc.,	Noted and agreed
17	The PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the proposed quarry based on the volume of rock handled & area of excavation.	Not applicable
18	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.	Noted and agreed

19	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.	Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2.
20	The Project Proponent shall provide the organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Discussed about Organization chart in Chapter 6
21	The project proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1km (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 are this regard may be provided.	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
22	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.	Baseline Data were collected for One Season (Winter Monsoon) March2023-May2023 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3. including traffic/vehicular movement study. (Chapter-2)
23	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil, health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The Cumulative impact study due to mining operations is explained in chapter – 7
24	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Noted and agreed
25	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	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases

	features should be indicated. Land use plan of the mine lease area should be prepared to encompass pre operational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	are discussed in Chapter No. 2, Table No 2.3.
26	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
27	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
28	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.	Mine Closure in Chapter -2
29	Impact on local transport infrastructure due to the Project should be indicated.	Transportation details mentioned in Chapter -2
30	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.	Details of the trees in the buffer zone given in Chapter No.3.
31	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	Mine closure plan is detailed in Chapter:4.
32	Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.	Noted and agreed
33	The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.	Noted and agreed
34	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.	Noted and agreed



35	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.	Noted and agreed
36	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.	Species are proposed to plant in the safety barrier as mentioned in the ToR appendix. Proposed species are given in the Chapter No 4
37	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper espacement 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.	It is a fresh Lease. Around 1500 trees are proposed to plant
38	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management Plan details in Chapter-7
39	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	A Risk Assessment and management Plan Chapter- 7
40	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 chapter- 10
41	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.	It is explained in Chapter -3
42	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	Details are listed in Chapter:3.

	indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	
43	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
44	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	Details in chapter3 and employment benefits.
45	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.	It is a fresh Lease
46	The PP shall prepare the EMP fbr the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted and agreed
47	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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed

<b>ADDITIONAL CONDITIONS</b>		
<b>Annexure -B Cluster Management Committee</b>		
1	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Details in chapter1 and 7 salient features of quarry with existing 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.,	Noted & agreed
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.	Noted & agreed
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.	Transport details in chapter-2
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities	Noted & agreed

	like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	
6	The Cluster Management Committee shall from Environmental Policy to practice sustainable mining in 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.	Noted & agreed
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.	Noted & agreed
8	The committee shall furnish the Emergency Management plan within the cluster.	Details discussed in chapter 7.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Details discussed in chapter 10.
10	The committee shall furnish an action plan to achieve sustainable development goals with inference to water, sanitation & safety.	Noted & agreed
11	The committee shall furnish the fire safely and evacuation plan in the case of fire accidents.	Detailed discussed in chapter 7.
<b>Impact study of mining</b>		
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 precise area communication order issued from reputed search institutions on the following. a) Soil health and 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 and Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, forestry and traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams.	Discussed about chapter-2 and chapter3 ecology Biodiversity.
13	Impact on surrounding agricultural fields around the proposed mining Area.	Detailed discussed in chapter 4.
14	Impact on soil flora & Vegetation around the project site.	Detailed discussed in chapter 4.
15	Details of type of vegetation 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.	Details in Chapter 2,3 and 7
16	The EIA should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural ecosystem.	Details in Chapter 3

17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Details in Chapter 3
18	The project proponent shall study and furnish the impact of project on adjoining Patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the East, South and west side and crusher located on North side. Nearest Coconut agriculture land is situated South side of the area. Proponent proposed to erect green mesh along with fencing on the South side besides, Budgetary allocation given in the Chapter No. 10.
<b>Forests</b>		
19	The project proponent shall detail study on Impact of mining on Reserve forests free ranging wildlife.	Noted and agreed, there is no reserve forest and wildlife in the buffer zone.
20	The Environmental Impact assessment should study impact on forests, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Discussed in chapter3 explaine flora and fauna details.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for production.	Chapter-4-discussed with Ecology impact with afforestation plan study impact on standing trees and the existing trees should be numbered and action suggested.
22	The Environmental Impact Assessment should study impact on protected areas, RF, National Park, Corridors and wildlife pathways, near project site.	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
<b>Water Environment</b>		
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 km (radius) so as to assess the impacts on the nearby water bodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	Detailed discussed in the chapter 3.
24	Erosion Control Measures.	Noted
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby villages, waterbodies/Rivers and any ecological fragile areas.	Details in Chapter 2
26	The project proponent shall study impact on fish habitats and the food WEB/food chain in the waterbody and Reservoir.	Details in Chapter 2 and 4 impact of bio diversity.
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment by the activities.	Details in Chapter 3 and 4.
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.	Noted & agreed. Detailed under Chapter 3.
29	The terms of Reference should specifically study	Details in Chapter 3 soil environment.

	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.	Nearest agriculture activity is coconut plantation located North side of the project area. Proponent erected fencing in the previous lease period. The same will be reconstructed around the quarry pits
<b>Energy</b>		
31	The measure taken control Noise, Air, water, dust control and steps adopted to efficiently utilize the energy shall be furnished.	Details in Chapter 3 environmental monitoring details.
<b>Climate changes</b>		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest to measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	Details of carbon emission and mitigation activities are given in the Chapter No.4
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and soil and below soil carbon stock.	Details in Chapter-3 for meteorological and climate/weather data representation of graphs.
<b>Mine Closure Plan</b>		
34	Detailed mine closure plan covering the entire mine lease period as per precise area communication order issued.	Details in Chapter 2 mine closure plan
<b>EMP</b>		
35	Detailed environment management plan along with adaptation, mitigation and remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed environment management plan in chapter 6
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.	Details in Green belt development in chapter 7
<b>Risk Assessment</b>		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	A Risk Assessment and management Plan Chapter- 7
<b>Disaster management plan</b>		
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/unfavorable accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster management Plan details in Chapter-10
<b>Others</b>		
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.,	Details in chapter-2 with attached annexure
40	As per the MoEF &CC office memorandum F.No.22-65/2017-IA.III dated:30.09.2020 and	Noted and agreed, to be furnished public hearing

	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 plastics & Microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Details of carbon emission and mitigation activities are given in the Chapter No.4

<b>STANDARD TERMS OF REFERENCE</b>		
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.	Not applicable.  This is not a violation category project.  This proposal falls under B1 Category (Cluster Condition).
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The applied land for quarrying is a Government Poramboke Land.  Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	Noted & agreed.
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Map showing –  Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.1  Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3  Surface Features around the project area covering 10km radius – Figure No. 2.2  Geology map of the project area covering 10km radius - Figure No. 2.7.  Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of	Map showing –  Geology map of the project area covering 10km radius - Figure No. 2.7.

	the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
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 has framed their Environmental Policy and the same is discussed in the Chapter No 10.1.
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	<p>It is an opencast quarrying operation proposed to operate in Mechanized method. The Rough Stone quarry formation is a hard, compact and homogeneous body.</p> <p>The height and width of the bench will be maintained as 5m with 90<sup>0</sup> bench angles.</p> <p>Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate.</p> <p>Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.</p>
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.	<p>Noted &amp; agreed.</p> <p>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.</p>

10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3.  Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3.
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	Not Applicable.  There is no waste anticipated during this quarry operation. The entire quarried out Rough Stone quarry will be transported to the needy customers.  No Dumps is proposed outside the lease area.
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	Not Applicable.  There is no Forest Land involved in the proposed project area. The proposed project area is a It is a Government Poramboke Land.  Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. 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.	No Reserve Forest within the Study Area.
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	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.



	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.	Not Applicable.  There are no National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
18	A detailed biological study of the study area [core zone and buffer zone (10 KM radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3.  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.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable.  Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range'.
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned	Not Applicable.  The project doesn't attract The C. R. Z. Notification, 2018.

	Coastal Zone Management Authority).	
21	<p>R&amp;R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&amp;R Plan, the relevant State/National Rehabilitation &amp; 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&amp;R and socio-economic aspects should be discussed in the Report.</p>	<p>Not Applicable.</p> <p>There are no approved habitations within a radius of 300 meters.</p> <p>Therefore, R&amp;R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.</p>
22	<p>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</p> <p>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>Baseline Data were collected for One Season (Summer) March– May 2023 as per CPCB Notification and MoEF &amp; CC Guidelines.</p> <p>Details in Chapter No. 3.</p>
23	<p>Air quality modelling 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 modelling 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</p>	<p>Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view 9.6.1 Model.</p> <p>Details in Chapter No. 4.</p>

	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.	Total Water Requirement: 1.8 KLD -P1 Total Water Requirement: 1.8 KLD -P2 Discussed under Chapter 2
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. Drinking water will be sourced from the approved water vendors.
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.	Part of the working pit will be allowed to collect rain water during the spell of rain will be used for greenbelt development and dust suppression. The Mine Closure Plan is prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
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 Chapter 4.
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.	Not Applicable. The ground water table 88m below ground level. The ultimate depth of quarry is 66m agl. This proposal of 88m below ground level will not intersect the ground water table, which is inferred from the hydro-geological carried out at the project site. Discussed under Chapter 3.
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Not Applicable. There is no stream, seasonal or other water bodies passing within the project area. Therefore, no modification/ diversion of water bodies is anticipated.

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.	<p>Highest elevation of the project area is 870m to 858m AMSL-P1</p> <p>Ultimate depth of the mine is 66m (66m AGL+10m BGL)-P1</p> <p>Water level of the area is 88m BGL-P1</p> <p>Highest elevation of the project area is 858m to 848m AMSL-P2</p> <p>Ultimate depth of the mine is 66m-P2</p> <p>Water level of the area is 88m BGL-P2</p>
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 is discussed under Chapter 4, Page No.123.
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.	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details in Chapter 2.
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2 Page No.32.
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be	<p>Discussed under Chapter 2.</p> <p>Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 1.</p>

	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.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.
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.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 36 people directly and 50 people indirectly.
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/AMP 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.	No litigation is pending in any court against this 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. 4,46,40,000/-P1 Project Cost is Rs. 4,46,40,000/-P2 CER Cost is Rs 5,00,000/- -P1 CER Cost is Rs 5,00,000/- P2
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
43	Benefits of the Project if the Project is	Details in Chapter 8.

	implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	
44	<b>Besides the above, the below mentioned general points are also to be followed: -</b>	
a	Executive Summary of the EIA/EMP Report	Enclosed as separate booklet.
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.	List of Tables and source of the data collected are 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	Baseline monitoring reports are enclosed with This report in Chapter 3. Original Baseline monitoring reports will be submitted in the final EIA report during appraisal.
e	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
f	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA /EMP Report.
g	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & agreed. Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) Dated: 4th August, 2009 are 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	Noted & agreed.
i	As per the circular no. J-11011/618/2010-IA. II(I) Dated: 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the	Not Applicable.

	Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	
j	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface Plan – Figure No. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.

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## CHAPTER – 1: INTRODUCTION

### 1.0 Preamble

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 quarry are the major requirements for construction industry. This EIA report is prepared by considering Cumulative load of all proposed & existing quarries of Gopanapalli Rough Stone Quarries Cluster consisting of two Proposed quarry and four nearest proposed quarries and one existing quarry with total extent of Cluster of 17.50.0 Ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State, cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1<sup>st</sup> July 2016.

This EIA Report is prepared in compliance with ToR obtained for the below proposals in Table 1.1 and the Baseline Monitoring study has been carried out during the period of March2023-May2023

**TABLE 1.1: ToR OBTAINED PROJECTS**

CODE	Name of the proponent	Extent (Ha)	Terms of Reference (ToR)
P1	M/s. Natural stone Industry	3.00.0	Lr.No.SEIAA-TN/F.No.9943/SEAC/ToR-1494/2023 Dated:22.06.2023
P2	M/s. Sree Krish Roughstone	3.00.0	Lr.No.SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023
	<b>Total</b>	<b>6.00.0</b>	

Source: ToR Letter's of the respective project proponents

### 1.1 Purpose of the report

The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14<sup>th</sup> September 2006 and its subsequent amendments as per Gazette Notification S.O. 3977 (E) of 14<sup>th</sup> August 2018, Mining Projects are classified under two categories i.e. A (> 100 Ha) and B ( $\leq$  100 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix – XI.

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed projects are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

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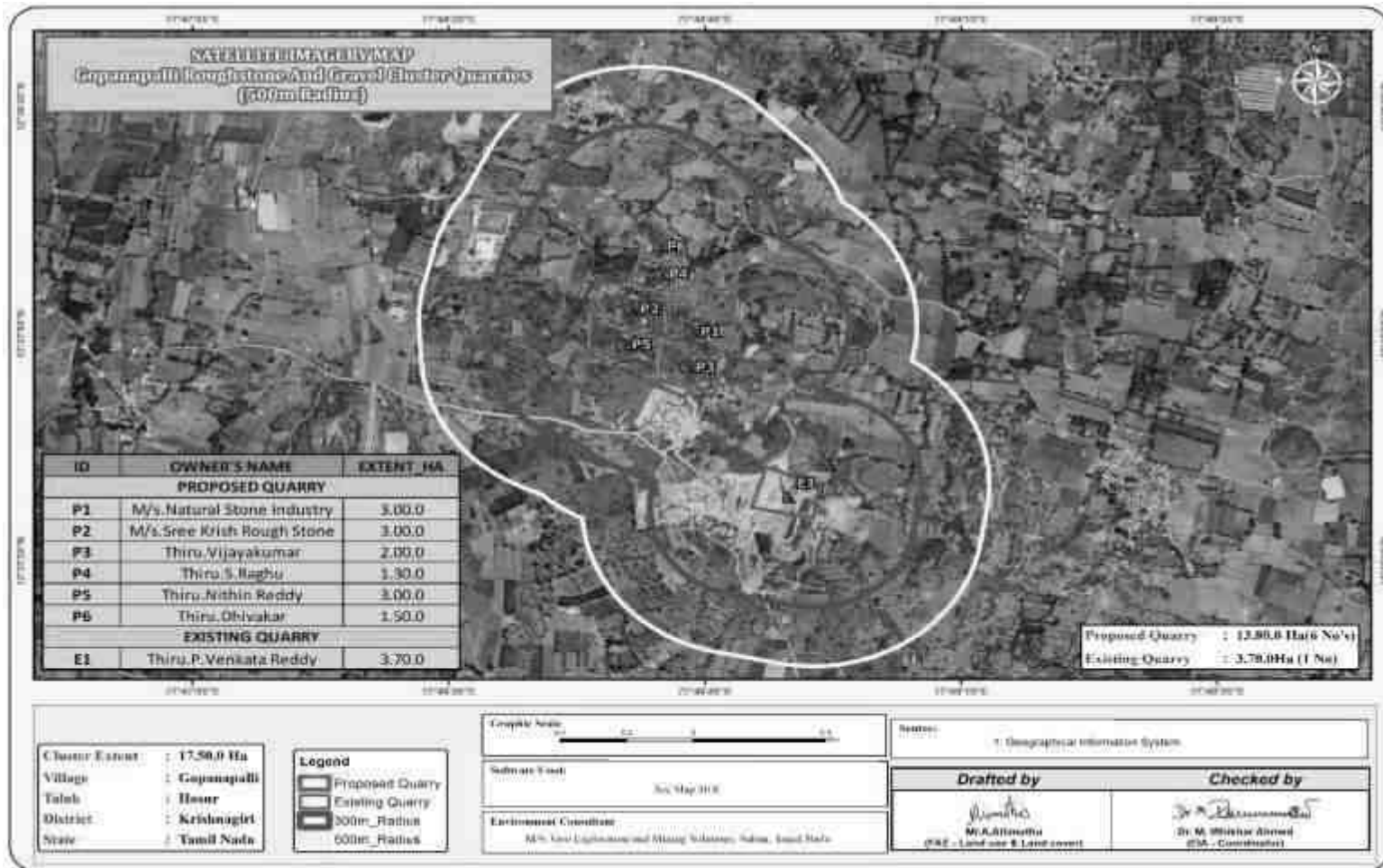
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**“Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”**

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**FIG.1.1 SATELLITE IMAGERY CLUSTER QUARRIES**



**+Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016**

Note: As per above notification S.O.2269(E) dated: 01.07.2016 in para (b) in Appendix XI, - (i)(6) A cluster shall be formed when the distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in a homogeneous mineral area which shall be applicable to the mine lease or quarry licenses granted on and after 9<sup>th</sup> September, 2013

## 1.2 Identification of Project and Project Proponent

### 1.2.1 Identification of Project

The project areas in the cluster are Government Poramboke Land., no forest land is involved

**TABLE 1.2: PROPOSED PROJECTS IN THE CLUSTER**

Description	P1	P2
Name of the Project	M/s. Natural stone Industry Rough Stone quarry	M/s.Sree Krish Roughstone Rough Stone quarry
S.F. No.	220/1 (P-1)	220/1 (P-3)
Extent	<b>3.00.0 Ha</b>	<b>3.00.0 Ha</b>
Village Taluk and District	Gopanapalli Village, Hosur Taluk Krishnagiri District	

Source: Approved Mining Plan

### 1.2.2 Identification of Project Proponent

**TABLE 1.3: DETAILS OF PROJECT PROPONENT**

PROPOSAL – P1	
Name of the Company	M/s. Natural stone Industry
Address	D.No.1/518, Senthil Nagar, Vth Cross, Pudhupettai, Agasipalli, Krishnagiri District – 635002.
Mobile	+91 9942913710
Status	Partnership firm
PROPOSAL – P2	
Name of the Company	M/s.Sree Krish Roughstone
Address	D.No.212, Goundarkottai, Karukkansavadi, Errahalli Post, Kaveripattinam, Krishnagiri District - 635 112
Mobile	+91 9865419386
Status	Partnership firm

Source: Approved Mining Plan of the respective projects

## 1.3 Brief description of the project

### 1.3.1 Nature and size of the Project

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

**TABLE 1.4: SALIENT FEATURES OF THE PROPOSED PROJECTS IN CLUSTER**

SALIENT FEATURES OF PROPOSAL “P1”		
Name of the Mine	M/s. Natural stone Industry	
Land Type	It is a Government Poramboke Land.	
S.F. Nos	220/1 (P-1)	
Extent	<b>3.00.0 Ha</b>	
Previous quarry operation details	It is a fresh Lease area.	
Geological Reserves	Rough Stone quarry	TopSoil (Gravel)
	18,80,592m <sup>3</sup>	92,442m <sup>3</sup>
Mineable Reserves	Rough Stone quarry	TopSoil (Gravel)

	90,4638m <sup>3</sup>	75,438 m <sup>3</sup>
Proposed production for First Five years	60,25,88m <sup>3</sup> +35m Roughstone)	75,438 m <sup>3</sup> 38m (3m topsoil (Gravel)
Proposed production for Second Five years	30,2050m <sup>3</sup>	35m (35m Roughstone)
Mining Plan Period / Lease Period	10 Years	
Depth of mining	66m (3m Topsoil +63m Rough stone)	
Ultimate Pit Dimension	198m(L) x 127m (W) x54m(D)	
Toposheet No	57 H/14	
Latitude	12°37'59.2819"N to 12°37'56.7500"N	
Longitude	77°48'41.4624"E to 77°48'33.7498"E	
Highest elevation	870-858m AMSL	
Water table depth	88m from the Below surface	
Machinery proposed	Jack Hammer	6
	Compressor	2
	Hydraulic Excavator	2
	Tippers	2
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18Nos	
Total Project Cost	Operational Cost	Rs. 4,42,90,000/-
	EMP Cost	Rs. 3,50,000/-
	Total	Rs. 4,46,40,000/-
CER Cost	Rs.5,00,000/-	
Nearest Habitation	520m-N	
<b>SALIENT FEATURES OF PROPOSAL "P2"</b>		
Name of the Mine	<b>M/s.Sree Krish Roughstone</b>	
Land Type	It is a Government Poramboke Land.	
S.F. No.	220/1 (P-3)	
Extent	<b>3.00.0 Ha</b>	
Previous quarry operation details	It is a fresh lease application	
Depth of Mining	66m (3m Topsoil +63m Rough stone)	
Geological Resources	Rough Stone quarry	Topsoil
	1715980 m <sup>3</sup>	88,620m <sup>3</sup>
Mineable Reserves	Rough Stone quarry	Topsoil
	7,25,186m <sup>3</sup>	68,760m <sup>3</sup>
Proposed production for First Five years	512190 m <sup>3</sup> Reserve 38m (3m topsoil (Gravel) +35m Roughstone)	
Proposed production for Second Five years	212996 m <sup>3</sup> (28m Roughstone Reserve)	
Mining Plan Period / Lease Period	10 Years	
Ultimate Pit Dimension	191m (L) X 120m (W) X 56m (D)	
Toposheet No	57 -H/14	
Water table depth	88m from the Below surface	
Latitude	12°37'56.0941"N to 12°37'54.3668"N	
Longitude	77°48'49.1130"E to 77°48'40.8039"E	
Highest Elevation	858m to 848m AMSL	
Machinery	Jack Hammer	6
	Compressor	2

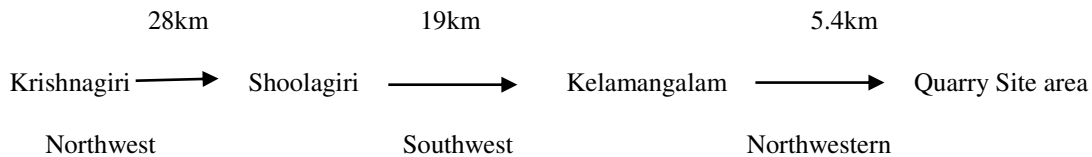


	Hydraulic Excavator	2
	Tippers	2
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18 Nos	
Total Cost	Operational Cost	Rs. 4,42,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 4,46,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	600m-NW	

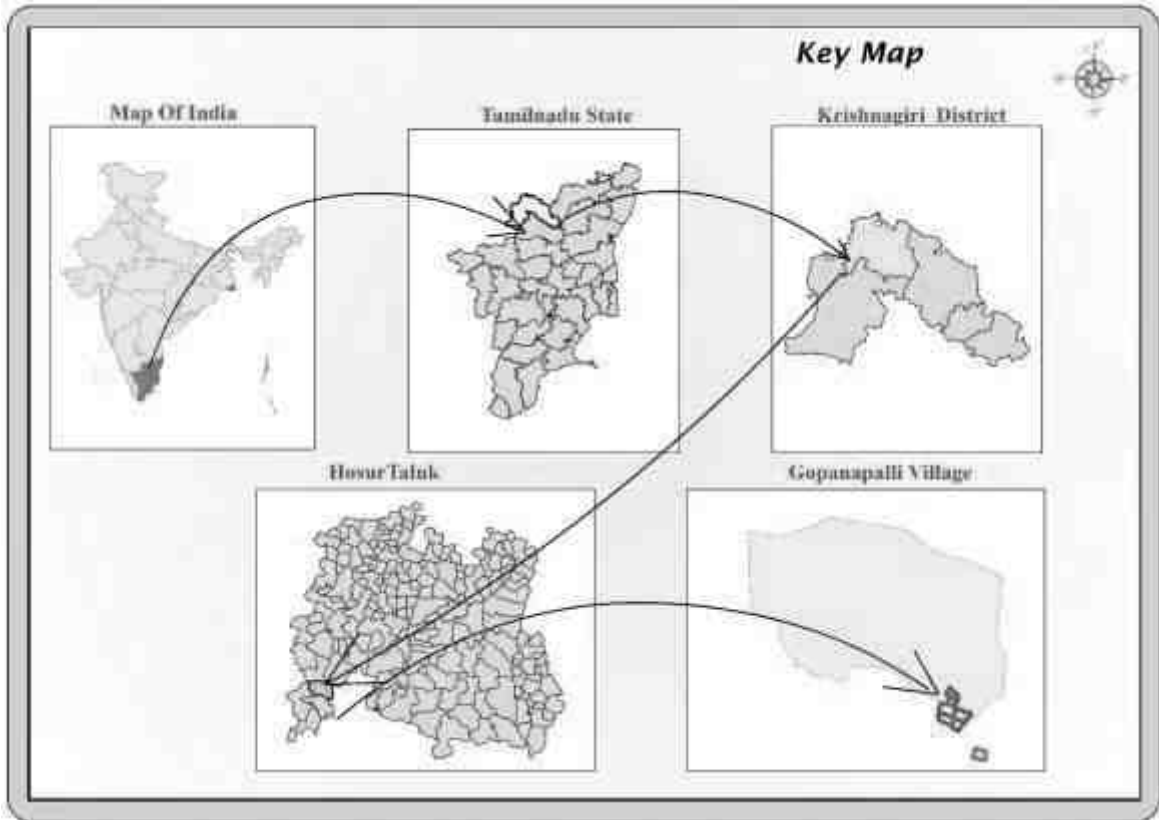
Source: Approved Mining Plan of the respective proposals

### 1.3.2 Location of the project

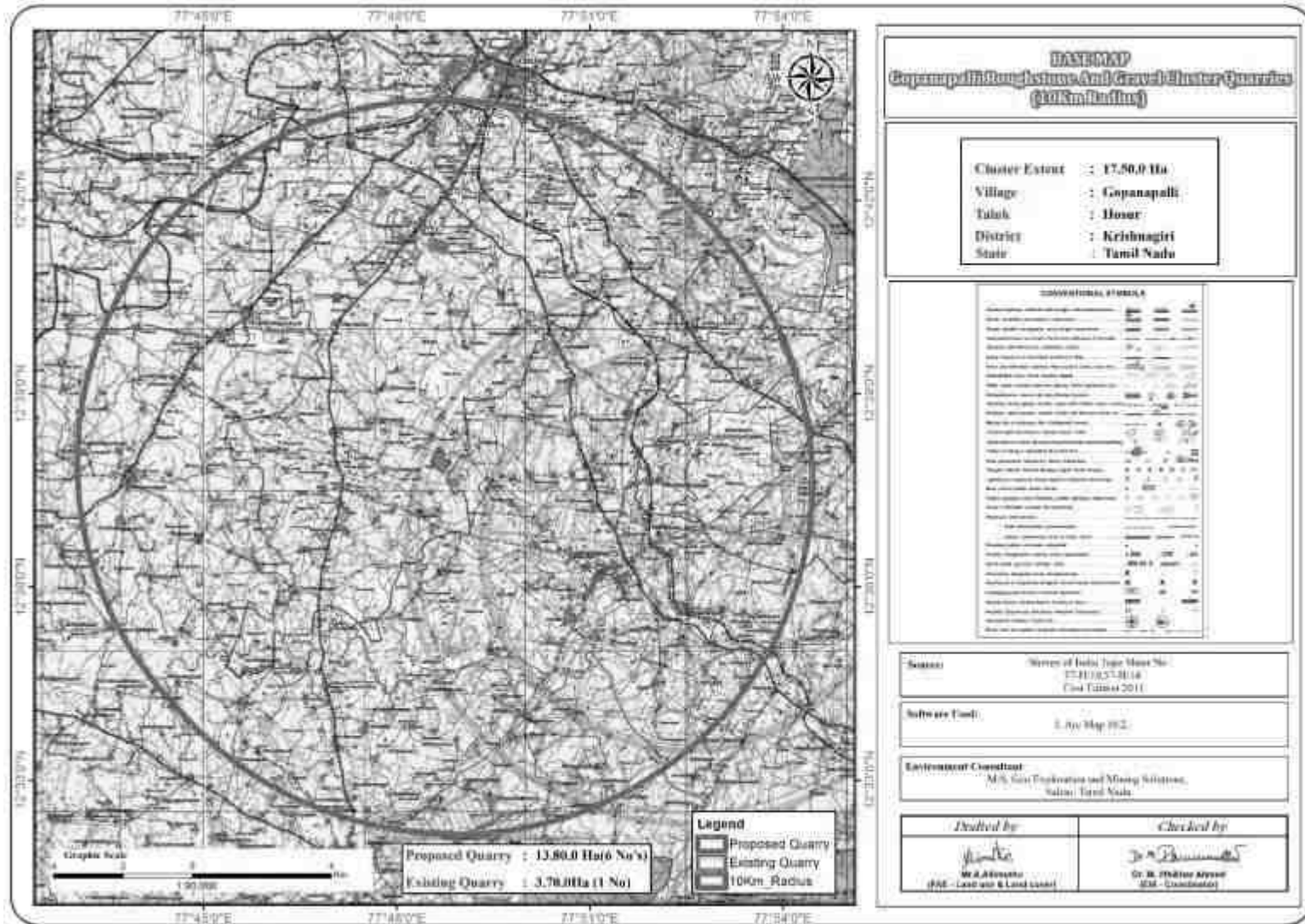
The lease applied area is about 28km Northwestern side of Krishnagiri 19km Shoolagiri-Kelamangalam and 5.4km Northwestern side of Kelamangalam Village.



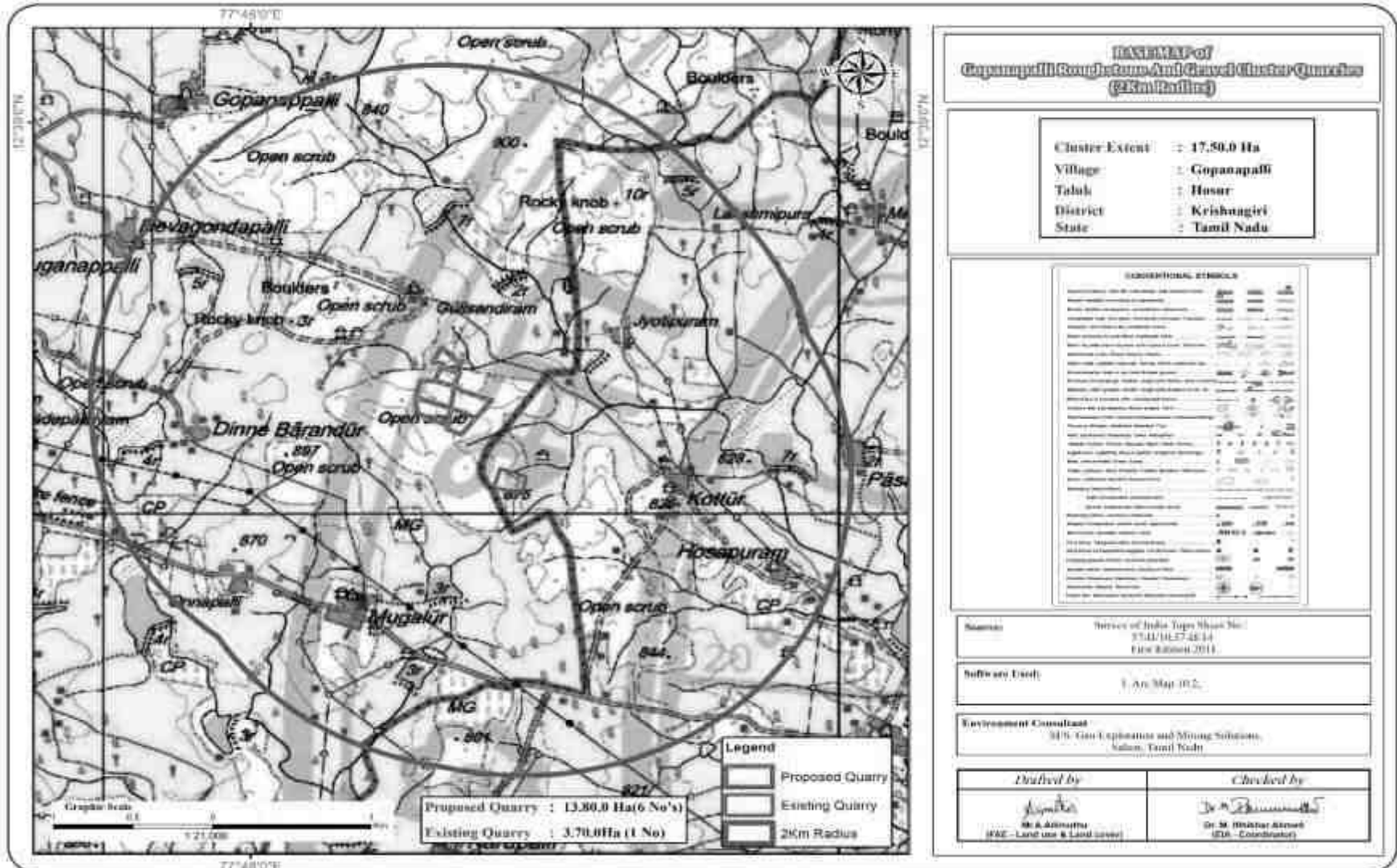
**FIG1.1A KEY MAP SHOWING THE LOCATION OF THE PROJECT SITE**



**FIGURE 1.2: TOPOSHEET SHOWING LOCATION OF THE PROJECT SITE AROUND 10 KM RADIUS**



**FIGURE 1.3: TOPOSHEET SHOWING LOCATION OF THE PROJECT SITE AROUND 2 KM RADIUS**



## **1.4 Environmental Clearance**

The Environmental Clearance process for the project will comprise of four stages. These stages in sequential order are given below: -

1. Screening
2. Scoping
3. Public consultation &
4. Appraisal

### **SCREENING –**

#### **Project – P1 –**

- Krishnagiri District, Extraordinary Gazette notification No.15 & 20, dated 14.03.2022 & 28.03.2022
- Precise Area Communication was issued by the District Collector, Krishnagiri vide Rc.No.535/2022/Mines, Dated: 22.04.2022 for a period of 10 Years and the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Deputy Director, Department of Geology and Mining, Krishnagiri District vide Rc.No. 535/2022/Mines, Dated: 18.07.2022.
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. **SIA/TN/MIN/418191/2023, Dated:15.02.2023.**

#### **Project – P2 –**

- Krishnagiri District, Extraordinary Gazette notification No.15 & 20, dated 14.03.2022 & 28.03.2022
- Precise Area Communication was issued by the District Collector, Krishnagiri District vide 537/2022/Mines, Dated:22.04.2022. for a period of 10 Years and the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Deputy Director, Department of Geology and Mining, Krishnagiri District vide Rc.No.228/2019/Mines Dated: 30.07.2019.
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. **SIA/TN/MIN/418435/2023, Dated:15.02.2023.**

### **SCOPING –**

#### **Project – P1 –**

- The proposal was placed in 382<sup>nd</sup> SEAC meeting held on 09.06.2023 and the committee recommended for issue of ToR.
- The proposal was considered in 632<sup>nd</sup> SEIAA meeting held on 21.06.2023-22.06.2023 and issued ToR vide **Lr No. SEIAA-TN/F.No.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023.**

#### **Project – P2 –**

- The proposal was placed in 382<sup>nd</sup> SEAC meeting held on 09.06.2023 and the committee recommended for issue of ToR.
- The proposal was considered in 632<sup>nd</sup> SEIAA meeting held on 21.06.2023-22.06.2023 and issued ToR vide **Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023.**

## Public Consultation –

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA/ EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

## Appraisal

Appraisal is the detailed scrutiny by the State Expert Appraisal Committee (SEAC) of the application and other documents like the final EIA & EMP Report, outcome of the Public Consultations including Public Hearing Proceedings, submitted by the proponent to the regulatory authority concerned for grant of environmental clearance.

The report has been prepared using the following references:

- Guidance Manual of Environmental Impact Assessment for Mining of Minerals, Ministry of Environment and Forests, 2010
- EIA Notification, 14<sup>th</sup> September, 2006
- ToR vide Lr No. SEIAA-TN/F.No.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023- P1
- ToR vide Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023- P2

Approved Mining of P1 to P2 the Rough Stone quarry projects

### 1.5 Post Environment Clearance Monitoring

The Project Proponents in the Cluster will submit a half-yearly compliance report in respect of stipulated Environmental Clearance terms and conditions to MoEF & CC Regional Office & SEIAA after grant of EC on 1<sup>st</sup> June and 1<sup>st</sup> December of every year.

### 1.6 Generic Structure of EIA Document

The overall contents of the EIA report follow the list of contents prescribed in the EIA Notification 2006 and the “Environmental Impact Assessment Guidance Manual for Mining of Minerals” published by MoEF & CC. A brief description of each Chapter is presented in Table No. 1.5.

**TABLE 1.5 – STRUCTURE OF THE EIA REPORT**

S. No	Chapters	Title	Particulars
1	Chapter 1	Introduction	Presents, an Introduction along with Scope and Objective of this EIA/EMP Studies
2	Chapter 2	Project Description	Presents the Technical Details of the Project
3	Chapter 3	Description of Environment	Presents the Baseline Status for various Environmental Parameters in the Study Area for One Season (3 Months)

4	Chapter 4	Anticipated Environmental Impacts and Mitigation Measures	Presents the Identification, Prediction and Evaluation of overall Environmental Impacts due to the Proposed Projects Activities. Also presents Proposed Mitigation Measures.
5	Chapter 5	Analysis of Alternatives (Technology & Site)	Presents Analysis of alternatives with respect to site
6	Chapter 6	Environment Monitoring Programme	Present details of post project environment monitoring
7	Chapter 7	Additional Studies	Presents Public Consultation, Risk Assessment and Disaster Management Plan
8	Chapter 8	Project Benefits	Presents project benefits as: Improvements in the Physical Infrastructure, Social Infrastructure Employment Potential –Skilled; Semi-Skilled and Unskilled etc.,
9	Chapter 9	Cost Benefit Analysis	Environmental Cost Benefit Analysis has not been recommended at Scoping Stage – thus no analysis carried out separately in this EIA/EMP Report.
10	Chapter 10	Environmental Management Plan	Description of the administrative aspects to ensure the Mitigation Measures are implemented and their effectiveness monitored, after approval of the project.
11	Chapter 11	Summary & Conclusion	Summary of the EIA Report
12	Chapter 12	Disclosure of Consultants Engaged	Disclosure of the Consultants

### 1.7 Scope of the Study

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the summer season (**March 2023 – May 2023**) for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

**TABLE 1.6 – ENVIRONMENT ATTRIBUTES**

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub>	24 hourly samples twice a week for three months at 8 locations
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station, Krishnagiri

3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 4 ground water and 2 surface water locations once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	At 8 locations data monitored once for 24 hours during EIA study.
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk assessment done for the mining associated activities

Source: Field Monitoring Data

The data has been collected as per the requirement of the ToR issued by SEIAA – TN and Standard ToR Published by MoEF & CC.

### 1.7.1 Regulatory Compliance & Applicable Laws/Regulations

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
  - Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance
  - The Mining Plan of Rough Stone quarry has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
    - ToR vide Lr No. SEIAA-TN/F.No.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023- P1
    - ToR vide Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023- P2
- Approved Mining of P1 to P2 the Rough Stone quarry projects



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## CHAPTER – 2: PROJECT DESCRIPTION

### 2.0 General

The Proposed Rough Stone Quarries requires Environmental Clearance. There are two proposed quarries forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1<sup>st</sup> July 2016 and the total extent of cluster is 17.50.0 ha.

As the extent of cluster are more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

### 2.1 Description of the Project

The proposed projects are site specific and there is no additional area required for this project. There is no effluent generation/discharge from the proposed quarries.

Method of mining is common for all the proposed quarries in the cluster. Rough Stone quarries are proposed to be excavated by opencast mechanized method involving 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 quarry from pithead to the nearby crushers and rock breakers to avoid secondary blasting.

### 2.2 Location of the Project

- The Cluster quarries are located in Gopanapalli village, Hosur taluk, Krishnagiri District, Tamil Nadu State.
- The project falls in Toposheet No: 57 H/14. The cluster areas fall in the Latitude between 12<sup>o</sup> 37'51.9387"N to 12<sup>o</sup>38'00.5729"N and Longitude between 77<sup>o</sup> 48'33.7458"E to 77<sup>o</sup> 48'49.1130"E.
- The projects under the cluster are classified as Poramboke land (Non-Forest Land) & does not fall within 10 km radius of any Eco – sensitive zone, Wild life Sanctuary, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves.

**TABLE 2.1: SITE CONNECTIVITY TO THE CLUSTER QUARRIES**

Nearest Roadway	NH948A- Thalli – Attibele Road - 6.6km-NW SH17A- Hosur – Denkanikottai Road –2.6km-SW
Nearest Village	520m-N
Nearest Town	Hosur – 15.0Km – NE
Nearest Railway	Hosur Railway station - 15.0km-NE
Nearest Airport	Bangalore Airport – 51Km - NW

Source: Google image, Survey of India Toposheet

The cluster quarries coners coordinates are given below.

**TABLE 2.2 – BOUNDARY CO-ORDINATES OF PROPOSED PROJECTS**

BOUNDARY CO-ORDINATES OF PROJECT – P1		
Corner Nos.	Latitude	Longitude
1	12 <sup>0</sup> 37'56.7500"N	77 <sup>0</sup> 48'33.7458"E
2	12 <sup>0</sup> 38'00.5729"N	77 <sup>0</sup> 48'34.6758"E
3	12 <sup>0</sup> 38'00.5003"N	77 <sup>0</sup> 48'37.4098"E
4	12 <sup>0</sup> 37'59.2819"N	77 <sup>0</sup> 48'41.4624"E
5	12 <sup>0</sup> 37'54.3668"N	77 <sup>0</sup> 48'40.8039"E
BOUNDARY CO-ORDINATES OF PROJECT – P2		
Corner Nos.	Latitude	Longitude
1	12 <sup>0</sup> 37'54.3668"N	77 <sup>0</sup> 48'40.8039"E
2	12 <sup>0</sup> 37'59.2819"N	77 <sup>0</sup> 48'41.4624"E
3	12 <sup>0</sup> 37'58.0648"N	77 <sup>0</sup> 48'43.2944"E
4	12 <sup>0</sup> 37'56.0941"N	77 <sup>0</sup> 48'49.1130"E
5	12 <sup>0</sup> 37'51.9387"N	77 <sup>0</sup> 48'45.9251"E

Source: Mine Lease Plan Plate of the respective proposals

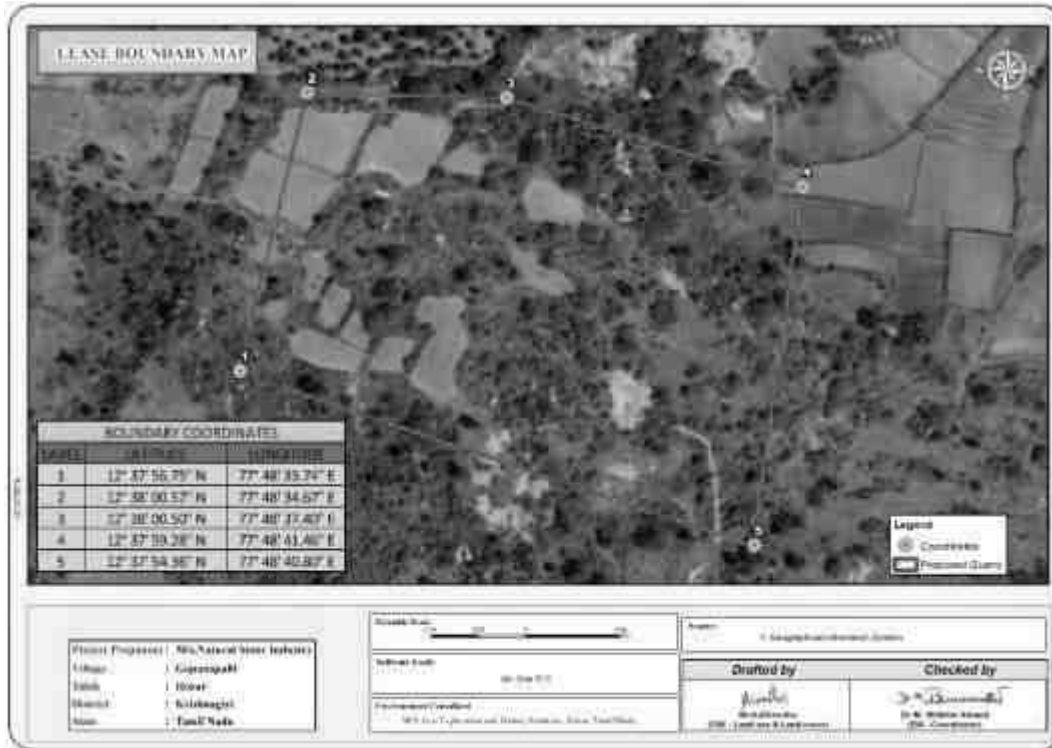
**FIGURE 2.1: TOPOGRAPHICAL VIEW OF THE PROJECT SITE-P1**



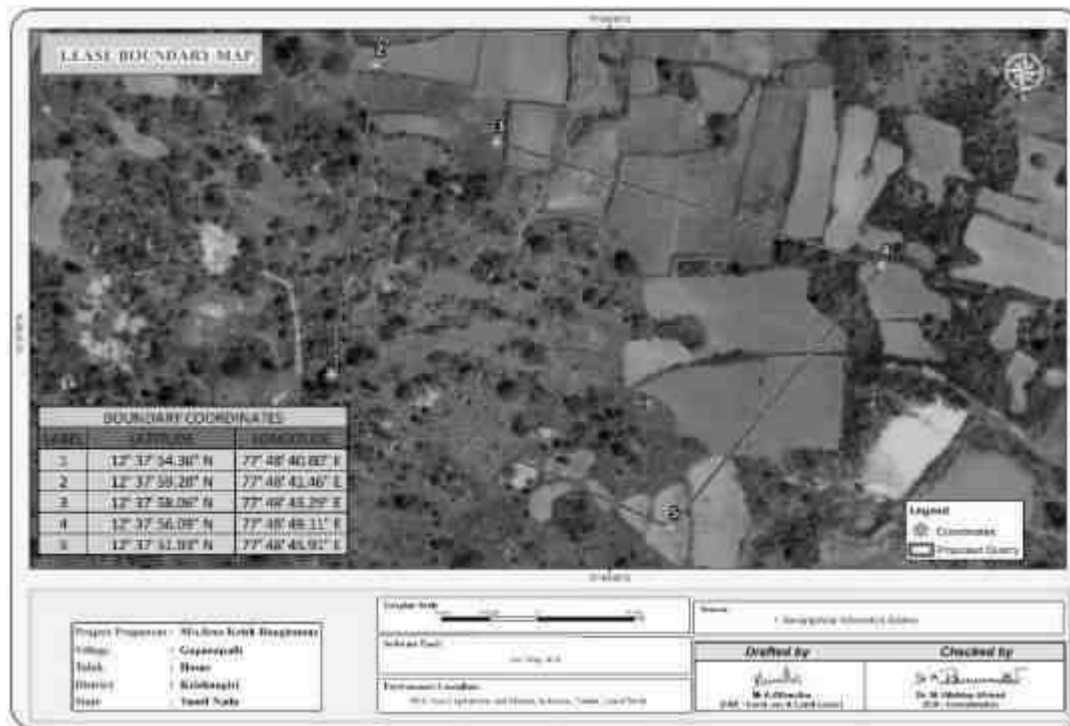
**FIGURE 2.1A: TOPOGRAPHICAL VIEW OF THE PROJECT SITE-P2**



**FIGURE 2.2: SHOWING GOOGLE IMAGE ROUGH STONE QUARRY PROJECT AREAS**



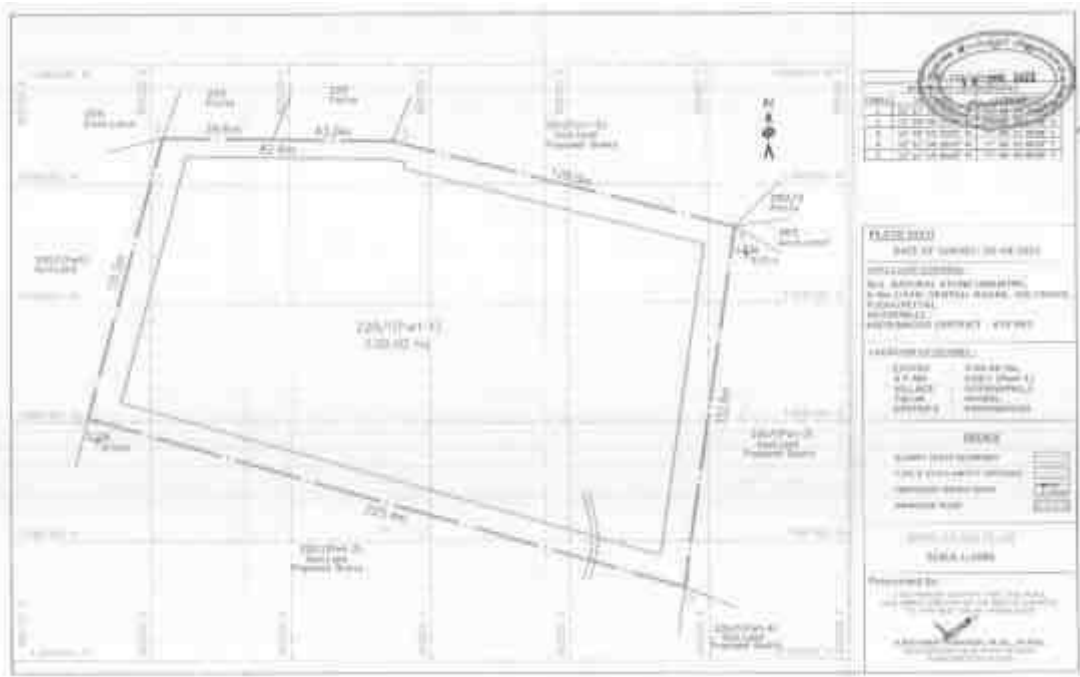
**SATELLITE IMAGERY OF P1**



**SATELLITE IMAGERY OF P2**

**FIGURE 2.3: QUARRY LEASE PLAN**

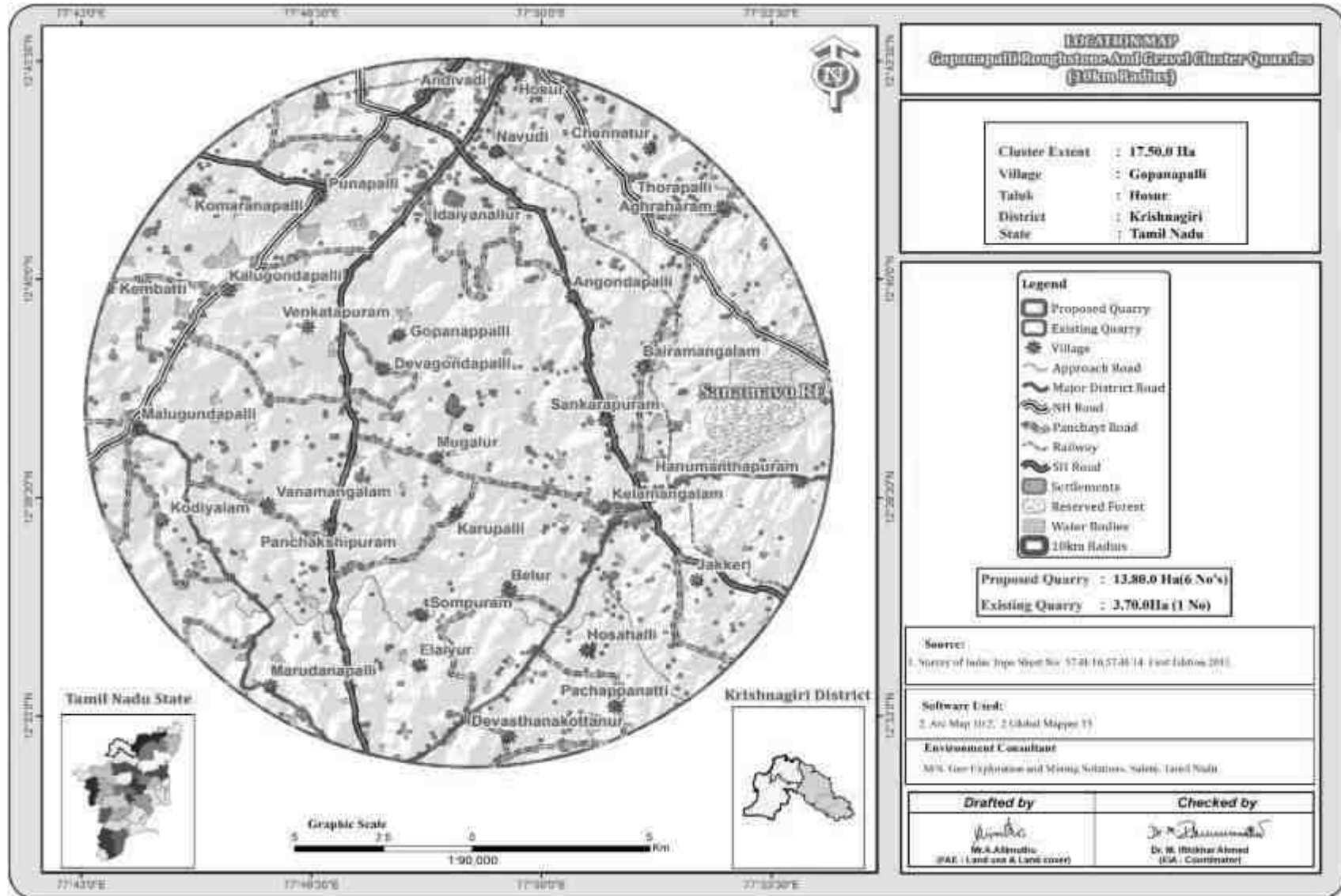
**P1- M/s. Natural stone Industry**



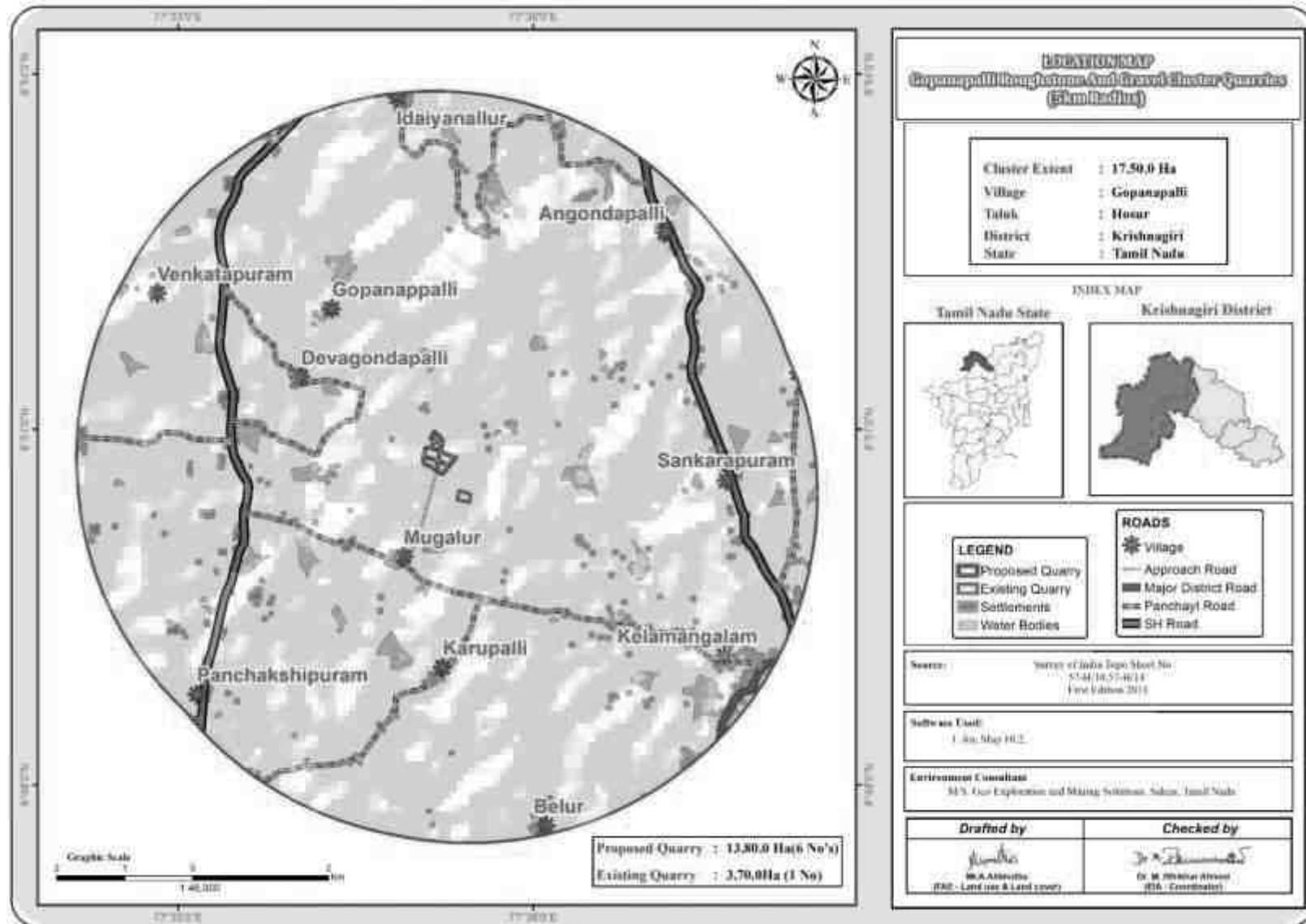
**P2- M/s.Sree Krish Roughstone**



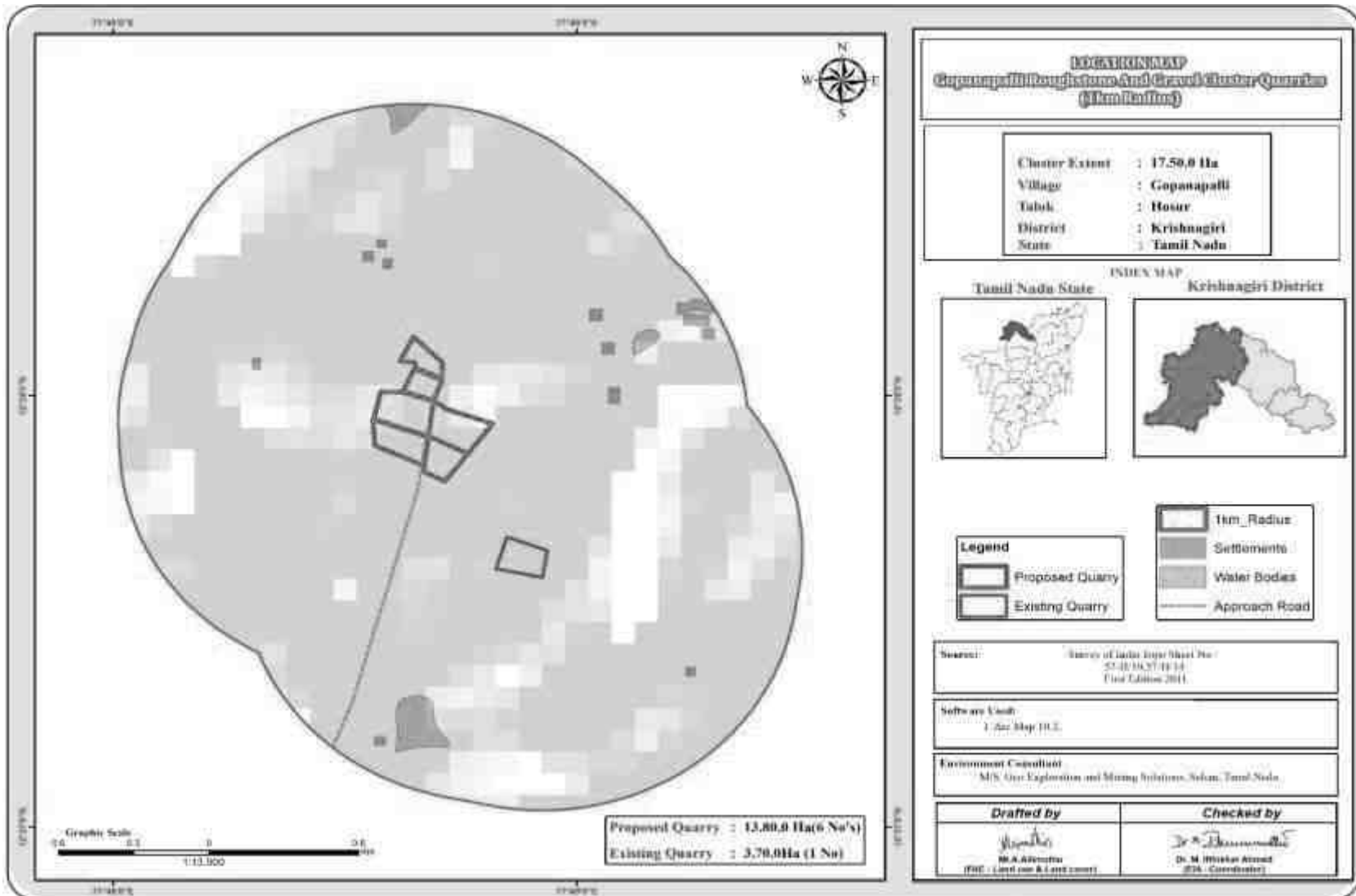
**FIGURE 2.4: DIGITIZED MAP OF THE STUDY AREA (10 KM RADIUS FROM PROJECT SITE)**



**FIGURE 2.5: DIGITIZED MAP OF THE STUDY AREA (5 KM RADIUS FROM PROJECT SITE)**



**FIGURE 2.6: DIGITIZED MAP OF THE STUDY AREA (1 KM RADIUS FROM PROJECT SITE)**



### 2.2.1 Project Area

- (i) All the projects under cluster are site specific, there is No beneficiation or processing proposed inside the project area.
- (ii) There is no forest land involved in the proposed project area and is devoid of major vegetation and trees.

**TABLE 2.3 – LAND USE PATTERN OF THE PROPOSED PROJECTS**

<i>M/s. Natural stone Industry -P1</i>		
<i>Description</i>	<i>Present area (Ha)</i>	<i>Area at the end of this quarrying period (Ha)</i>
Area under Quarrying	Nil	2.43.0
Infrastructure	Nil	0.01.0
Roads	Nil	0.01.0
Green Belt	Nil	0.55.0
Unutilized Area	3.00.0	Nil
<b>Grand Total</b>	<b>3.00.0</b>	<b>3.00.0</b>
<i>M/s.Sree Krish Roughstone-P2</i>		
<i>Description</i>	<i>Present area (Ha)</i>	<i>Area at the end of this quarrying period (Ha)</i>
Area under Quarrying	Nil	2.33.0
Infrastructure	Nil	0.01.0
Roads	Nil	0.01.0
Green Belt	Nil	0.65.0
Unutilized Area	3.00.0	Nil
<b>Grand Total</b>	<b>3.00.0 Ha</b>	<b>3.00.0 Ha</b>

Source: Approved Mining Plan

### 2.2.2 Size or Magnitude of Operation

**TABLE 2.4: OPERATIONAL DETAILS FOR PROPOSED PROJECTS**

<b>OPERATIONAL DETAILS FOR PROJECT – P1</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone quarry (m<sup>3</sup>) (10 Year Plan period)</b>	<b>Top Soil (m<sup>3</sup>) (1 Years Plan period)</b>
Geological Resources	18,80,592m <sup>3</sup>	92,442m <sup>3</sup>
Mineable Reserves	9,04,638m <sup>3</sup>	75,438 m <sup>3</sup>
Production for five-year plan period After bench reduction	<b>6,02,588m<sup>3</sup></b>	<b>75,438 m<sup>3</sup></b>
Production for Next five-year plan period After bench reduction	<b>3,02,050m<sup>3</sup></b>	
Mining Plan Period / Lease Applied Period	10 Years	
Number of Working Days	300 Days	
Production per day	302	251
No of Lorry loads (12m <sup>3</sup> per load)	25	21
Total Depth of Mining	66m (3m Topsoil +63m Rough stone)	
<b>OPERATIONAL DETAILS FOR PROJECT – P2</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone quarry (m<sup>3</sup>) (10 Year Plan period)</b>	<b>Top Soil (m<sup>3</sup>) (1 Years Plan period)</b>



Geological Resources	1715980 m <sup>3</sup>	88,620m <sup>3</sup>
Mineable Reserves	7,25,186m <sup>3</sup>	68,760m <sup>3</sup>
Production for five years Plan After bench reduction	5,12,190 m <sup>3</sup>	68,760m <sup>3</sup>
Production for Next five-year plan period After bench reduction	212996 m <sup>3</sup>	
Mining Plan Period / Lease Applied Period	10 Years	
Number of Working Days	300 Days	
Production per day	242	229
No of Lorry loads (12m <sup>3</sup> per load)	20	19
Total Depth of mining	66m (3m Topsoil +63m Rough stone)	

Source: approved mining plan

\* Topsoil formation are proposed to excavate for first year only

## 2.3 GEOLOGY

### 2.3.1 Regional Geology

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is represented by Khondalite Group of rocks, Charnockite Group of rocks, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite which occur as small patches. The migmatite complex includes garnetiferous quartzofeldspathic gneiss and hornblende biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous quartzite and associated quartzo-feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes. The Charnockite Group occupies a major part of the south-west portion of this district with small bands of garnetiferous quartzo-feldspathic gneiss, Granite gneiss and dolerite dykes. The North-East and Northern part of the district mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

The Alkaline Complex is represented by epidote-hornblende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite body N15°E – S15°W with vertical dipping

The general geological sequences of the rocks in this area are given below:

AGE	FORMATION
Recent	- Quaternary formation (Gravel)
-----Unconformity-----	
Archaean	- Charnockite Peninsular Gneiss complex

### 2.3.2 Local Geology:

The study area follows the regional trend and mainly comprises of Hard Rock Formation as a homogeneous formation / Batholith formation of Charnockite. The project area is hilly terrain, sloping toward South with a highest altitude of 915m AMSL. The project area is covered with topsoil formation of 1m to 2m thickness; Massive Charnockite formation is found after 2 m topsoil formation which is clearly inferred from the existing quarry pit.

### 2.3.3 Hydrogeology

The origin, occurrence and movement of groundwater are controlled by geological setup of a terrain. During the study it is inferred that the entire cluster area is a Hard rock terrain and the low -resistance encountered at the depth between 65-70 m bgl, hence it is assumed that the possibility of Ground water occurrence will be below this level and it also proved that this hard batholith above 60 m will not encounter any subsurface water.

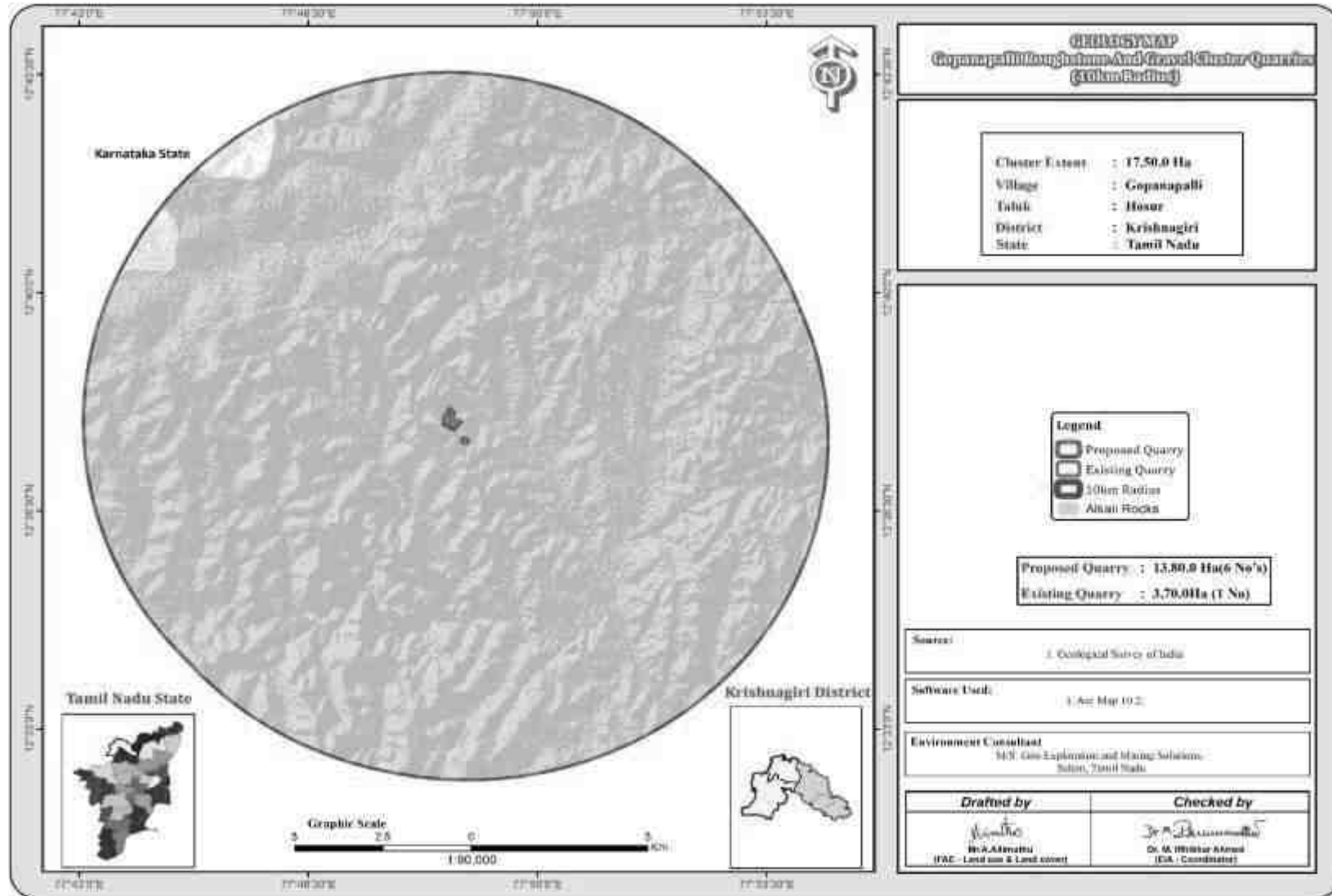
In the geophysical study it has been clearly inferred that the depth of the quarrying operation will not intersect the ground water table.

**TABLE 2.5: GROUND WATER LEVEL VARIATIONS OF KRISHNAGIRI DISTRICT**

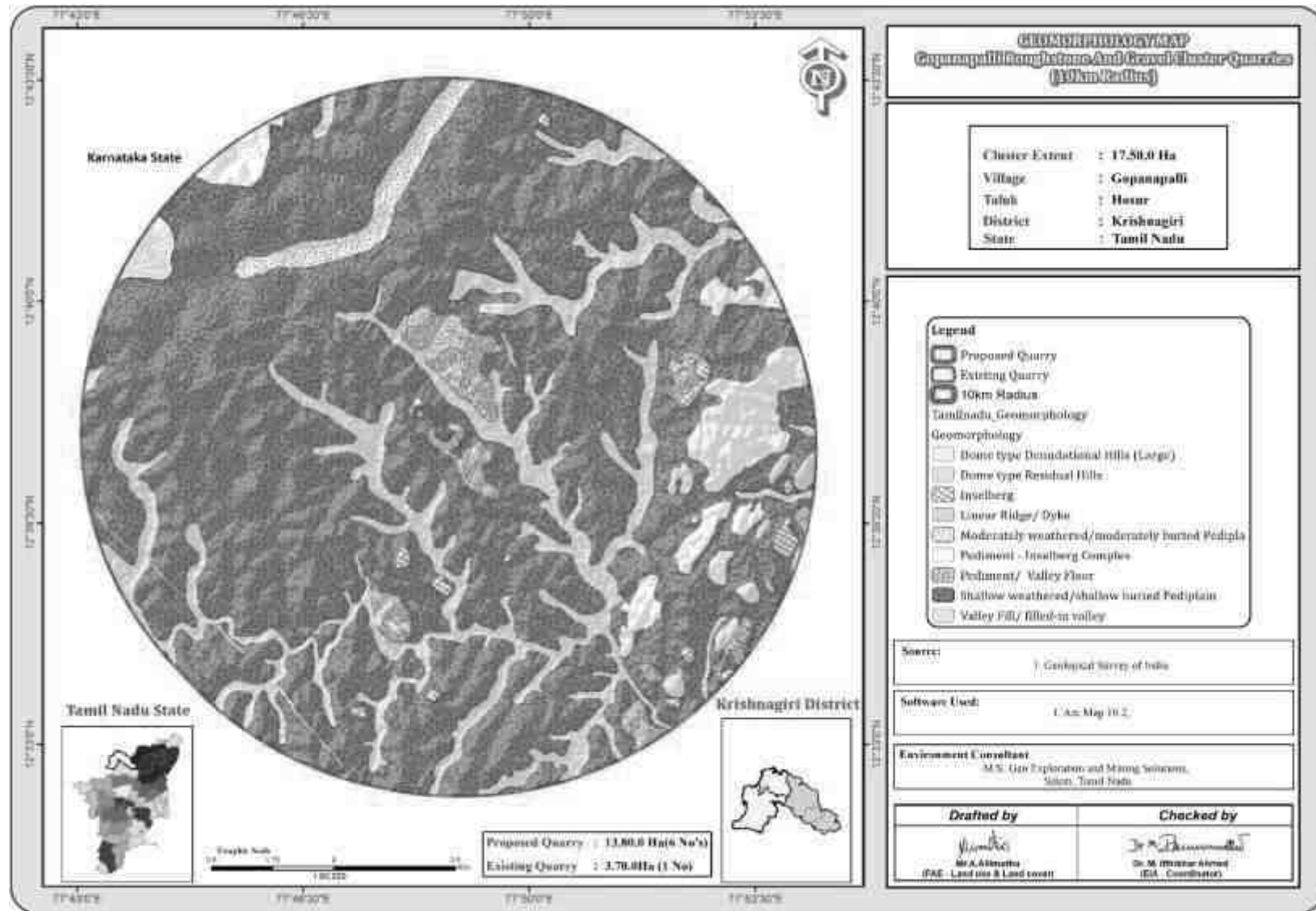
Jan 2017	May 2017	Jan 2018	May 2018	Jan 2019	May 2019	Jan 2020	May 2020	Jan 2021	May 2021	5 Years Pre-Monsoon Average	5Years Post Monsoon Average
12.1	14.9	6.3	8.1	11.0	12.7	8.9	11	8.4	10.6	9.5	7.9

Source: <https://www.twadboard.tn.gov.in/content/Krishnagiri>

**FIGURE 2.7: REGIONAL GEOLOGY MAP**

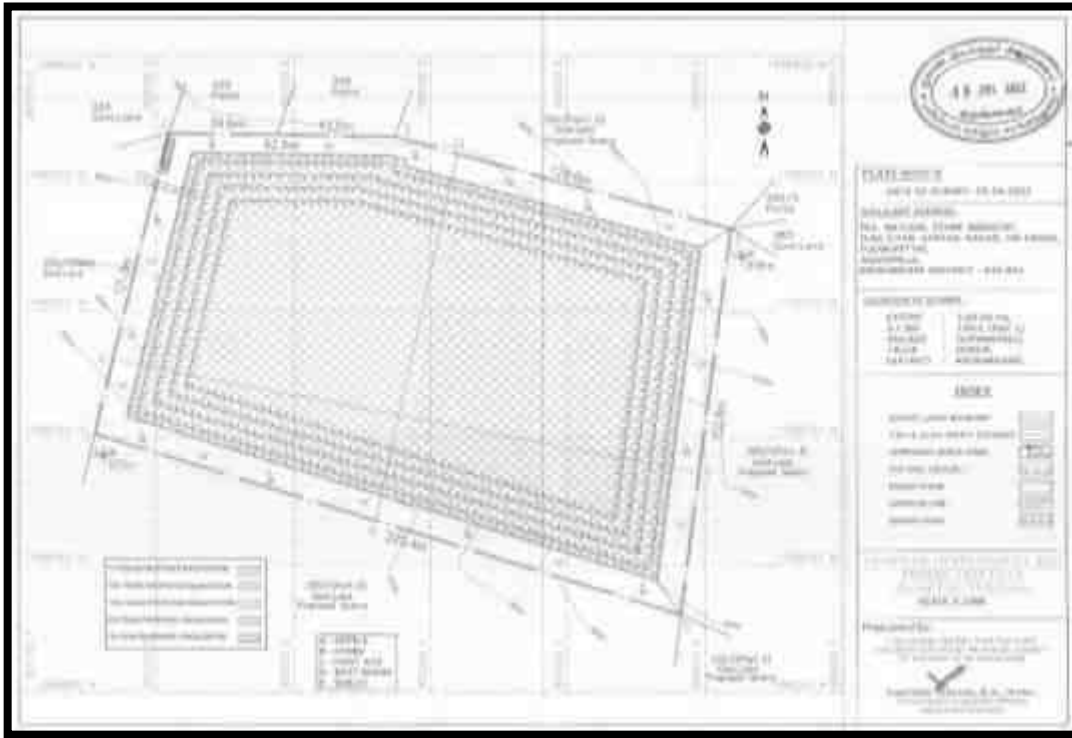


**FIGURE 2.8: GEOMORPHOLOGY MAP**

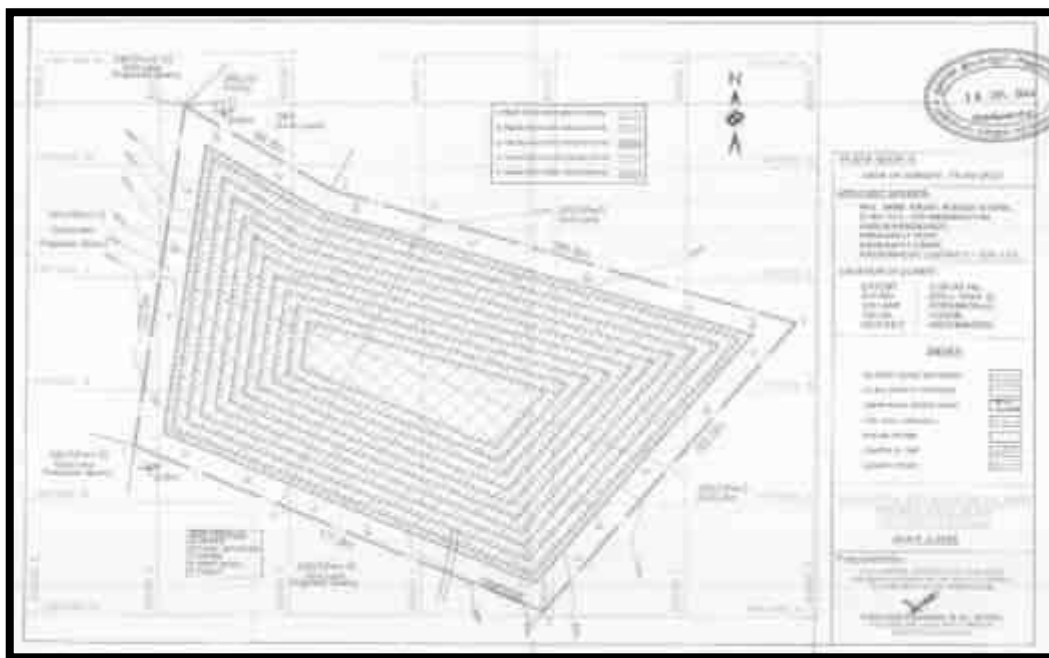


**FIGURE 2.9: TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT PRODUCTION PLAN AND SECTION**

M/s. Natural stone Industry – P1



M/s. Sree Krish Roughstone-P2



## 2.4 RESOURCES AND RESERVES

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

Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated).

**TABLE 2.6: AVAILABLE GEOLOGICAL RESOURCES OF PROPOSED PROJECTS- P1 & P2**

Description	P1		P2	
	Rough Stone quarry	Topsoil	Rough Stone quarry	Topsoil
<b>Geological Resource</b>	18,80,592m <sup>3</sup>	92,442m <sup>3</sup>	17,15,980 m <sup>3</sup>	88,620m <sup>3</sup>
<b>Mineable Reserves</b>	9,04,638m <sup>3</sup>	75,438 m <sup>3</sup>	7,25,186m <sup>3</sup>	68,760m <sup>3</sup>

Source: Approved Mining Plan

**TABLE 2.7: YEAR-WISE PROPOSAL FOR FIRST FIVE YEARS PRODUCTION PLAN-P1**

YEAR	ROUGH STONE QUARRY (m <sup>3</sup> )	TOPSOIL (m <sup>3</sup> )
<b>I</b>	-	75,438
<b>II</b>	132678	-
<b>III</b>	160440	-
<b>IV</b>	139370	-
<b>V</b>	119700	-
<b>VI</b>	50400	-
<b>FIRST FIVE YEARS TOTAL</b>	<b>6,02,588</b>	<b>75,438</b>
<b>VI</b>	51030	-
<b>VII</b>	84560	-
<b>VIII</b>	69090	-
<b>IX</b>	55020	-
<b>X</b>	42350	-
<b>SECOND FIVE YEARS TOTAL</b>	<b>3,02,050</b>	-

Source: Approved Mining Plan

**TABLE 2.8: YEAR-WISE PROPOSAL FOR FIRST FIVE YEARS PRODUCTION PLAN-P2**

YEAR	ROUGH STONE QUARRY (m <sup>3</sup> )	TOPSOIL (m <sup>3</sup> )
<b>I</b>	-	68760
<b>II</b>	72772	-
<b>III</b>	72772	-
<b>IV</b>	125454	-
<b>V</b>	106764	-
<b>VI</b>	89474	-
<b>FIRST FIVE</b>	<b>5,12,190</b>	<b>68,760</b>

<b>YEARS TOTAL</b>		
<b>VII</b>	36792	
<b>VIII</b>	59094	-
<b>IX</b>	46004	-
<b>X</b>	34314	-
<b>SECOND FIVE YEARS TOTAL</b>	<b>2,12,996</b>	<b>37,857</b>

Source: Approved Mining Plan

### Disposal of Waste

There is no waste anticipated in this Rough Stone quarry quarrying operation. The entire quarried out materials will be utilized (100%).

### Conceptual Mining Plan/ Final Mine Closure Plan

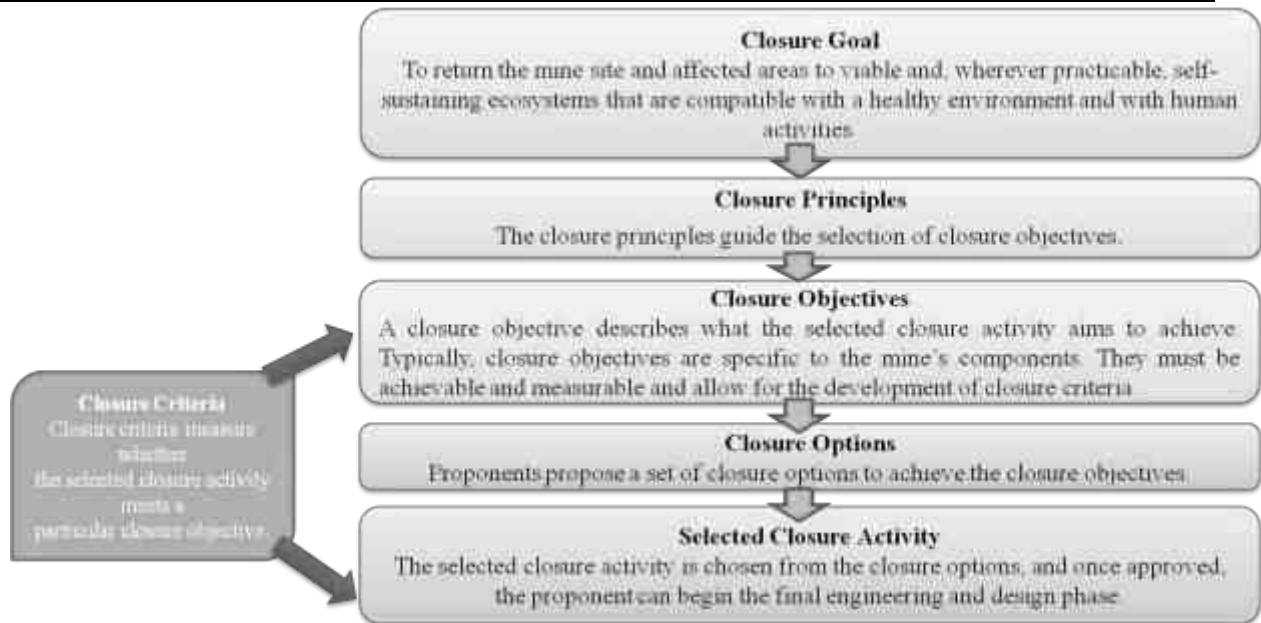
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

**TABLE 2.9: ULTIMATE PIT DIMENSIONS- P1& P2**

<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max) (m)</b>
<b>I</b>	198	127	54m
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max) (m)</b>
<b>I</b>	191	120	56 m Agl

Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void 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 developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem
- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principle closure objectives are for rehabilitated mines to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.



### Closure Objectives

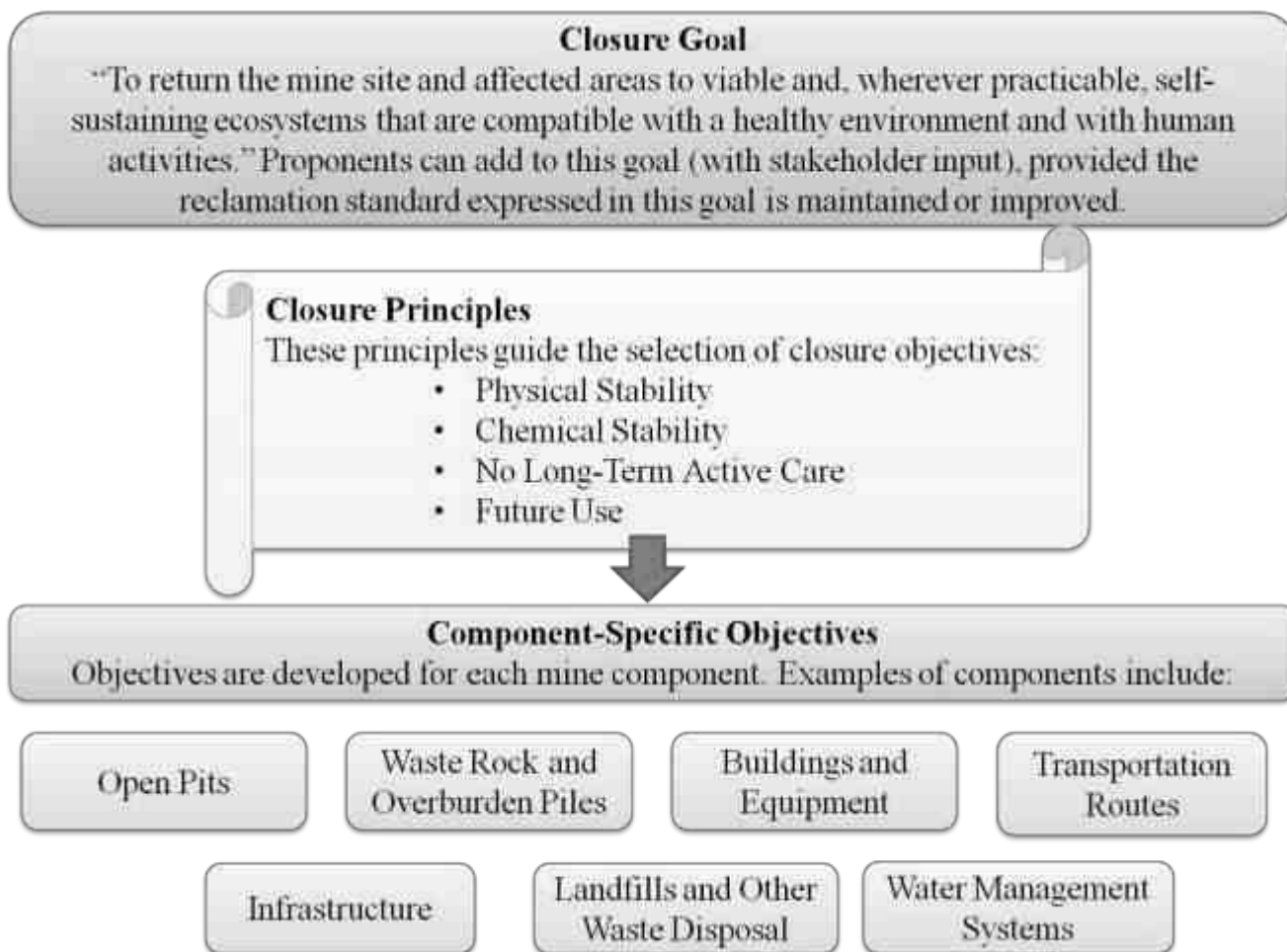
- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- For flooded pits, in-pit aquatic habitat has been established where practical and feasible.
- Emergency access and escape routes from flooded pits for humans and wildlife are in place.
- Dust levels are safe for people, vegetation, aquatic life, and wildlife.

### Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- There is a river on southern side of the project area. The river will not be hindered by any of mine closure activities
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1<sup>st</sup> bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure



- There will be a positive change in the environmental and ecology due to the mine closure



#### Post-Closure Monitoring –

The purpose of post-closure monitoring with respect to open pit mine workings is to ensure the attainment of closure objectives.

- Monitor physical and geotechnical stability of remnant pit walls.
- Monitor the ground regime in pit walls to confirm achievement of design objectives.
- Monitor water level in pit to confirm closure objectives regarding fish, fish habitat, and wildlife safety are being achieved.
- Sample water quality and quantity at controlled pit discharge points.
- Identify and test unanticipated areas where water management is an issue.
- Inspect integrity of barriers such as berms & fences.
- Monitor wildlife interactions with barriers to determine effectiveness.
- Inspect aquatic habitat in flooded pits where applicable.
- Monitor dust levels.

**TABLE 2.10: MINE CLOSURE BUDGET-P1**

ACTIVITY	YEAR										RATE	COST (Rs.)
	I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone Plantation in the quarried out top benches, approach road and panchayat road	1800										@100 Rs Per sapling Including Maintenance	1,80,000
	180000											
Wire Fencing for 700 Mtrs length	2,10,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	2,10,000
Garland Drain with settling traps for 600 Mtrs length	180,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	1,80,000
<b>Total</b>												<b>5,70,000</b>

**TABLE 2.11: MINE CLOSURE BUDGET-P2**

ACTIVITY	YEAR										RATE	COST (Rs.)
	I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone Plantation in the quarried out top benches, approach road and panchayat road	1800										@100 Rs Per sapling Including Maintenance	1,80,000
	180000											
Wire Fencing for 717 Mtrs length	2,15,100	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	2,15,100
Garland Drain with settling traps for 650 Mtrs length	1,95,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	1,95,000
<b>Total</b>												<b>5,90,100</b>

Source: Proposed by FAE's and EC

## 2.5 Method of Mining

The method of mining is common for all the proposed projects – The method of mining is Opencast Mechanized Mining Method is being proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. However, as far as the quarrying of Rough Stone quarry is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic 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.

The top layer of overburden (Topsoil) will be Excavate directly by Hydraulic Excavators and loaded into tippers directly and sold to needy customers. The Rough Stone quarry is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavators attached with Rock Breakers unit will be deployed for breaking large boulders to required fragmented sizes to avoid secondary blasting and hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone quarry into the tippers and then the stone is transported from pithead to the nearby crushers.

### 2.5.1 Drilling

Drilling will be carried out as per parameters given below: -

Spacing – 1.2m, Burden –1.0, Depth of hole - 1.5m

### 2.5.2 Blasting

Blasting will be done as per details below: -

- Controlled blasting parameter: -
  - Spacing – 1.2m
  - Burden – 1.0 m
  - Depth of hole – 1.5m
  - Charge per hole – 50grams
  - Powder factor – 6.0 tonnes/kg
  - Dia of hole – 30-32 mm

Details of blasting design and parameters are discussed in approved mining plan.

Volume of Rough Stone quarry will be excavated from one hole	=	3 Tonnes
Total Volume from two proposed quarries	=	<b>1,629,824 m<sup>3</sup></b>
	=	<b>1,629,824/10</b>
	=	<b>1,62,982.4/300</b>
	=	543* 2.6
	=	1,413Tonnes per day
Therefore, Number of Holes per day	=	1413 /3
	=	471 Holes per day (for 2 Quarries)

**Type of Explosives to be used –**

Slurry explosives (An explosive material containing substantial portions of a liquid, oxidizers, and fuel, plus a thickener), NONEL / Electric Detonator & Detonating Fuse.

**2.5.3 Extent of Mechanization****TABLE 2.12 PROPOSED MACHINERY DEPLOYMENT**

<b>PROPOSAL – P1</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	6	1.2m to 2.0m	Compressed air
2	compressor	2	400 psi	Diesel Drive
3	Hydraulic Excavator	2	300 HP	Diesel Drive
4	Tippers	2	20 Tonnes	Diesel Drive
<b>PROPOSAL – P2</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	6	1.2m to 2.0m	Compressed air
2	compressor	2	400 psi	Diesel Drive
2	Hydraulic Excavator	2	400psi	Diesel Drive
3	Tippers	2	300 HP	Diesel Drive

Source: Approved Mining Plan of the respective projects.

**2.6 General Features****2.6.1 Existing Infrastructures**

Infrastructures like Mine office, Temporary Rest shelters for workers, Latrine and Urinal Facilities are available in the Existing quarries and the same infrastructure as per the Mine Rule will be arranged after the grant of quarry lease in the proposed quarries.

**2.6.1 Drainage Pattern**

The general drainage pattern of the area is dendritic. There are no streams, canals or water bodies crossing within the project area, hence there is no requirement of stream or canals diversion in the near future.

**2.6.2 Traffic Density**

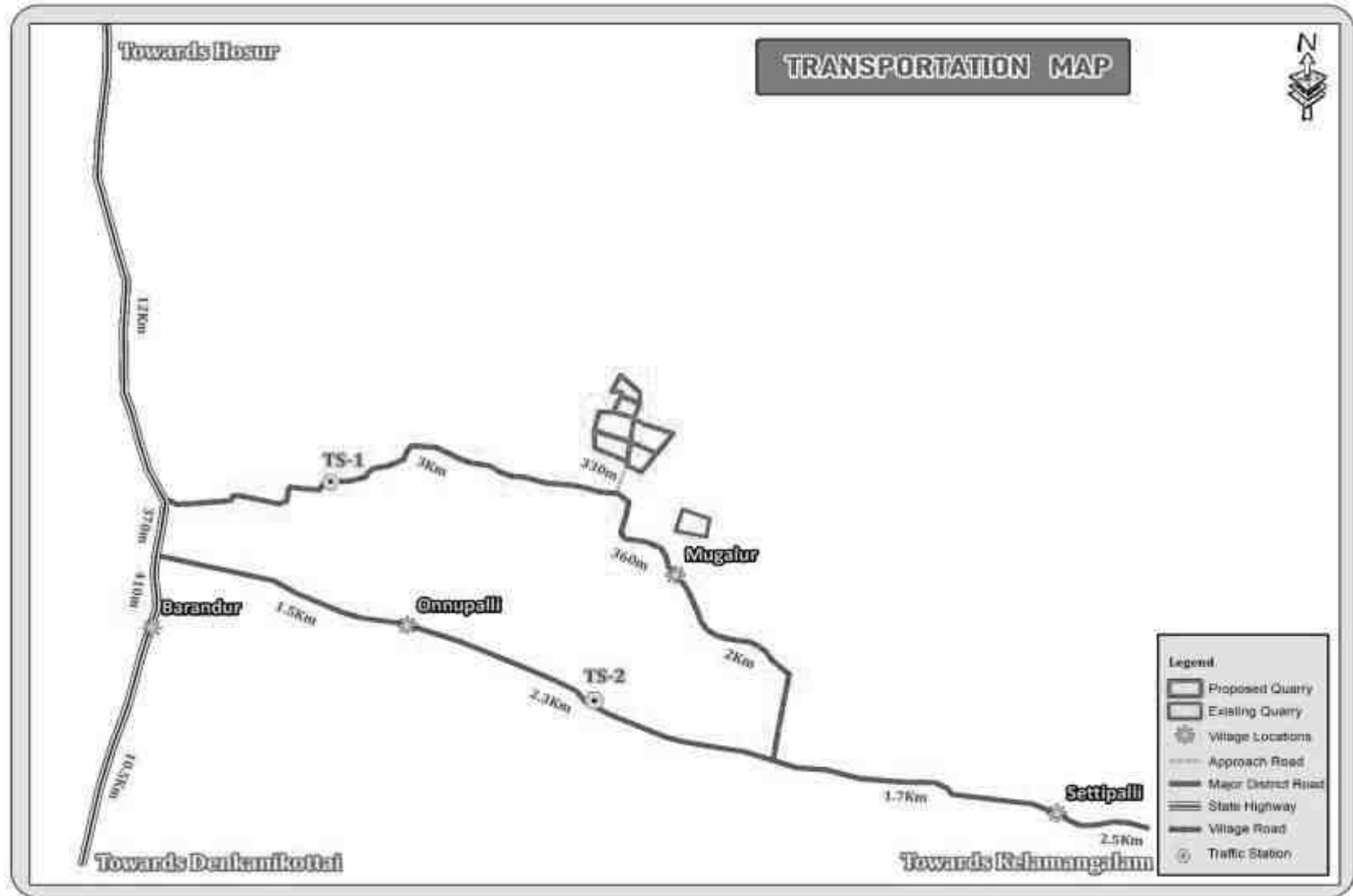
Traffic density measurements were performed as per IRC 1960 Guidelines at three locations based on the transportation route. Traffic density measurement were made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

**TABLE 2.13 – TRAFFIC SURVEY LOCATION'S**

Station code	Station location	Distance and Direction	Type of Road
TS1	Village Road & Mugalur to Barandur Road	1.5Km-SW	Village Road Road
TS2	Onnupalli to Settipalli Road	1.7Km-S	Major District Road

Source: On-site monitoring by GEMS FAE & TM

**FIGURE 2.10: TRAFFIC SURVEY LOCATIONS & TRANSPORTATION ROUTE MAP**



(Source: Survey of India Toposheet)

**TABLE 2.14 – EXISTING TRAFFIC VOLUME**

Station code	HMV (Hourly Average)		LMV hourly average		2/3 Hourly average		Total PCU per hour
	No	PCU	No	PCU	No	PCU	
TS1	45	135	15	45	40	20	200
TS2	75	225	35	105	150	75	400

Source: On-site monitoring by GEMS FAE & TM

- PCU conversion factor for HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 0.5 for Motor Vehicles (2/3 Wheelers)

**TABLE 2.15 – ANTICIPATED TRAFFIC DUE TO THIS PROPOSED PROJECT**

Transportation of Rough Stone quarry per day		
Capacity of trucks	Cumulative Trips	Volume in PCU
10/20 tonnes	65Trips	195

Source: Anticipated based on Approved Mining Plan Production

**TABLE 2.16– SUMMARY OF TRAFFIC VOLUME**

Route	Existing traffic value in PCU	Incremental traffic from the quarry in PCU	Total traffic volume	Hourly Capacity in PCU as per IRC guidelines
Village Road	200	195	395	500
Major District Road	400	195	595	1200

Source: On-site monitoring analysis summary by GEMS FAE & TM

- As per the IRC 1960 this existing District Road can handle 1200 PCU in hour in hour & village road 500 PCU hence there will not be any conjunction due to this proposed transportation.

### 2.6.3 Mineral Beneficiation and Processing

There is no proposal for the mineral processing or ore beneficiation in this project

### 2.6.4 Existing Infrastructure

It is a new quarry, no infrastructural facility available within the project area. The infrastructural facilities to be made after the start of the quarrying operations will be prepared outside limit as per the rules and safe distance to be adopted.

### 2.6.2 Drainage Pattern

The drainage pattern of the area is dendritic – sub dendritic.

## 2.7 Project Requirement

### 2.7.1 Water Source & Requirement

Detail of Total water requirements in KLD as given below:

**TABLE 2.17 – WATER REQUIREMENT FOR THE CLUSTER PROJECT -P1& P2**

<b>PROPOSAL – P1</b>		
*Purpose	Quantity	Source
Dust Suppression	0.7 KLD	From nearby tank
Green Belt development	0.6 KLD	From nearby tank
Drinking and Domestic purpose	0.5 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>1.8 KLD</b>	
<b>PROPOSAL – P2</b>		
*Purpose	Quantity	Source
Dust Suppression	0.7 KLD	From nearby tank
Green Belt development	0.6 KLD	From nearby tank
Domestic purpose	0.5 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>1.8 KLD</b>	

Source: Prefeasibility Report

About 50% water will be required for the suspension of the dust, Water shall be obtained from accumulated rainwater/seepage water in quarry pits. Packaged Drinking Water is available from the nearby approved water vendors.

### 2.7.2 Power and Other Infrastructure Requirement

The project's does not require power supply for the quarry operation. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB. For the quarrying operation like compressor for drilling Diesel will be utilized.

The temporary infrastructures such as Mine Office, First Aid Room, Rest Shelter etc., will be constructed within the project area before commencing the quarry operation. No workshops are proposed inside the project area hence there will not be any process effluent generation from the project area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment.

### 2.7.3 Fuel Requirement -P1

Fuel is to be used inform of diesel for quarrying operations, compressors and running of tippers and other transportation vehicles. Quantity for fuel will depend upon the usage of transportation vehicle and other machineries and level of achievement of estimated production. Diesel will be out sourced from nearby diesel pumps.

#### 1. For Topsoil:

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m <sup>3</sup> of Topsoil
Topsoil quantity	=	75,438/60 = 1257hours
Diesel consume	=	1257hours x 10 liters
Total diesel consumption	=	12,573 Liters of HSD will be utilized for Topsoil

#### 2. For Rough Stone quarry:

Per hour Excavator will consume	=	16 liters / hour
Per hour Excavator will excavate	=	20m <sup>3</sup> of Rough Stone quarry

Rough Stone quarry quantity	=	$90,4638\text{m}^3/20$	=	45,232 hours
Diesel consume	=	45,232 hours x 16 liters		
Total diesel consumption	=	<b>7,23,712</b> Liters of HSD will be utilized for Rough Stone quarry		
Total diesel consumption	=	<b>7,36,285</b> Liters of HSD will be utilized for entire project life.		

**Fuel Requirement -P2****1. For Topsoil:**

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m <sup>3</sup> of Topsoil
Topsoil quantity	=	68,760/60 = 1,146 hours
Diesel consume	=	1146 hours x 10 liters
Total diesel consumption	=	<b>11,460</b> Liters of HSD will be utilized for Topsoil

**2. For Rough Stone quarry:**

Per hour Excavator will consume	=	16 liters / hour
Per hour Excavator will excavate	=	20m <sup>3</sup> of Rough Stone quarry
Rough Stone quarry quantity	=	7,25,186m <sup>3</sup> /20 = 36,259 hours
Diesel consume	=	36,259 hours x 16 liters
Total diesel consumption	=	<b>5,80,149</b> Liters of HSD will be utilized for Rough Stone quarry
Total diesel consumption	=	<b>5,91,609</b> Liters of HSD will be utilized for entire project life.

**2.7.4 Employment Requirement:**

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community.

**TABLE 2.18: EMPLOYMENT POTENTIAL FOR PROPOSED QUARRIES**

Identification code	Employment in Nos
P1	18
P2	18
<b>Total</b>	<b>36</b>

A total of 36 people will get employment due to these 2 quarries in the cluster quarries.

**2.7.5 Project Cost****TABLE 2.19 – PROJECT COST OF PROPOSED PROJECTS**

Identification code	Project Cost
P1	Rs. 4,46,40,000/-
P2	Rs. 4,46,40,000/-
<b>Total</b>	<b>Rs. 8,92,80,000/-</b>

Source: Approved Mining Plan & Prefeasibility Report of the respective projects



### 2.8 *Project Implementation Schedule*

The commercial operation will commence after the grant of Environmental Clearance. CTO 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

**TABLE 2.20 – EXPECTED TIME SCHEDULE FOR THE PROPOSED QUARRIES**

S. No	Particulars lease execution	Time schedule (in month)					Remarks if any
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	
1	Environmental Clearance						
2	Consent to operate						Production start period

Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines.

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## CHAPTER – 3: DESCRIPTION OF ENVIRONMENT

### 3.0 General

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering March 2023 - May 2023 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by *Chennai Mettex Lab Private Limited* (Approved by AAI, AGMARK, APEDA, BIS, EIC FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD), – for the below attributes-

- Land
- Water
- Air
- Noise
- Biological
- Socio-economic status

#### Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The data collection has been used to understand the existing environment scenario around the cluster quarries against which the potential impacts of the project can be assessed. The study area has been divided into two zones viz **core zone** and **buffer zone** where core zone is considered as cluster and buffer zone taken as 10km radius from the periphery of the Cluster. Both Core zone and Buffer zone is taken as the study area.

#### Study Period

The baseline study was conducted during the summer season i.e., March 2023 - May 2023.

#### Methodology

Baseline data was generated for various environmental parameters including Land, Soil, Water (surface and groundwater), Air, Noise, Ecology & Biodiversity and Socio-economic status to determine the quality of the prevailing environmental settings. A MoEF accredited Laboratory was used for generating the baseline data.

1. The project area (Core zone) was surveyed in detail with the help of Total Station survey instrument and the boundary pillars were picked up with the help of handheld GPS. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO).

2. Soil samples were collected and analysed for relevant physico-chemical characteristics, exchangeable cations, nutrients & micro nutrients etc., in order to assess the impact of mining activities and proposed greenbelt development.
3. Ground water samples were collected during the study period from the open wells and bore wells, while surface water was collected from river and lake in the buffer zone. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500:2012 criteria) and those which are relevant from the point of view of environmental impact of the proposed quarries.
4. A meteorological station was setup in pachapalayam village. Wind speed, Wind direction, Dry and wet bulb temperature, Relative humidity, Rainfall with cloud cover and general weather conditions were recorded throughout the study period.
5. In order to assess the Ambient Air Quality (AAQ), samples of Ambient Air were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM<sub>10</sub> and SO<sub>2</sub>, NO<sub>x</sub> with gaseous attachments & Fine Dust Samplers (FDS) for PM<sub>2.5</sub> and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality.
6. The noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.
7. Baseline biological studies were carried out to assess the ecology of the study area to study the existing flora and fauna pattern of the area.
8. Socio-Economic survey was conducted at village and household level in the study area to understand the present socio-economic conditions and assess the extent of impact due to the proposed mining project.

The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of samples analysis, etc., are given below Table 3.1.

**TABLE 3.1 – ENVIRONMENTAL MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING**

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (2 core & 4 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Automatic Weather Station	1	Site specific primary data& Secondary Data from IMD Station

*Ambient Air Quality	PM <sub>10</sub> PM <sub>2.5</sub> SO <sub>2</sub> NO <sub>x</sub> Fugitive Dust	24 hourly twice a week (March –May 2023)	8 (2 core & 6 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	8 (2core & 6 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

\* All monitoring and testing are been carried out as per the Guidelines of CPCB and MoEF & CC.

### **3.1 LAND ENVIRONMENT**

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

#### **3.1.1 LAND USE/ LAND COVER**

To study the land use pattern of the core as well as a buffer zone, land use/land cover details have been identified/ maps have been prepared in accordance with the **Standard ToR point no. 4 & 10 Stating:**

Point No. 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).

Point No. 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.

Current vintage data of Indian Remote Sensing Satellite ResourceSat-2A L-III (False Color Composite) has been used for Land Use / Land Cover study. Satellite image has been procured from National Remote Sensing Centre, Hyderabad.

#### **3.1.2 OBJECTIVE**

***The objectives of the LULC study are as follow:***

- ☞ To develop the Land use & Land cover map using land coordinates of the plant area (Core Zone) and 10 km radius from the plant site (Buffer area).
- ☞ To Identify and mark the important Land use and Land cover features using the primary and secondary data collected.
- ☞ To evaluate the impacts on existing land use/cover features of the buffer area by the Proposed Project activities.
- ☞ To identify the mitigative measures for the sustainable use of land and to protect the buffer zone from the adverse impacts.

#### **Technical specification of Satellite imagery Data Used:**

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT1 (LISS-III) digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area. Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India Toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network; village for geo-referencing of satellite image.

- ☞ Satellite Image - Resourcesat1-LISSIII, 23.5m Resolution
- ☞ Satellite Data Source - NRSC, Hyderabad
- ☞ Satellite Vintage - 14st July 2020, Swath 141km wide.
- ☞ SOI Toposheet No - 57 H/14
- ☞ Software Used - ArcGIS 10.8

The satellite image (FCC color 3,2,1) of the buffer zone is given in 3.1

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Resourcesat1-LISSIII, 23m Resolution of 23.5m and a 141 km wide swath of the earth in 23.5m resolution covering wide areas the data is collected in 4 visible bands namely band number and Resolution.

**TABLE 3.2: Resourcesat1-LISSIII SENSOR characteristics**

Band Number	Description	Wavelength	Resolution
Band 1	Green	0.52-0.59 $\mu\text{m}$	23.5 meters
Band 2	Red	0.62-0.68 $\mu\text{m}$	23.5meters
Band 3	NIR	0.77-0.86 $\mu\text{m}$	23.5meters
Band 4	SWIR	1.55-1.70 $\mu\text{m}$	70meters

Source: NRSC, Hyderabad

### 3.1.3 METHODOLOGY

The land use / land cover map is prepared by adopting the interpretation techniques of the Satellite image in combination with collateral data such as Survey of India topographical maps. Image classification is done by using visual interpretation techniques and digital classification using any of the image processing software. The various activities for preparation of LULC include preprocessing, rectification, image enhancements and classifying the satellite data for assessing the change in land use land cover due to proposed developmental activities.

- ☞ Preliminary/primary data collection of the study area
- ☞ Satellite data procurement from NRSC
- ☞ Secondary data collection from authorized bodies
- ☞ Survey of India Toposheet (SOI)
- ☞ Mine Layout
- ☞ Cadastral / Khasra map
- ☞ GPS Coordinates of Lease Boundary
- ☞ Processing of satellite data using ArcGIS 10.8 and preparing the Land Use & Land cover maps (e.g. Plant/Mine area, Existing Quarries, Settlements, Agriculture land, Non agriculture land, water bodies, etc.) by Digital Image Processing (DIP) technique.

- ☞ Geo-Referencing of the Survey of India Toposheet
- ☞ Geo-Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
- ☞ Enhancement of the Satellite Imagery
- ☞ Base Map layer creation (Roads, Railway, Village Names, and other Secondary data, etc.)
- ☞ Data analysis and Classification using Digital interpretation techniques.
- ☞ Ground truth studies or field Verification.
- ☞ Error fixing / Reclassification
- ☞ Final Map Generation.

The land use/Land cover Map of the buffer zone is given in 3.4(b).

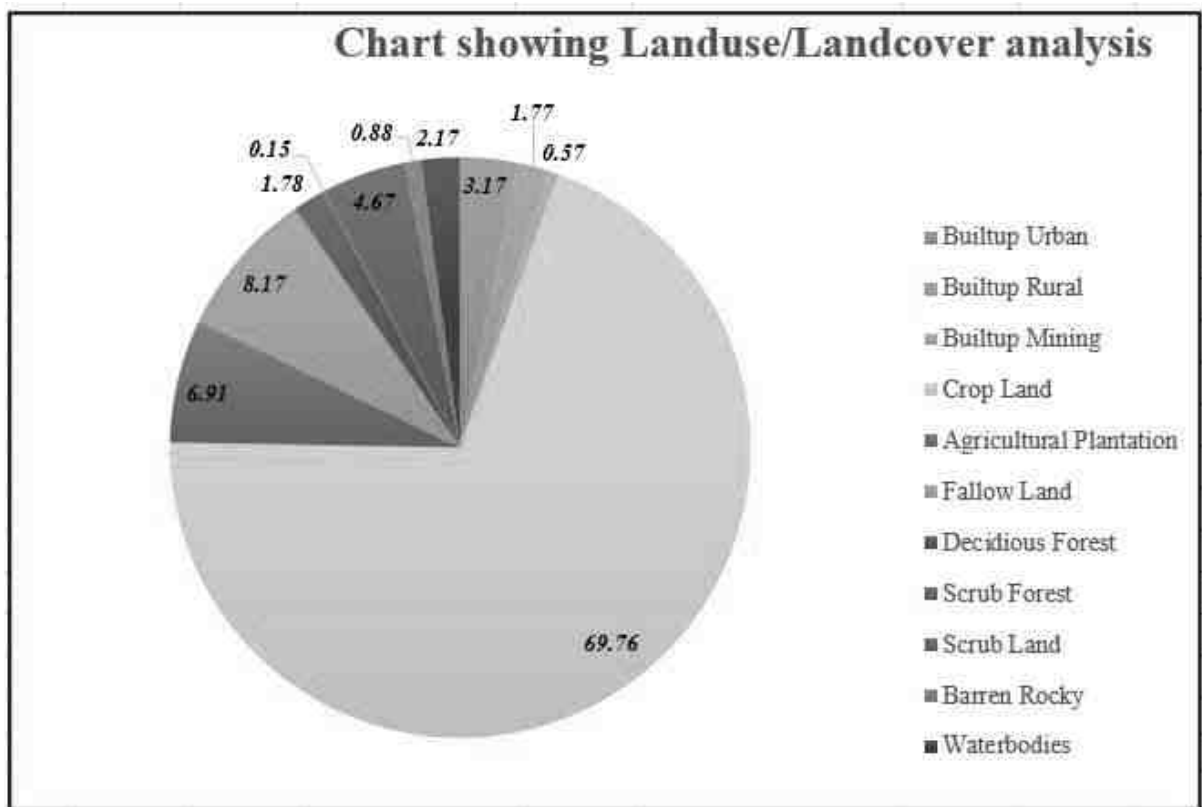
Land Use Pattern of the Buffer Zone (Study area)

Details of the same are given in Table - 3.3 and the map is shown in Figure - 3.2

**TABLE: 3.3 LAND USE / LAND COVER DETAILS OF STUDY AREA**

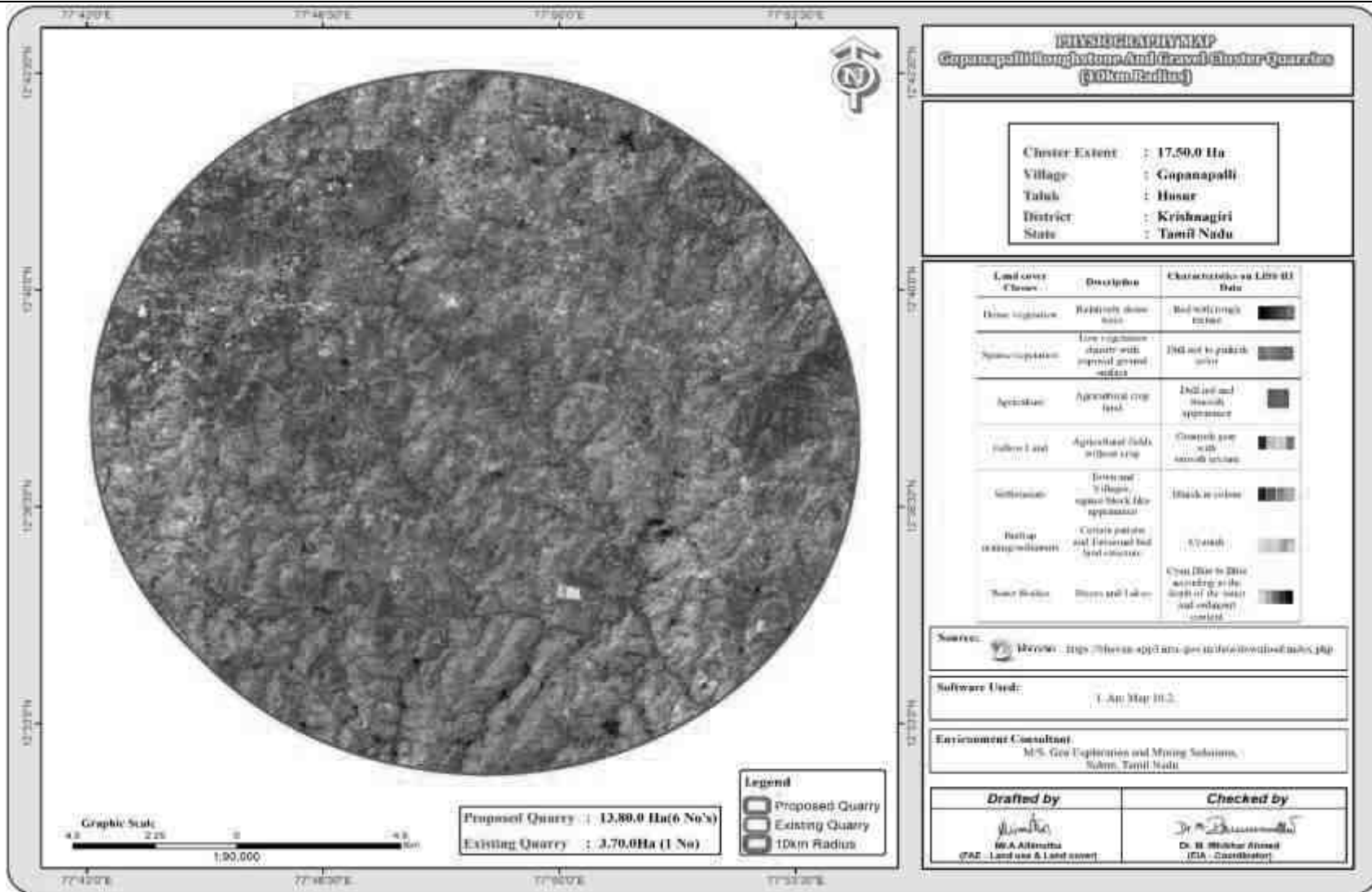
S.No	Classification	Area_Ha	Area_ %
<b>BUILTUP</b>			
1	Builtup Urban	1079.24	3.17
2	Builtup Rural	603.13	1.77
3	Builtup Mining	195.30	0.57
<b>AGRICULTURAL LAND</b>			
4	Crop Land	23769.85	69.76
5	Agricultural Plantation	2355.65	6.91
6	Fallow Land	2782.74	8.17
<b>FOREST</b>			
7	Decidious Forest	606.91	1.78
8	Scrub Forest	49.80	0.15
<b>BARREN/WASTELAND</b>			
9	Scrub Land	1591.69	4.67
10	Barren Rocky	298.53	0.88
<b>WATERBODIES</b>			
11	Waterbodies	739.27	2.17
		34072.10	100.00

Source: Bhuvan, NRSC.

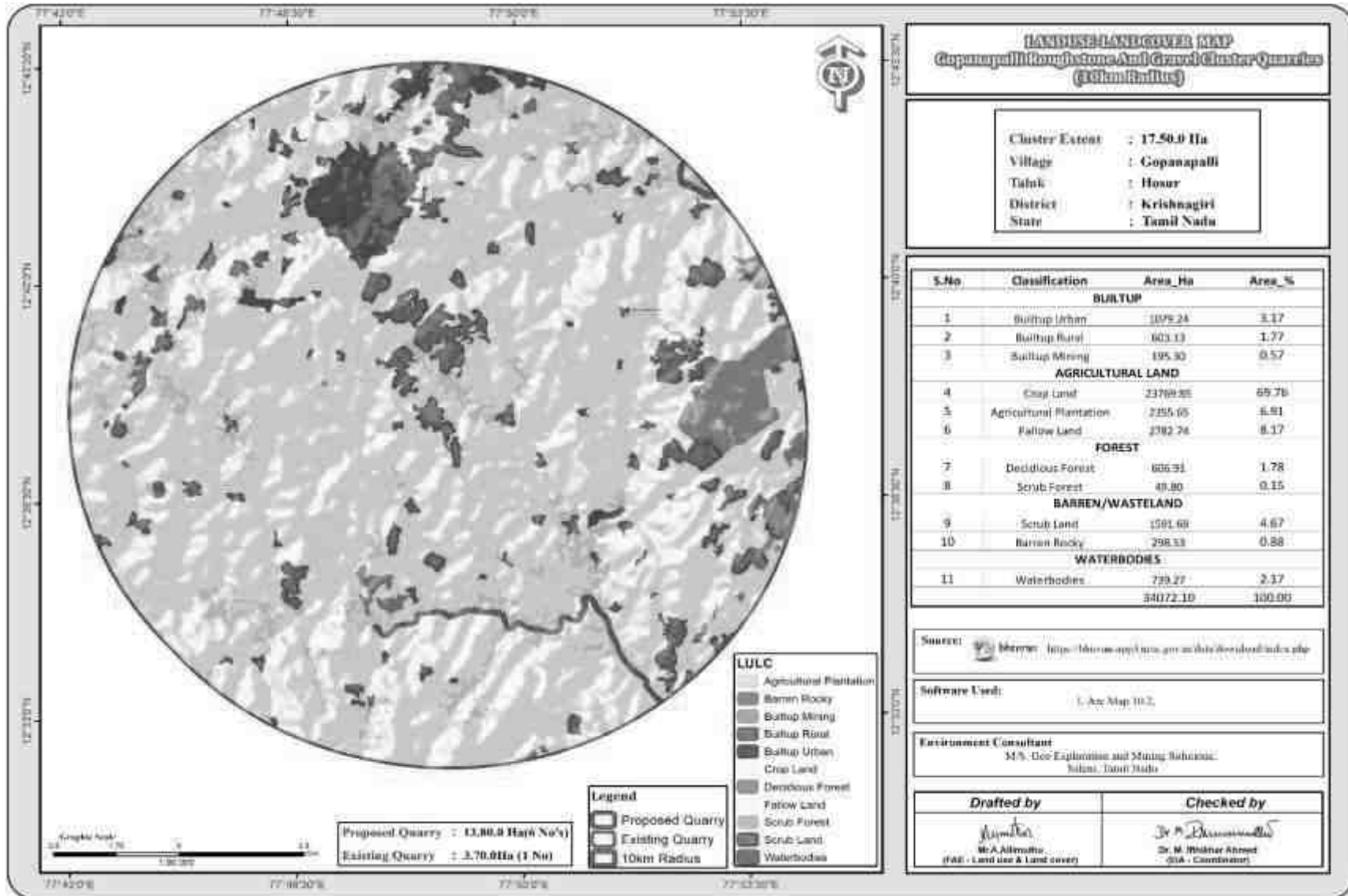


**FIGURE 3.1: CHART SHOWING LANDUSE/LANDCOVER ANALYSIS USING LISS III Data**





**FIGURE 3.2: MAP SHOWING FALSE COLOR COMPOSITE (3,2,1) SATELLITE IMAGERY OF THE STUDY AREA**



**FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS**

### 3.1.4 Interpretation

- ☞ The 10 km radius study area mainly comprises of crop land & Agriculture Plantation land accounting of 69.76% & 6.91% of the total study area. The study area also consists of fallow land of 10.11%.
- ☞ The buffer zone studied has no ecological sensitive area (National Park, Wildlife Sanctuary, Biosphere Reserve/ etc.).
- ☞ Water Bodies such as ponds/ lakes comprises of 2.17% of the total buffer area. The two seasonal rivers such as Ponnaiyar river at 9.5km in NE direction, Gopanapalli Lake 3.0km in NW and Nagondapalli Lake at 4.5km in NW direction of the total study area.
- ☞ The Scrub land accounts of 4.67%. As per the primary survey, it was observed the scrub land is mainly occupied by the stony waste and left-over domestic waste generated by the nearby areas.
- ☞ The deciduous forest, scrub forest 1.93% covered in buffer zone.
- ☞ 0.57% of the total study area has occupied by the mine industries. The area occupied by Mainly Roughstone and gravel of the total buffer area. As also observed within the primary survey, the 10 km buffer area is also occupied by the medium scaled granite and small Brick kiln industries also located in the study area.
- ☞ 4.94% of the area is covered under the Builtup Land. The nearest village within the 3 km radius from the project site boundary is observed to be villages Gopanapalli, Gulisandiram, Mugalur, and Kelamangalam Town Panchayat etc.,

### 3.1.5 Cropping Pattern of the Buffer Zone

Krishnagiri district is one of the potential districts for cultivation of agricultural and horticultural crops. total cultivated area of 224767 Hectares, out of which 180902 Ha Net cultivated area against the 5,14,325 Ha. of total geographical area.

It is one of the potential districts for agricultural and horticultural crop production. The major agricultural crops in the district are grown Paddy, Ragi, Redgram, Cowpea, Maize, Cumbu, Groundnut, Horsegram and minor millets. The major cultivated area of agricultural crops occupied by rainfed agriculture. The major horticultural crops grown in the district are fruit crops like Mango, Banana and Guava, Vegetable like eggplant, okra, capsicum, onion and chilli, spices like Turmeric, Black pepper and flower crops like Rose, Gerbera and Carnations.

Source: <https://www.agrifarming.in/district-wise-crop-production-in-tamil-nadu#krishnagiri>

### 3.1.6 Interpretation and Conclusion

- ☞ Gopanapalli village Roughstone quarries has proposed Project. It is a government poramboke land.
- ☞ Total project area is 34072.10 ha around 10km radius.
- ☞ As new Proposed mine is coming in the area, percentage of human settlement will be increased in surrounding of project site and Infrastructure facilities also will be developed on the basis of requirement.
- ☞ The 10 km study area mostly covers of crop land 70%. As per current study area is occupied by scrub land 0.15%, Barren rocky land 0.88% and Forest land is 1.93% in 10 km radius from the study area land use into quarrie purpose for this proposed project.

∞ The project site falls under the Roughstone region. Therefore, the area is appropriate for developing Road development and building etc., it shows that the region has good prospects in the future. Due to proposed Roughstone in this region, economic condition of locals is expected to be improved directly & indirectly. Hence project will prove to be the best economic proposal for the coming times.

### 3.1.7 Topography

The project area is almost plain terrain with gentle gradient towards North – Southeastern, Eastern side, maximum elevation of the area is 870-858m above Mean Sea level there are no hilly regions in and around the area.

### 3.1.8 Drainage Pattern of the Area

There are no developed surface drainage channels in the study area. Ponnaiyar River a perennial pass 10km-North East from the project site. The area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The area is mostly dry in all seasons except rainy seasons.

The general drainage pattern of the area is of sub dendritic and dendritic pattern. No prominent water course or nallah is inferred. During rainy season the surface run off flows in N to SE direction. The drainage pattern of the study area is given in Fig. 3.5. The quarrying activity will not hinder the natural flow of rainwater.

### 3.1.9 Environmental Features in the Study Area

There is no Wildlife Sanctuaries, National Park and Archaeological monuments within the study area. No Protected and Reserved Forest area is involved in the project area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the mine lease area i.e., 10 km radius of the mine lease area, are given in the below Table 3.3.

### 3.1.10 Seismic Sensitivity

The proposed project site falls in the seismic Zone III, low damage risk zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002. The project area falls in the hard rock terrain on the peninsular shield of south India which is highly stable.

**TABLE 3.4 – DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE PROJECT AREA**

Sl. No	Sensitive Ecological Features	Name	Arial Distance in km from Mine Lease Boundary
1	National Park / Wild life Sanctuaries	Cauvery Wildlife Santuary	13km-SE
2	Reserve Forest	Sanamav R.F	7km-W
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	None	Nil within 10Km Radius
5	Mangroves	None	Nil within 10Km Radius
6	Mountains/Hills	None	Nil within 10Km Radius
7	Notified Archaeological Sites	None	Nil within 10Km Radius
8	Defence Installation	None	Nil within 10Km Radius

Source: Survey of India Toposheet, Village Cadastral Map & Google Earth/Maps

**TABLE 3.5 – WATER BODIES WITHIN THE CLUSTER FROM PROPOSED QUARRIES****P1**

<b>S.No</b>	<b>NAME</b>	<b>DISTANCE &amp; DIRECTION</b>	<b>Habitation</b>
1	Odai	140m_N	520m_N
2	Goppanapalli Lake	2.7Km_NW	
3	Nagondapalli Lake	4.3Km_NW	
4	Nanjappa Kodigai Eri	5.5Km_SE	
5	Chinnati Dam	7Km_SE	
6	Ponnaiyar River	9.7Km_NE	

**P2**

<b>S.No</b>	<b>NAME</b>	<b>DISTANCE &amp; DIRECTION</b>	<b>Habitation</b>
1	Odai	140m_N	600m_NW
2	Goppanapalli Lake	3Km_NW	
3	Nagondapalli Lake	4.5Km_NW	
4	Nanjappa Kodigai Eri	5.5Km_SE	
5	Chinnati Dam	7Km_SE	
6	Ponnaiyar River	9.5Km_NE	

Source: Village Cadastral Map and Field Survey, PFR Report

**3.1.11 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 analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.6 and Figure 3.6.

**TABLE 3.6 – SOIL SAMPLING LOCATIONS**

<b>S. No</b>	<b>Location Code</b>	<b>Monitoring Locations</b>	<b>Distance &amp; Direction</b>	<b>Coordinates</b>
1	S-1	Core Zone	Project Area	12°37'53.46"N 77°48'46.38"E
2	S-2	Core Zone	Project Area	12°37'56.56"N 77°48'36.40"E
3	S-3	Gopanapalli	2.5km NW	12°38'59.30"N 77°47'50.17"E
4	S-4	Saragapalli	5.5km SW	12°36'14.12"N 77°46'3.47"E
5	S-5	Karukondapalli	6.2km NE	12°39'26.12"N 77°51'51.04"E
6	S-6	Idayanallur	5km NW	12°40'45.54"N 77°48'32.42"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited ,in association with GEMS

**FIGURE 3.6: SITE PHOTOGRAPHS OF SOIL SAMPLING LOCATIONS**

**The objective of the soil sampling is -**

1. To determine the baseline soil characteristics of the study area;
2. To determine the impact of proposed activity on soil characteristics and;

To determine the impact on soil more importantly agriculture production point of view.

**Methodology –**

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the proposed quarry site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. six (6) 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. The samples were analysed for physical and chemical characteristics. The sealed samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.5.

**TABLE 3.7 – METHODOLOGY OF SAMPLING COLLECTION**

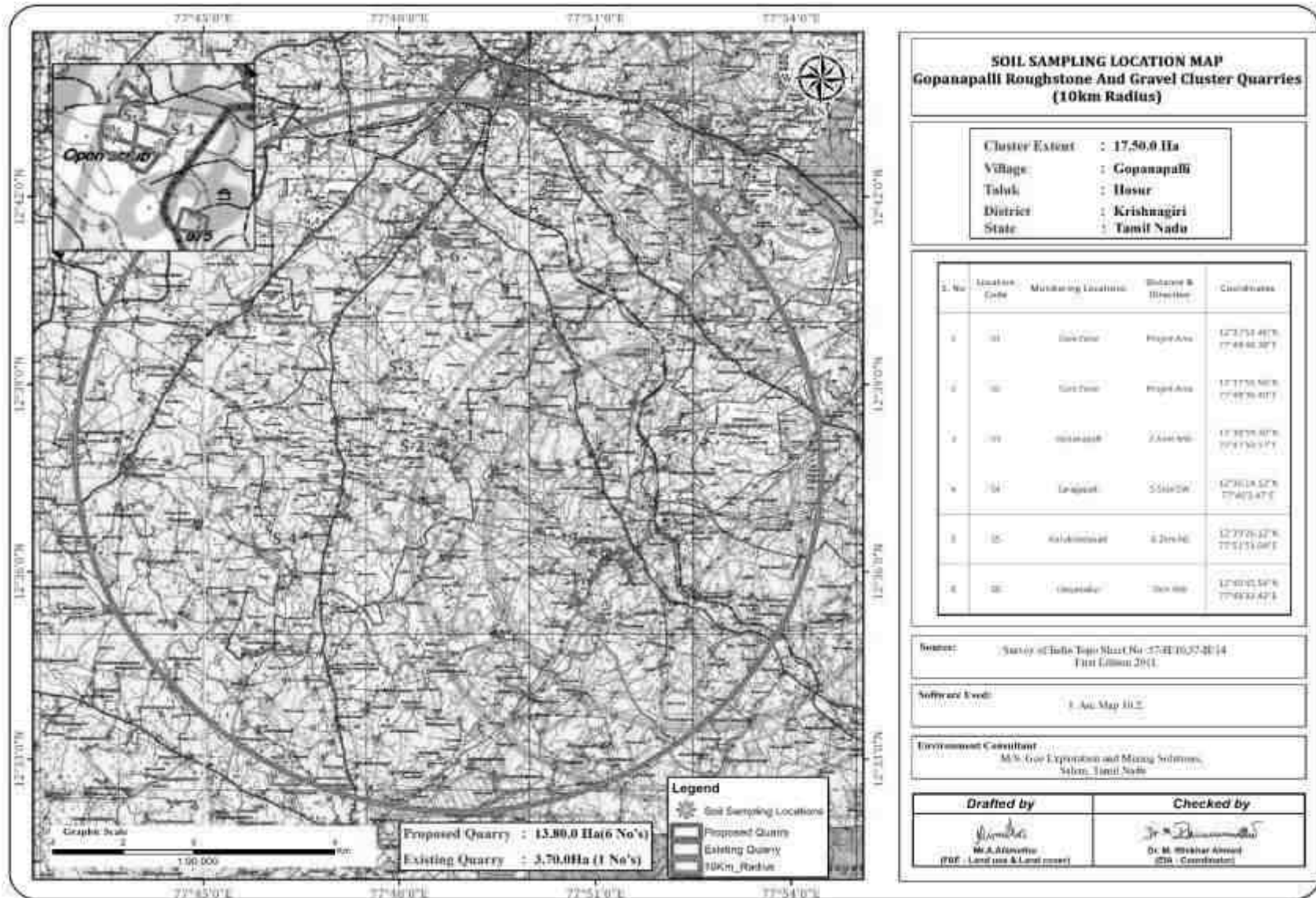
Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

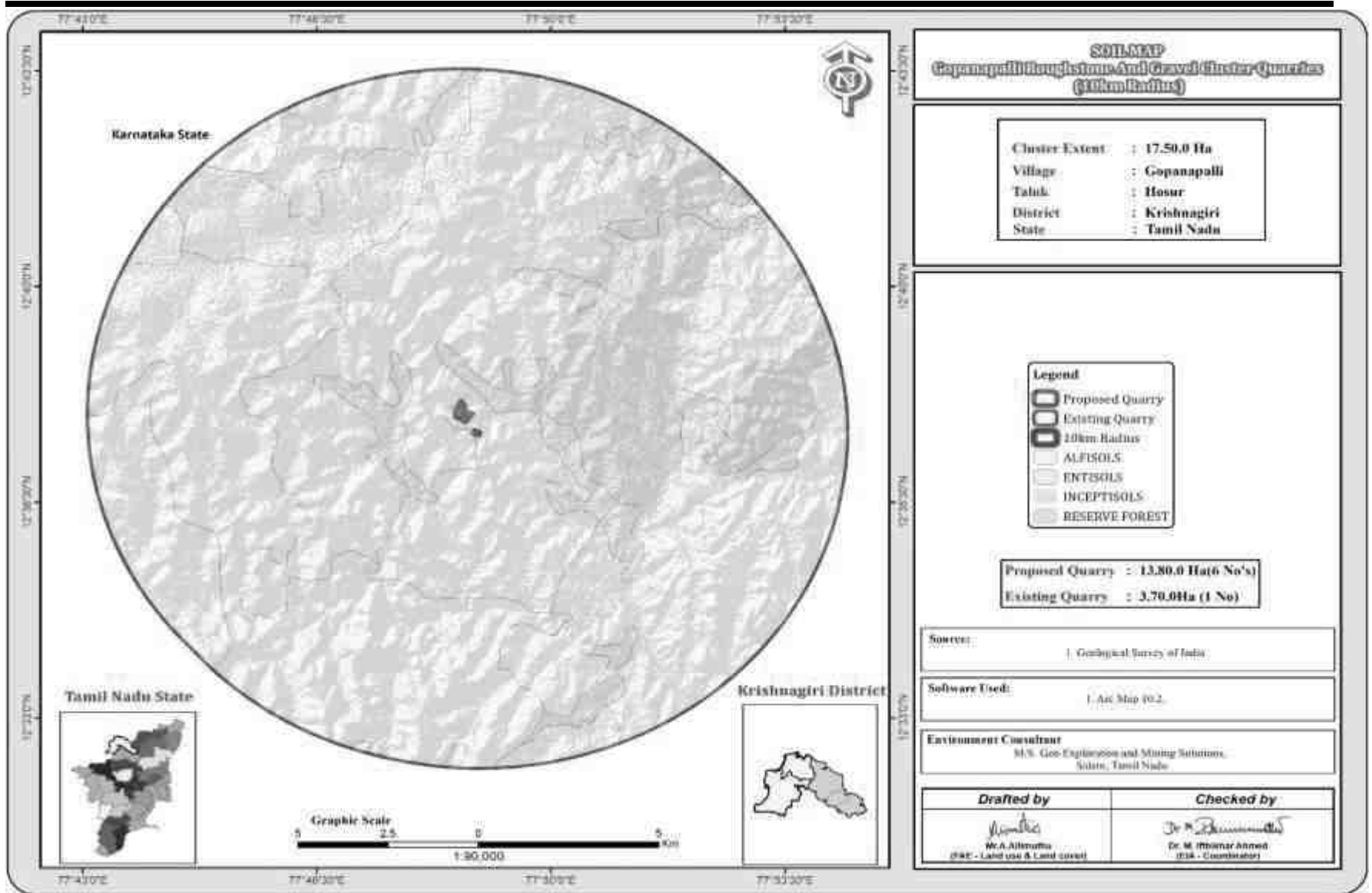
Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited.

**Soil Testing Result –**

The samples were analysed as per the standard methods prescribed in “Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India”. The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium. The standard classification of soil and physico-chemical characteristics of the soils are presented below in Table 3.6 & Test Results in Table 3.7.

**FIGURE 3.7: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS**





**FIGURE 3.8: SOIL MAP**



TABLE 3.8 – SOIL QUALITY MONITORING DATA

S.No	Test Parameters	Protocols	S1-Core Zone	S2- Core Zone	S3- Gopanapalli	S4- Saragapalli	S5- Karukondapalli	S6- Idayanallur
1	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	8.33	8.98	8.10	8.27	7.69	7.90
2	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	455 µmhos/cm	550 µmhos/cm	560 µmhos/cm	467 µmhos/cm	480 µmhos/cm	528 µmhos/cm
3	Water Holding Capacity	By Gravimetric Method	46.1 %	46.3 %	45.9 %	47.4 %	46.4 %	48.5 %
4	Bulk Density	By Cylindrical Method	1.05 g/cm <sup>3</sup>	1.01 g/cm <sup>3</sup>	0.94 g/cm <sup>3</sup>	1.03 g/cm <sup>3</sup>	1.08 g/cm <sup>3</sup>	1.10 g/cm <sup>3</sup>
5	Porosity	By Gravimetric Method	41.4 %	48 %	42.9 %	46.5 %	45.5 %	47.6 %
6	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	153.5 mg/kg	169.5 mg/kg	270 mg/kg	150 mg/kg	158 mg/kg	130 mg/kg
7	Magnesium as Mg	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	66.7 mg/kg	130 mg/kg	76 mg/kg	133.5 mg/kg	129 mg/kg	96.7 mg/kg
8	Chloride as Cl	IS 2720 Part 27 : 1977 (Reaff:2015)	133 mg/kg	203.5 mg/kg	140 mg/kg	90.4 mg/kg	179 mg/kg	130.7 mg/kg
9	Soluble Sulphate as SO <sub>4</sub>	IS 10158 : 1982 (Reaff: 2019)	0.012 %	0.0045 %	0.012 %	0.011 %	0.0011 %	0.000032
10	Total Phosphorus as P	IS 14684 : 1999 (Reaff:2019)	1.26 mg/kg	2.2 mg/kg	1.06 mg/kg	1.9 mg/kg	2.37 mg/kg	2.8 mg/kg
11	Total Nitrogen as N	IS : 2720 Part 22: 1972 (Reaff: 2015)	450 mg/kg	530 mg/kg	463 mg/kg	374.1 mg/kg	450 mg/kg	477.1 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	2.48 %	2.77 %	2.22 %	3.25 %	2.67 %	1.83 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.44 %	1.61 %	1.29 %	1.89 %	1.55 %	1.06 %
14	Texture :							
	Clay	Gravimetric Method	39.4 %	0.34	37.8 %	37.5 %	35.5 %	40.1 %
	Sand		36.2 %	0.331	38.5 %	34.7 %	33.9 %	32.2 %
	Silt		24.4 %	0.329	23.7 %	27.8 %	30.6 %	27.7 %
15	Manganese as Mn	USEPA 3050 B – 1996 &	3.6 mg/kg	24 mg/kg	25.6 mg/kg	40.1 mg/kg	21.8 mg/kg	22.5 mg/kg
16	Zinc as Zn	USEPA 6010 C - 2000	2.7 mg/kg	1.71 mg/kg	1.24 mg/kg	2.6 mg/kg	1.64 mg/kg	4.4 mg/kg
17	Boron as B		1.2 mg/kg	1.6 mg/kg	2.67 mg/kg	1.9 mg/kg	1.9 mg/kg	0.91 mg/kg
18	Potassium as K		18.2 mg/kg	51 mg/kg	41 mg/kg	32 mg/kg	65.5 mg/kg	44 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
22	Lead as Pb		0.71 mg/kg	0.67 mg/kg	0.31 mg/kg	0.88 mg/kg	0.16 mg/kg	0.76 mg/kg
23	Iron as Fe		17.2 mg/kg	2.8 mg/kg	1.86 mg/kg	2.9 mg/kg	2.29 mg/kg	2.13 mg/kg
24	Cation Exchange Capacity	USEPA 9080 – 1986	46.8 meq/100g of soil	37.2 meq/100g of soil	36.6 meq/100g of soil	45.5 meq/100g of soil	45.8 meq/100g of soil	40.1 meq/100g of soil

Source: Sampling Results by Chennai Mettlex Lab Private Limited.

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**Interpretation & Conclusion****Physical Characteristics –**

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay to Sandy Soil and Bulk Density of Soils in the study area varied between 0.94– 1.10 g/cc. The Water Holding Capacity (45.9-48.5%) and Porosity of the soil samples is found to be medium i.e., ranging from 41.4– 48%.

**Chemical Characteristics –**

- The nature of soil is slightly alkaline to strongly alkaline in nature with pH range 7.69 to 8.98
- The available Nitrogen content range between 374.1 to 530mg/kg
- The available Phosphorus content range between 1.06 to 2.8 mg/kg
- The available Potassium range between 18.2 to 65.5mg/kg

Whereas, the micronutrient as zinc (Zn), iron (Fe) and copper (Cu) were found in the range of 1.24 to 4.4 mg/kg; 1.86 to 2.13 mg/kg.

Wilting co efficient in significant level would mean that the soil would support the vegetation. The soil properties in the buffer zone reveal that the soil can sustain vegetation. If amended suitability the core area can also withstand plantation.

**3.2 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 norms in pre-treated sampling cans to laboratory for analysis.

**3.2.1 Surface Water Resources:**

Ponnaiyar river lies at 10 Km North East from the project cluster. 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 for couple of months after rainy season.

**3.2.2 Ground Water Resources:**

The terrain is underlain by hard rock formations, Fissured and fractured crystalline rocks constitute the important aquifer systems in the Krishnagiri region. Ground water occurs under phreatic to semi-confined conditions in these formations and is being developed by means of dug wells and filter points. Proterozoic formation is the basement rocks which consist of quartzite, crystalline limestone, calc-granulite, hornblende – biotite gneiss, charnockite or pyroxene granulite, granite and pegmatite. Weathered, a fissured crack, shear zones and joints in the basement rock act as a good groundwater potential zone in the study area.

The study area falls in the Shoologiri block which is categorized as over-exploited zone as per G.O (MS) No 113 dated 09.06.2016.

### 3.2.3 Methodology

Reconnaissance survey was undertaken to collect the sampling and locations were finalized based on;

1. Drainage pattern;
2. Location of residential areas representing different activities/likely impact areas; and
3. Likely areas, which can represent baseline conditions

Two (2) surface water and four (4) ground water samples were collected in the study area and physico-chemical, heavy metals and bacteriological parameters were analysed. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and 'Standard methods for the Examination of Water and Waste water' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.5.

**TABLE 3.9 – WATER SAMPLING LOCATIONS**

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	SW-1	Nanjappan Kodigai Eri	5.8km SE	12°36'18.38"N 77°51'31.53"E
2	SW-2	Gopanapalli Lake	2.8km NW	12°39'19.86"N 77°47'56.82"E
3	WW-1	Near Project Area	520m NW	12°38'4.70"N 77°48'18.17"E
4	WW-2	Karukondapalli	5.5km NE	12°39'6.80"N 77°51'37.09"E
5	BW-1	Near Project Area	600m South	12°37'33.70"N 77°48'38.18"E
6	BW-2	Idayanallur	4.8km NW	12°40'38.55"N 77°48'26.11"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited.

Note: SW- Surface water, WW – Well Water, BW – Bore well

**FIGURE 3.9: SITE PHOTOGRAPHS OF WATER SAMPLING LOCATIONS**



**TABLE 3.10 – SURFACE WATER ANALYSIS RESULTS**

SNO	TEST	PROTOCOL	Surface Water (SW-1) - Nanjappan Kodigai Eri	Surface Water (SW-2) – Gopanapalli Lake	Surface Water (WW1) – Near Project Area
1	Colour	IS 3025 Part 4:1983 (Reaff:2017)	10 Hazen	5 Hazen	10 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable	Agreeable	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.55	7.02	7.97
4	Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	1053 µmhos/cm	1281 µmhos/cm	1203 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	5.1 NTU	2.2 NTU	3.9 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	621 mg/l	455 mg/l	710 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff:2019)	192.74 mg/l	133.34 mg/l	234.3 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	32.1 mg/l	25.1 mg/l	40.2 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	27.4 mg/l	17.2 mg/l	32.6 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff:2019)	277 mg/l	197 mg/l	274 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	135.5 mg/l	80.6 mg/l	134.5 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff:2019)	76.1 mg/l	57.5 mg/l	110 mg/l
13	Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.16 mg/l	0.14 mg/l	0.29 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.55 mg/l	0.22 mg/l	0.32 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff:2019)	17.2 mg/l	11.5 mg/l	27.3 mg/l
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39:1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43:1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	6.2 mg/l	2.8 mg/l	8.9 mg/l
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	36 mg/l	24 mg/l	48 mg/l
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.3 mg/l	5.6 mg/l	5.4 mg/l
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	1.2 mg/l	BDL (DL:1 mg/l)	1.5 mg/l
36	Sulphide as H <sub>2</sub> S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	15.5 mg/l	13.3 mg/l	30.5 mg/l
40	<b>Total Coliform</b>	<b>APHA 23<sup>rd</sup> Edn. 2017:9221B</b>	410 MPN/100ml	360 MPN/100ml	470 MPN/100ml
41	<i>Escherichia coli</i>	<b>APHA 23<sup>rd</sup> Edn. 2017:9221F</b>	130 MPN/100ml	110 MPN/100ml	120 MPN/100ml

**Note :** APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number

TABLE 3.11 – GROUND WATER ANALYSIS RESULTS

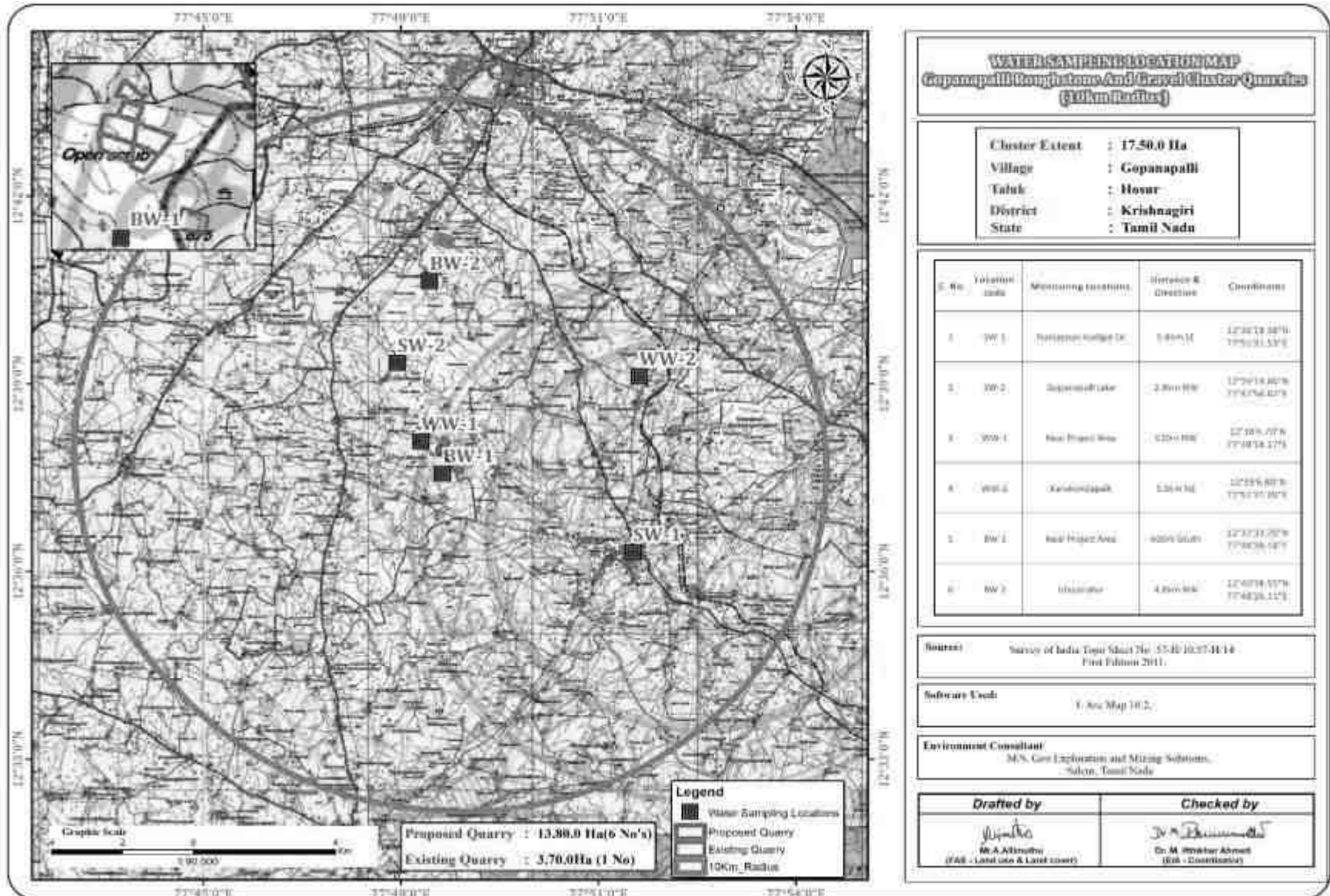
Sno	Test	Protocol	Ground Water (WW-2) – Karukondapalli	Ground Water (BW-1) – Near Project Area	Ground Water (BW2) – Idayanallur
1	Colour	IS 3025 Part 4:1983 (Reaff:2017)	5	5	5
2	Odour	IS 3025 Part 5:2018	Agreeable	Agreeable	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.73	7.06	7.88
4	Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	831 µmhos/cm	925 µmhos/cm	969 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	1.2 NTU	1.9 NTU	1.2 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	490 mg/l	546 mg/l	572 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff:2019)	154.04 mg/l	196.44 mg/l	179.29 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	27.3 mg/l	34.9 mg/l	30.5 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	20.9 mg/l	26.6 mg/l	25.1 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff:2019)	171.5 mg/l	194.6 mg/l	210.1 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	120 mg/l	119 mg/l	133 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff:2019)	55 mg/l	65.7 mg/l	64.5 mg/l
13	Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.11 mg/l	0.29 mg/l	0.22 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F.D	0.26 mg/l	0.21 mg/l	0.27 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff:2019)	5.5 mg/l	8.7 mg/l	7.7 mg/l
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL : 0.05 mg/l)	BDL (DL : 0.05 mg/l)	BDL (DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL : 0.02 mg/l)	BDL (DL : 0.02 mg/l)	BDL (DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL : 0.05 mg/l)	BDL (DL : 0.05 mg/l)	BDL (DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL (DL : 0.01 mg/l)	BDL (DL : 0.01 mg/l)	BDL (DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
30	Barium as Ba	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
31	Ammonia (as total ammonia-N)	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
32	Sulphide as H <sub>2</sub> S	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
33	Molybdenum as Mo	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
34	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
35	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
36	<b>Total Coliform</b>	APHA 23 <sup>rd</sup> Edn. 2017:9221B	170 MPN/100ml	120 MPN/100ml	110 MPN/100ml
37	<b>Escherichia coli</b>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml

**Note :** APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number

\* IS: 10500:2012-Drinking Water Standards; # within the permissible limit as per the WHO Standard. The water can be used for drinking purpose in the absence of alternate sources. Note: SW- Surface water, GW – Ground water.

**Source: Sampling Results by Chennai Mettex Lab Private Limited.**

**FIGURE 3.10: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS**



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### 3.2.4 Interpretation & Conclusion

#### Surface Water

The pH of surface 7.02-7.97 while turbidity found within the standards. Total Dissolved Solids 455-710mg/l and Chloride 80.6-135.5mg/l. Nitrates 11.5-27.3 mg/l, while sulphates 57.5-110 mg/l.

#### Ground Water

The pH of the water samples collected ranged from 7.06 to 7.88 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 490–572mg/l in all samples. The Total hardness varied between 154.04 – 196.44 mg/l for all samples.

On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

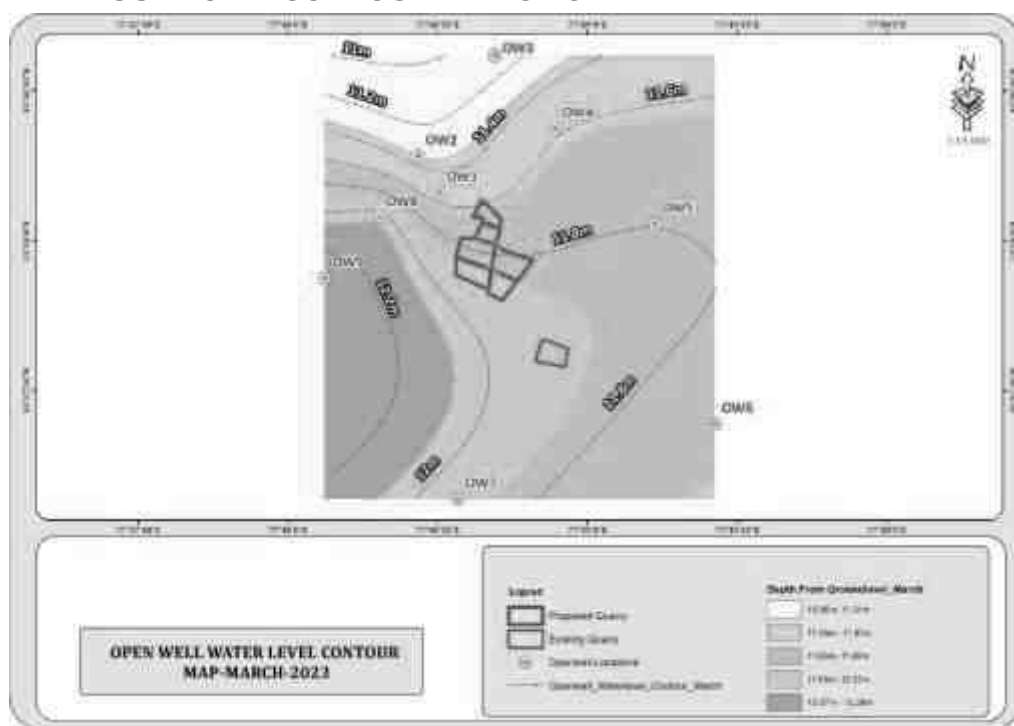
### 3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation Fissured and Fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 88m Bgl. the quarrying operations is restricted upto 66m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area. There is no necessity of stream, channel diversion due to this upcoming project.

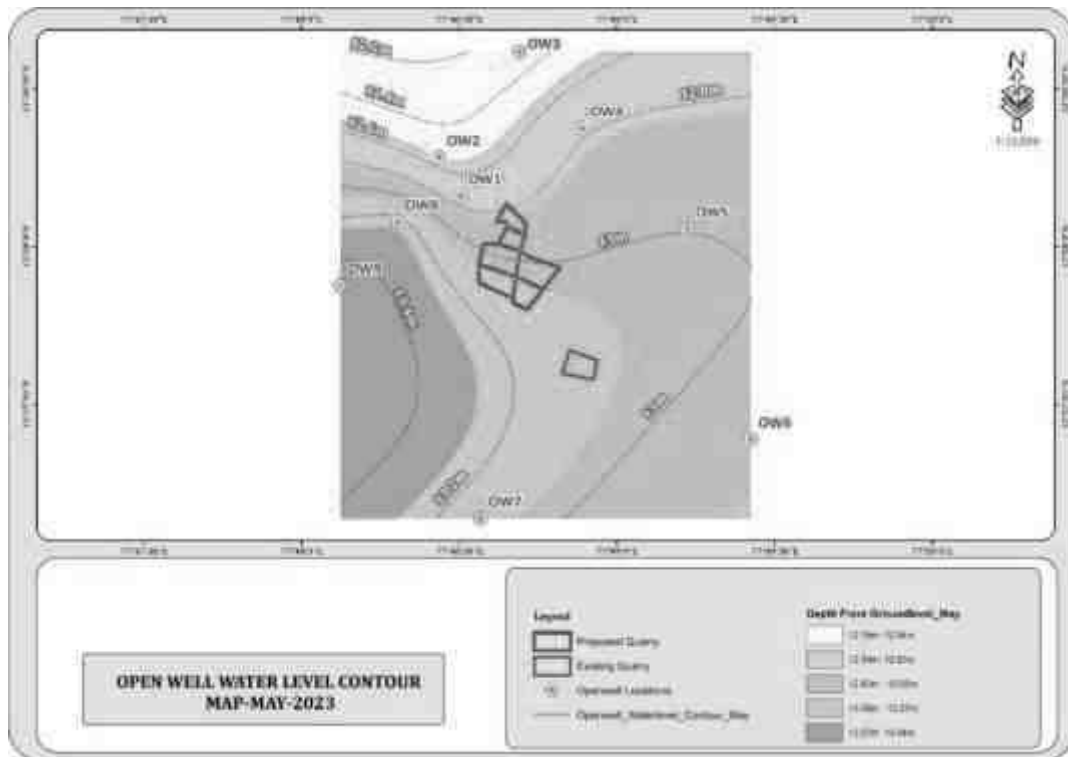
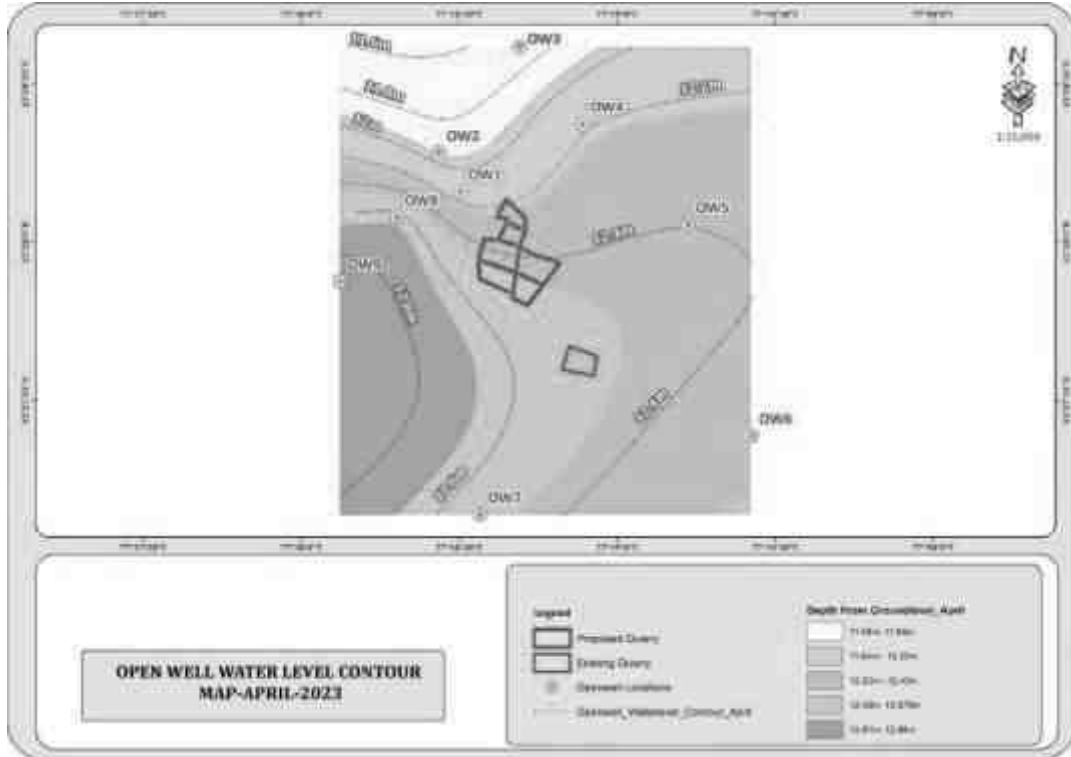
During the rainy season there is a possibility of collection of seepage water from the subsurface levels this is due to the high intensity of fracture and weathered portion upto a depth of 10m thus the collected seepage water will be stored in the mine sump pits and will be used for dust suppression and greenbelt development and during the end of the life of the mine this collected water will be as a temporary reservoir in that area.

**TABLE 3.12: POST MONSOON WATER LEVEL OF OPEN WELLS 1 KM RADIUS**

S.No	Name	LONGITUDE	LATITUDE	Mar-23	Apri-23	May-23
1	OW1	12° 38' 09.65"N	77° 48' 30.30"E	11.5	12.1	12.7
2	OW2	12° 38' 16.99"N	77° 48' 26.13"E	11.3	11.9	12.5
3	OW3	12° 38' 37.09"N	77° 48' 41.48"E	11.1	11.7	12.3
4	OW4	12° 38' 22.50"N	77° 48' 53.46"E	11.6	12.2	12.8
5	OW5	12° 38' 03.40"N	77° 49' 13.47"E	11.8	12.4	13
6	OW6	12° 37' 23.34"N	77° 49' 25.46"E	11.7	12.3	12.9
7	OW7	12° 37' 08.38"N	77° 48' 34.02"E	11.9	12.5	13.1
8	OW8	12° 38' 04.71"N	77° 48' 18.18"E	12.1	12.7	13.3
9	OW9	12° 37' 52.61"N	77° 48' 07.36"E	12.3	12.9	13.5

**FIGURE 3.11: CONTOUR MAP OF OPEN WELL WATER LEVEL**



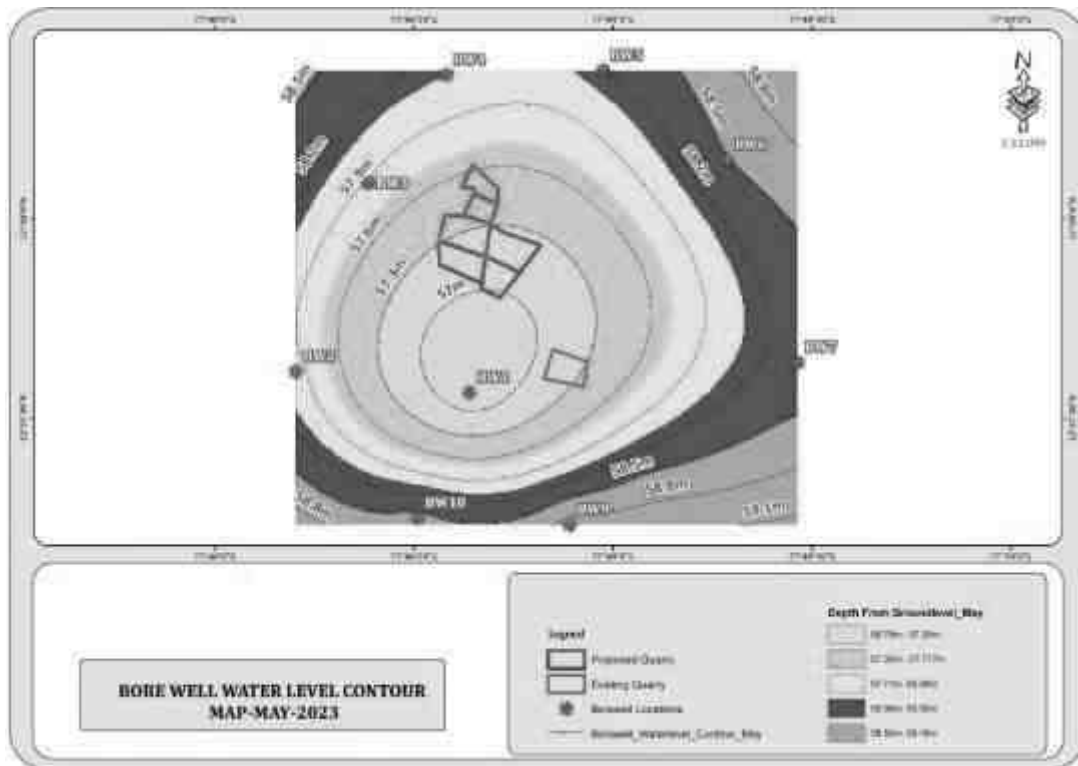
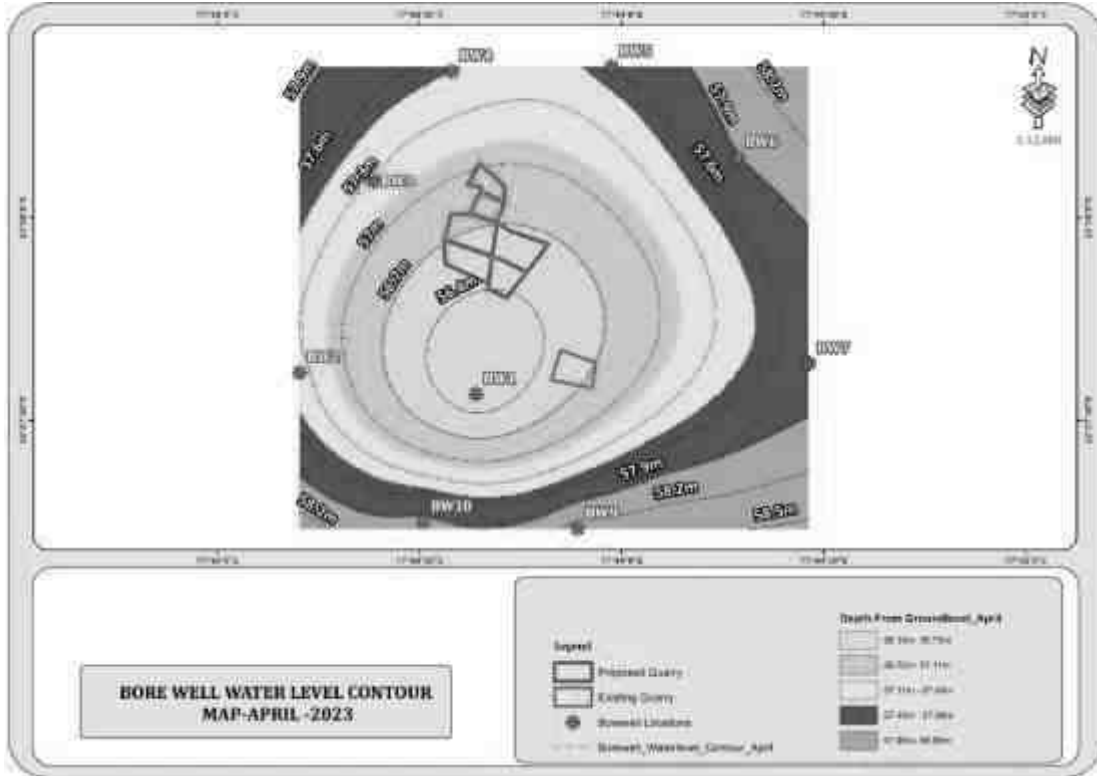


**TABLE 3.13: POST MONSOON WATER LEVEL OF BOREWELLS 1 KM RADIUS**

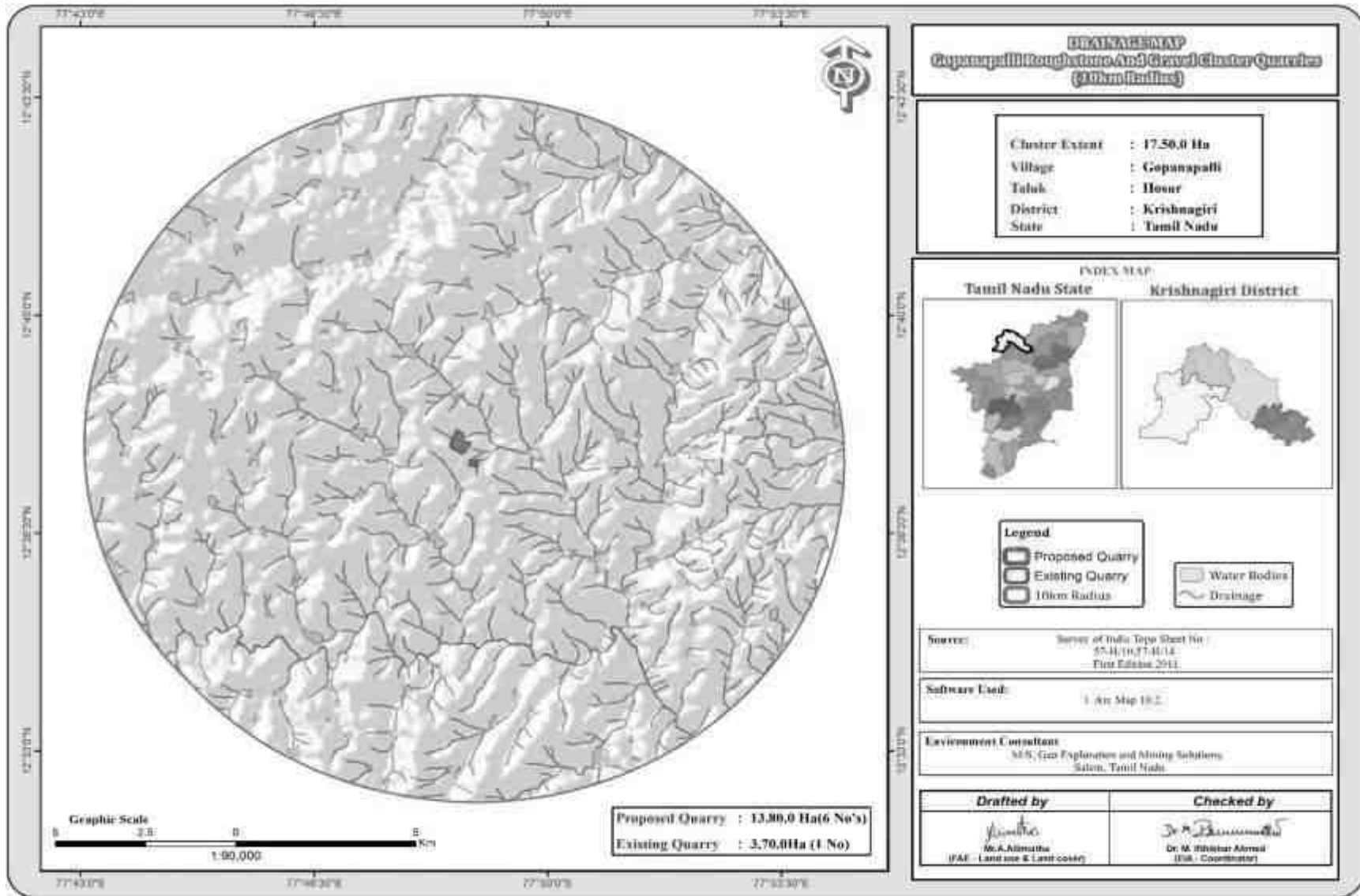
S.No	LABEL	LATITUDE	LONGITUDE	MARCH 2023	APRIL 2023	MAY 2023
1	BW1	12° 37' 33.80"N	77° 48' 38.33"E	55.6	56.2	56.8
2	BW2	12° 37' 36.97"N	77° 48' 12.13"E	56.8	57.4	58
3	BW3	12° 38' 05.37"N	77° 48' 23.14"E	56.7	57.3	57.9
4	BW4	12° 38' 21.72"N	77° 48' 34.78"E	56.9	57.5	58.1
5	BW5	12° 38' 22.36"N	77° 48' 58.47"E	57	57.6	58.2
6	BW6	12° 38' 08.87"N	77° 49' 17.20"E	57.3	57.9	58.5
7	BW7	12° 37' 38.37"N	77° 49' 27.83"E	57.1	57.7	58.3
8	BW8	12° 37' 19.02"N	77° 49' 05.59"E	57.5	58.1	58.7
9	BW9	12° 37' 13.87"N	77° 48' 53.44"E	57.8	58.4	59
10	BW10	12° 37' 14.94"N	77° 48' 30.50"E	57.4	58	58.6

**FIGURE 3.12: CONTOUR MAP OF BORE WELL WATER LEVEL**

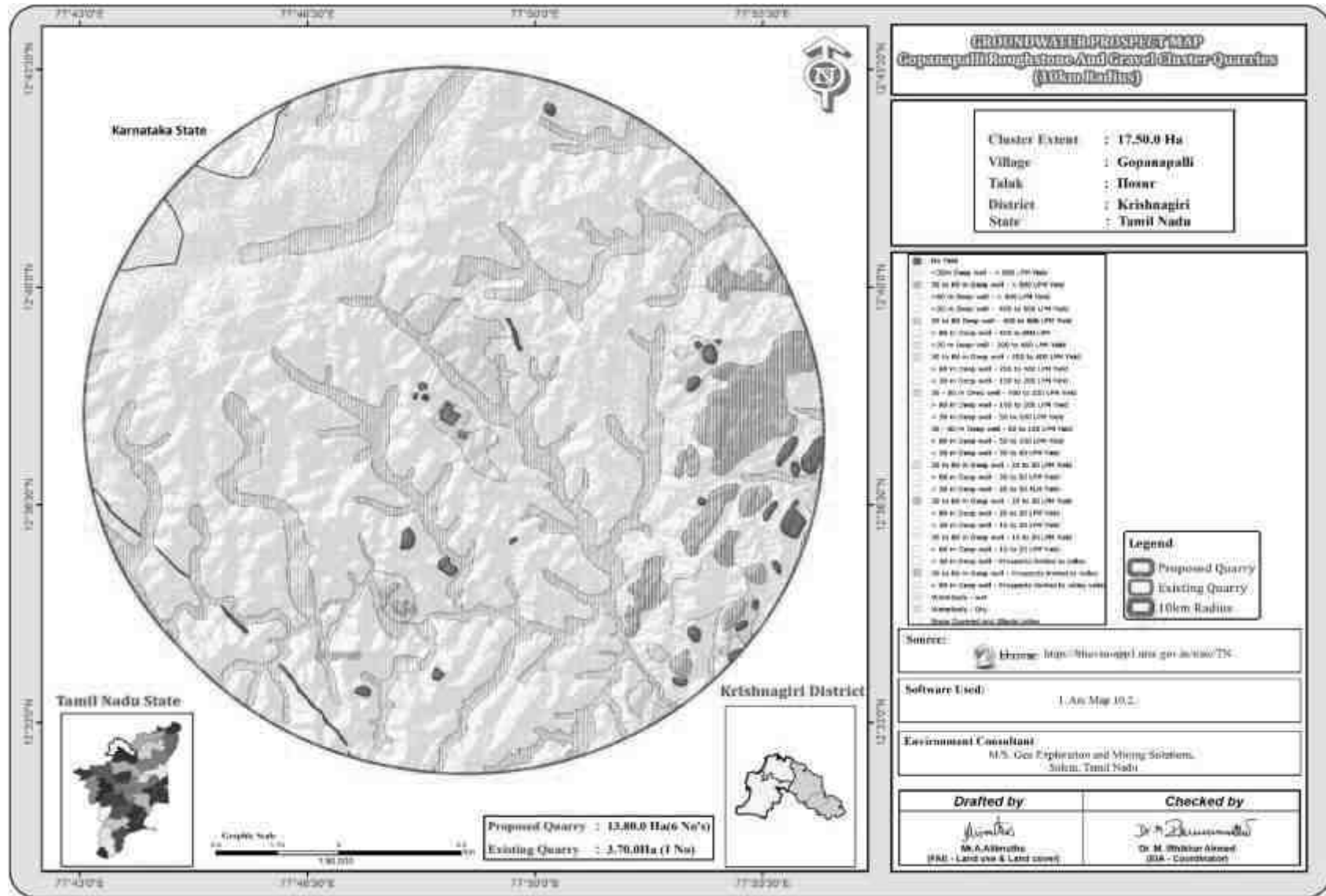




**FIGURE 3.13: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE**



**FIGURE 3.14: GROUND WATER PROSPECTS MAP**



Source : Bhuvan

### 3.2.6 Methodology and Data Acquisition

Electric Resistivity Method is well established for delineating lateral as well vertical discontinuities in the resistive structure of the Earth's subsurface. The present study makes use of vertical electric sounding (VES) to delineate the Vertical Resistivity structure at depth. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral inhomogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

The present study utilizes maximum current electrode separation  $AB/2$ . The data from this survey are commonly arranged and contoured in the form of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical inhomogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows

$$\rho_a = \frac{G\Delta V}{I}$$

$\Delta V$  = potential difference between receiving electrodes

$G$  = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10<sup>-8</sup> more than 10<sup>+14</sup> ohmmeter. On a broad classification, one can group the rocks falling in the range of 10<sup>-8</sup> to 1 ohmmeter as good conductors. 1 to 106 ohmmeter as intermediate conductors and 106 to 10<sup>12</sup> ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

$$\rho_r = F\rho_w = a \phi^m \rho_w$$

$\rho_r$  = Resistivity of Rocks

$\rho_w$  = Resistivity of water in pores of rock

$F$  = Formation Factor

$\phi$  = Fractional pore volume

$a$  = Constants with values ranging from 0.5 to 2.5

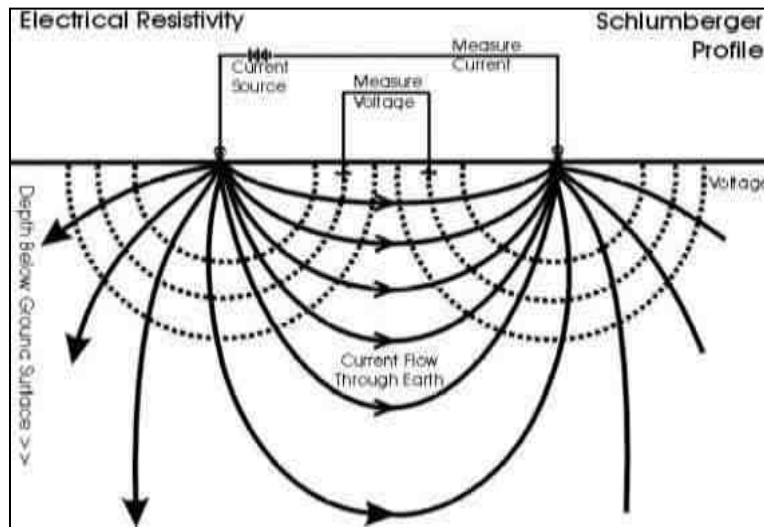
### 3.2.7 Survey Layout

The layout for a resistivity survey depends on the choice of the current and potential electrode arrangement, which is called electrode array. Here the present study is considered with Schlumberger array. In which the distance may be used for current electrode separation while potential electrode separation is kept on third to one fifth of the same. One interesting aspect in VES is the principle of reciprocity, which permits interchange of the potential and current electrode without any effect on the measured apparent resistivity.

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high-quality data acquisition system incorporating several innovation

features for Earth resistivity. In the presence of random earth Noises the signal to noise ratio can be enhanced by  $\sqrt{N}$  where N is the number of stacked readings. This SSR meter in which running averages of measurements  $[1, (1+2)/2, (1+2+3)/3 \dots (1+2+\dots+16)/16]$  up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

### RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes ( $C_1$  &  $C_2$ ) and measuring the resulting potential by two other electrodes called potential electrode ( $P_1$  &  $P_2$ ). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

#### 3.2.8 Data Presentation

It was inferred that the low resistance encountered at the depth between 88m Bgl. The maximum depth proposed out of proposed projects is 88m BGL. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

#### 3.2.9 Geophysical Data Interpretation

The geophysical data was obtained to study the lateral variations, vertical in homogeneities in the sub – surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area. This small quarrying operation will not have any significant impact on the natural water bodies.

### 3.3 Air Environment

The ambient air quality with respect to the study area of 10 km radius including the cluster quarries forms the baseline information. The prime objective of baseline air quality monitoring is to assess existing air quality of

the area. This will also be useful in assessing the conformity to standards of the ambient air quality during the operations

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality. These will also be useful for assessing the conformity to standards of the ambient air quality during the proposed quarries within the radius of 500m.

The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities. This section describes the identification of sampling locations, methodology adopted during the monitoring period and sampling frequency.

The baseline status of the ambient air quality has been assessed through scientifically designed ambient air quality network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

- Meteorological conditions.
- Topography of the study area.
- Likely impact area.

### 3.3.1 Meteorology & Climate

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.

A temporary meteorological station was installed at project site. The station was installed at a height of 4 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

#### Climate

- The climate is tropical in Krishnagiri. In Krishnagiri, the quantity of rainfall during summers surpasses that of winters. This climate is considered to be Aw according to the Köppen-Geiger climate classification. The temperature here averages 25.5 °C | 77.9 °F. The annual precipitation in this location is approximately 773 mm | 30.4 inch.
- Krishnagiri are in the middle of our planet and the summers are not easy to define. The optimal period to plan a visit would be during the months of January, February, March, April, May, June, July, August, September, October, November.
- The driest month is February. There is 6 mm | 0.2 inch of precipitation in February. On average, the highest amount of rainfall occurs during October with a mean value of 144 mm | 5.7 inch. With an average of 29.0 °C | 84.2 °F, April is the warmest month. On average, the month of December is considered to be the coldest time of year with temperatures averaging at around 21.9 °C | 71.4 °F.

<https://en.climate-data.org/asia/india/tamil-nadu/krishnagiri-34157>

#### Rainfall

The average annual rainfall and the 5 years rainfall is as follows:



**TABLE 3.14 – RAINFALL DATA**

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
1145.6	510.4	730.0	798.6	985.4	985

Source: <https://www.twadboard.tn.gov.in/content/Krishnagiri>

**TABLE 3.15 – METEOROLOGICAL DATA RECORDED AT SITE**

S.No	Parameters		Mar-2023	Apr-2023	May-2023
1	Temperature (°C)	Max	28.18	30.59	27.66
		Min	21.75	25.91	23.2
		Avg	24.96	28.25	25.43
2	Relative Humidity (%)	Avg	58.78	53.78	75.25
3	Wind Speed (m/s)	Max	4.78	4.33	4.43
		Min	1.41	1.65	1.56
		Avg	3.09	2.99	2.99
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		E,SSE	SE,ESE	W,WNW

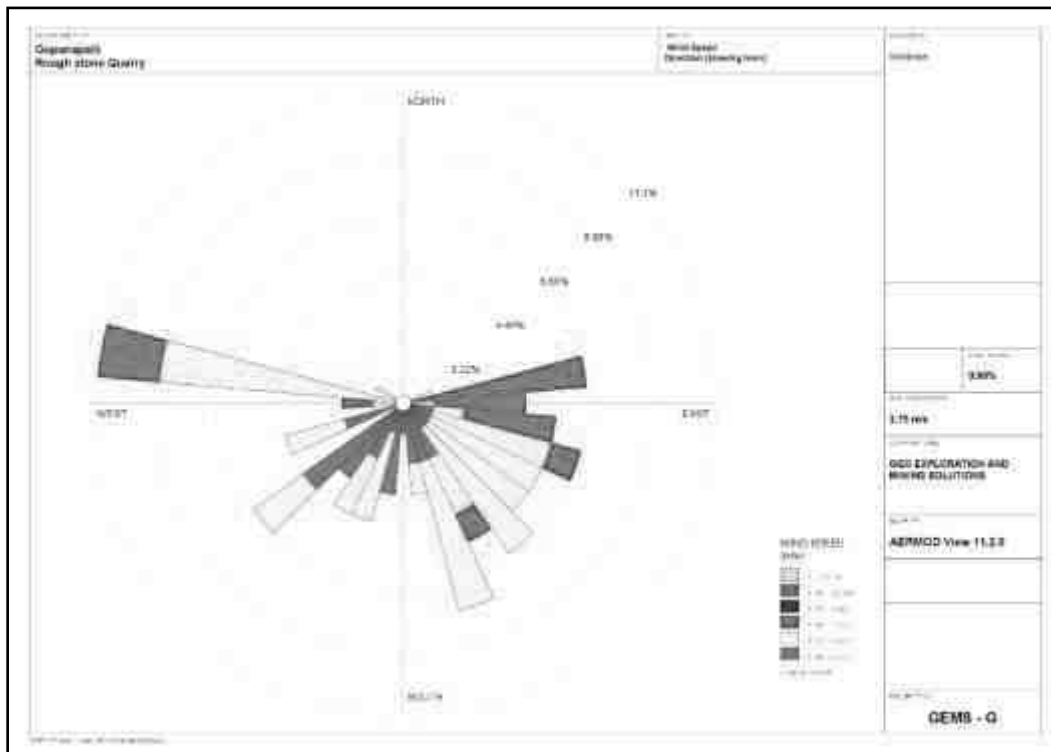
Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

### 3.3.2 Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Krishnagiri. A comparison of site data generated during the three months with that of IMD, Krishnagiri Agro reveals the following:

- The average maximum and minimum temperatures of IMD, Krishnagiri agro showed a higher in respect of on-site data i.e. in Gopanapalli village.
- The relative humidity levels were lesser at site as compared to IMD, Krishnagiri agro.
- The wind speed and direction at site shows similar trend that of IMD, Krishnagiri agro.

Windrose diagram of the study site is depicted in Figure. 3.8. Predominant downwind direction of the area during study season is North East to South West.

**FIGURE 3.15: WINDROSE DIAGRAM**

Environmental In the abstract of collected data wind rose were drawn on presented in figure No.3.15 during the monitoring period in the study area

1. Predominant winds were from E,SSE,SE, ESE,W,WNW
2. Wind velocity readings were recorded between 0.50 to 5.70 km / hour
3. Calm conditions prevail of about 0.00% of the monitoring period
4. Temperature readings ranging from 21.75-30.59<sup>0</sup>C
5. Relative humidity ranging from 53.78t o 75.25%
6. The monitoring was carried out continuously for three months

### 3.3.3 Methodology and Objective

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

### 3.3.4 Sampling and Analytical Techniques

**TABLE 3.16 – METHODOLOGY AND INSTRUMENT USED FOR AIR QUALITY ANALYSIS**

Parameter	Method	Instrument
PM <sub>2.5</sub>	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM <sub>10</sub>	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO <sub>2</sub>	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO <sub>x</sub>	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by Chennai Mettex Lab Private Limited & CPCB Notification

**TABLE 3.17 – NATIONAL AMBIENT AIR QUALITY STANDARDS**

Sl. No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10 $\mu\text{m}$ ) PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 $\mu\text{m}$ ) PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18<sup>th</sup> Nov 2009

\*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a Week 24 hourly at uniform interval.

\*\* 24 hourly / 8 hourly or 1 hourly monitored value as applicable shall be complied with 98 % of the time in a year. However, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

### 3.3.5 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at Eight (8) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period Mar2023-May2023. The baseline data of ambient air has been generated for PM<sub>10</sub>, PM<sub>2.5</sub>, Sulphur Dioxide (SO<sub>2</sub>) & Nitrogen Dioxide (NO<sub>2</sub>).

### 3.3.6 Ambient Air Quality Monitoring Stations

Eight (8) monitoring stations were set up in the study area as depicted in Figure 3.17 for assessment of the Proposed ambient air quality. Details of the sampling locations are as per given below.

**TABLE 3.18 – AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS**

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	12°37'55.67"N 77°48'43.03"E
2	AAQ-2	Core Zone	Project Area	12°37'57.88"N 77°48'38.13"E
3	AAQ-3	Gulisandiram	550m North	12°38'18.68"N 77°48'37.51"E
4	AAQ-4	Gopanapalli	2.5km NW	12°39'0.48"N 77°47'45.05"E
5	AAQ-5	Kelamangalam	4.8km SE	12°36'20.43"N 77°50'52.97"E
6	AAQ-6	Saragapalli	5.5km SW	12°36'13.94"N 77°46'2.00"E
7	AAQ-7	Karukondapalli	6.2km NE	12°39'25.44"N 77°51'52.21"E
8	AAQ-8	Idayanallur	5km NW	12°40'45.91"N 77°48'30.44"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

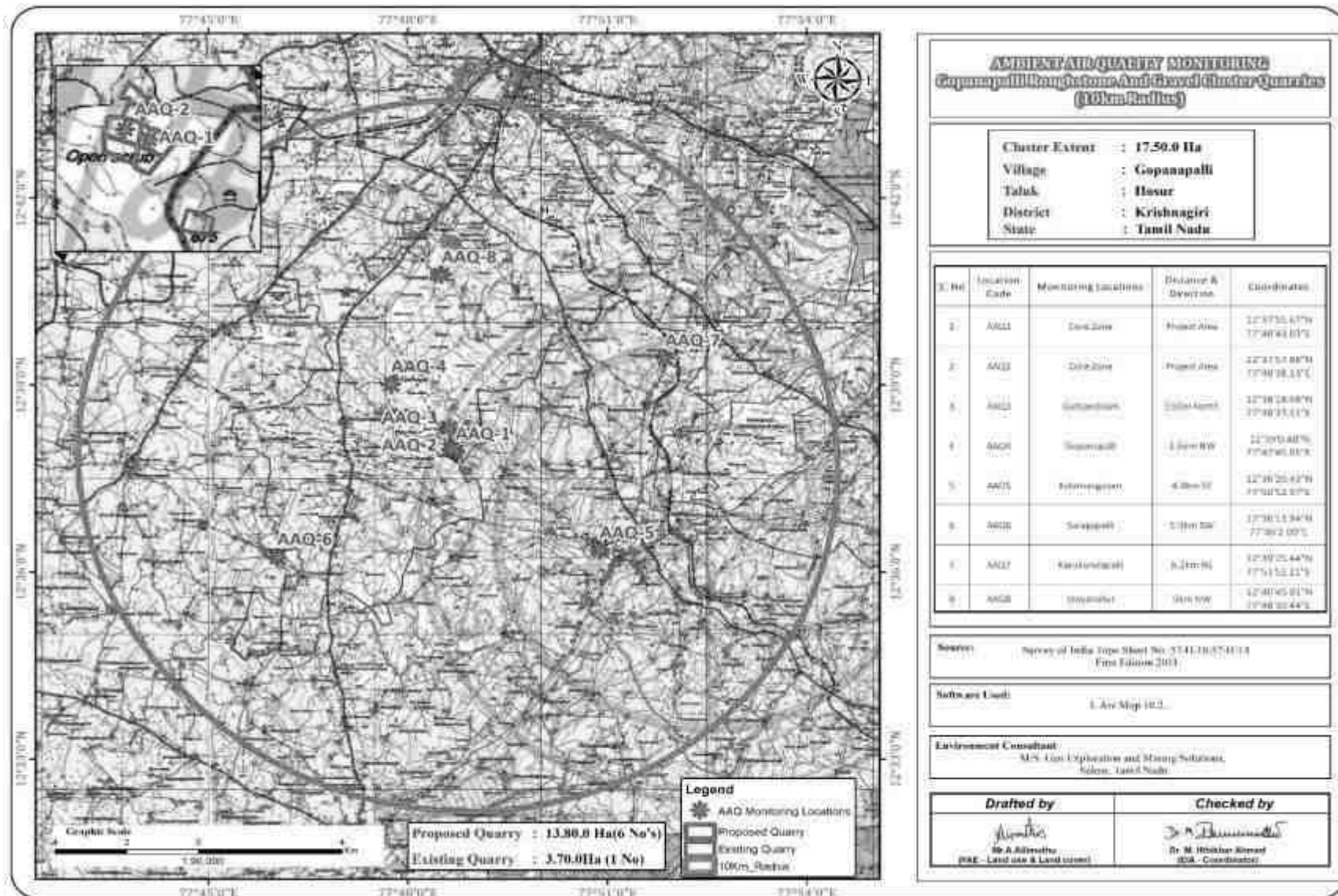
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**FIGURE 3.16: SITE PHOTOGRAPHS OF AMBIENT AIR MONITORING**



Source: Monitoring photographs from the FAE and Team Members

**FIGURE 3.17 AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS**



**TABLE 3.19 – AAQ1- CORE ZONE**

Period: Mar– May 2023

Location: AAQ1- Core Zone

Sampling Time: 24-hourly

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	62.5	23.5	46.9	8.5	27.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	64.3	22.1	47.7	7.3	25.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	65.5	23.4	45.5	7.9	26.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.2	23.9	46.4	8.2	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	63.7	24.1	45.3	8.1	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	63.9	23.5	46.0	7.5	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	64.7	24.8	45.5	9.2	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	64.9	23.5	46.8	9.7	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	63.5	24.3	45.9	9.3	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	63.8	23.6	45.2	9.9	25.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.1	24.1	46.4	9.1	26.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	64.8	23.8	46.2	8.4	25.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	65.9	22.8	46.6	7.9	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.7	22.1	45.0	7.3	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	66.6	23.6	45.3	7.8	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	66.1	23.8	46.7	6.2	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	66.7	24.5	45.0	6.9	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	67.5	24.3	46.9	6.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	60.2	23.1	45.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	62.3	23.8	45.6	8.5	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	61.4	23.6	46.5	8.9	24.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	63.7	24.1	45.3	8.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	63.5	23.5	46.2	7.8	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	62.2	24.2	45.6	7.4	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	64.5	24.6	46.1	8.8	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	64.8	24.8	46.2	8.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:**BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0), Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1) **Remarks:** The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.20 – AAQ2 – CORE ZONE

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>25</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	65.2	45.3	22.2	8.5	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	64.2	43.1	21.0	8.3	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	63.3	42.5	22.2	8.0	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.2	42.1	20.3	8.5	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	60.2	43.2	21.1	8.3	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	62.3	43.8	22.4	8.1	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	63.8	42.6	21.3	8.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	64.5	41.8	21.4	8.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	60.1	42.1	20.3	8.2	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	62.2	43.6	22.3	8.3	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	68.8	45.2	22.1	9.0	18.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	67.1	44.3	21.3	8.5	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	66.2	45.1	22.5	8.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.3	43.5	22.3	8.2	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	67.1	42.1	21.0	8.3	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.2	43.1	20.3	8.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	66.3	43.2	21.2	8.8	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	64.2	44.1	22.1	9.0	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	68.3	45.3	22.6	8.3	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	60.2	44.5	22.2	8.1	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	62.3	42.1	21.0	9.0	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	64.1	45.1	20.2	8.6	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	65.2	44.3	20.2	8.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	64.2	42.2	21.1	8.3	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	63.2	43.3	22.1	8.2	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	62.5	41.0	21.2	8.0	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

Period: Mar– May 2023

Location: AAQ2- Core Zone

Time: 24-hourly

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Ambient Air Monitoring Details	Particulate Pollutant	Gaseous Pollutant	Metals Pollutant	Organic Pollutant
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**TABLE 3.21 – AAQ3 – GULISANDIRAM**

Period: Mar– May 2023

*Location : AAQ3- Gulisandiram*

Sampling Time: 24-hourly



Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Ambient Air Monitoring Details	Period	Resuspended Particulate Pollutant Result			Gaseous Pollutant Result			Result		Metals Pollutant Result		Organic Pollutant Result		
Parameters	Time	SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
01.03.2023	7:00-7:00	63.2	43.5	22.1	6.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.1	44.2	23.0	6.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	60.1	43.2	21.2	6.3	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	68.2	42.1	21.1	6.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	65.2	40.2	20.1	6.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	64.3	41.3	20.2	5.2	18.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	62.2	43.3	21.2	5.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	60.1	45.2	22.1	6.8	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	63.4	44.1	22.0	5.2	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.5	43.2	22.1	6.1	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.2	40.2	22.3	5.6	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	68.2	42.3	22.5	6.6	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	60.2	44.2	23.6	6.4	24.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	62.3	43.1	24.5	6.0	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	61.3	45.2	25.2	6.3	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	60.2	44.2	26.1	7.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	62.3	43.3	22.1	7.4	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	61.2	41.2	21.2	7.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	62.2	40.1	22.2	6.3	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	67.3	42.3	20.2	6.5	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	68.2	43.6	21.3	6.5	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	66.1	44.5	22.5	6.3	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	65.3	45.2	22.4	5.4	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	68.2	44.2	22.5	5.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	60.2	43.1	20.1	6.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	62.5	42.5	21.2	6.9	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.22- AAQ4 – GOPANAPALLI

Period: Mar– May 2023

Location: AAQ4 - Gopanapalli

Sampling Time: 24-hourly

Unit		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{ng}/\text{m}^3$	$\text{ng}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{ng}/\text{m}^3$
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	63.5	48.2	22.1	7.5	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.5	47.2	22.3	7.1	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	62.1	42.3	21.2	7.8	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.0	46.0	20.5	7.2	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	60.2	48.3	22.1	8.3	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	68.2	43.5	22.5	8.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	67.3	47.3	21.3	7.0	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	65.2	47.4	22.2	7.4	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	64.2	44.5	22.1	7.6	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	63.2	45.5	22.3	7.3	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	61.2	49.2	22.1	8.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	60.2	49.2	21.2	8.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	62.3	48.3	22.1	7.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	64.2	47.6	23.2	6.2	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	68.2	48.2	22.1	9.1	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	60.2	44.5	22.5	8.4	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	62.4	45.2	20.1	8.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	63.5	46.1	20.1	7.4	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	60.2	45.3	22.1	8.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	63.2	44.4	21.2	8.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	62.1	45.0	20.0	8.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	60.2	46.0	21.0	8.6	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	62.3	47.2	22.1	7.4	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	64.2	47.1	21.2	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	68.3	45.2	22.1	8.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	69.1	44.5	21.3	8.4	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.23 – AAQ5 – KELAMANGALAM

NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	68.8	44.5	20.1	8.4	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
<b>Ambient Air Monitoring</b>		69.6	45.1	22.5	8.3	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
<b>Details</b>		67.4	42.6	20.2	7.9	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
<b>Parameters</b>		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
02.03.2023	7:15-7:15	69.3	43.7	21.2	8.1	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	68.7	42.6	22.7	8.3	25.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	66.5	41.5	21.5	8.4	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	63.3	41.9	21.4	7.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	62.4	42.8	21.3	7.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	61.6	45.5	23.1	8.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	64.5	44.9	22.5	8.5	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	62.5	43.1	22.8	7.6	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	63.5	42.6	21.3	7.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	70.5	42.8	22.5	8.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	71.5	42.5	22.4	8.4	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	68.7	41.4	21.8	7.6	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.3	42.3	22.3	7.9	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	70.7	40.6	21.8	8.3	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	69.9	41.4	21.5	8.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	70.5	40.3	20.2	7.3	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	69.9	42.4	21.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	68.3	40.4	21.3	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	67.8	41.9	20.6	9.0	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	69.4	41.6	21.2	7.2	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	68.5	40.1	21.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	68.4	41.2	21.3	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	67.9	41.3	20.6	8.4	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

Period: Mar– May 2023

AAQ5- Kelamangalam

Sampling Time: 24-hourly

**TABLE 3.24 – AAQ 6 - SARAGAPALLI**

Period: Mar– May 2023

Location: AAQ6 – Saragapalli

Sampling Time: 24-hourly

NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	65.2	45.3	22.4	6.5	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.03.2023	Monitoring Details	62.8	44.5	22.2	6.4	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	63.2	45.6	23.3	5.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	Parameters	62.5	42.4	21.2	6.5	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	NAAQ Norms	68.4	48.5	24.3	8.6	31.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	69.5	44.3	22.5	5.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	60.4	42.8	21.4	6.3	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	62.5	43.1	22.0	6.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	61.5	44.5	22.3	7.4	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.8	42.3	20.4	5.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.5	41.1	21.2	5.1	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	62.8	43.6	22.4	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	60.6	42.3	21.0	7.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	68.5	45.2	22.4	6.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	66.4	42.4	21.8	7.3	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	64.5	44.3	22.3	7.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	63.4	44.6	22.6	6.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	64.4	45.8	22.5	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	65.4	42.6	21.2	8.2	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	64.3	43.0	21.5	6.2	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	65.5	42.3	22.6	6.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	67.8	44.6	21.8	6.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	70.5	42.9	22.5	7.6	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	72.4	41.5	20.4	7.9	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	73.9	42.4	21.6	7.2	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	75.2	43.5	22.4	7.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1) Pb: BDL (DL:0.1); Ni: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.25 – AAQ7 - KARUKONDAPALLI

Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	67.4	45.2	23.1	7.6	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	68.3	45.5	24.2	7.7	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	69.2	43.6	24.3	7.2	18.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	68.1	45.1	24.1	7.5	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	67.5	47.1	23.1	9.2	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	68.6	47.6	23.3	9.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	66.5	42.8	23.0	8.1	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	68.4	44.6	24.3	6.2	17.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	67.6	43.8	24.4	7.8	17.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	68.7	44.9	23.2	8.3	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	69.4	45.5	23.5	7.3	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	68.4	46.6	24.3	7.1	18.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	68.5	42.5	24.2	7.3	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.4	45.8	24.4	6.8	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	69.3	44.0	23.4	6.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.7	45.6	24.0	8.1	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	67.4	46.2	24.3	7.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	65.6	46.3	24.4	6.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	64.3	43.2	23.1	7.3	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	67.4	42.9	24.3	7.5	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	65.3	43.5	24.2	8.4	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	68.2	44.9	23.4	7.6	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	72.5	45.8	24.5	7.4	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	71.9	47.7	25.3	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	72.4	48.6	24.2	6.5	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	70.6	45.1	23.4	6.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1) **Remarks:** The values observed for the pollutants given above are within the CPCB standards.

Period: : Mar– May 2023

Location: AAQ7– Karukondapalli

Sampling Time: 24-hourly

**TABLE 3.26 – AAQ8 - IDAYANALLUR**

Period: Mar– May 2023

Location: AAQ98– Idayanallur

Sampling Time: 24-hourly

NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{ng}/\text{m}^3$	$\text{ng}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\text{ng}/\text{m}^3$
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	64.5	45.5	22.5	6.2	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.4	41.6	23.8	7.8	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	69.3	45.5	21.0	6.6	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	67.7	42.8	21.9	5.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	66.9	43.5	22.5	5.9	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	67.6	42.1	21.8	6.3	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	68.4	41.6	23.6	6.9	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	69.8	42.5	21.3	5.3	24.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	67.4	43.5	22.5	5.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.9	44.1	23.1	5.8	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	68.7	42.3	21.8	5.4	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	67.8	43.6	24.2	6.9	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	66.8	41.6	22.5	5.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	69.4	41.5	21.8	5.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	65.2	42.6	22.4	5.3	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	67.4	43.9	23.9	7.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	68.8	41.8	21.4	8.5	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	69.3	42.5	21.9	8.9	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	67.9	43.6	22.1	7.2	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	66.4	42.8	24.3	7.8	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	69.9	41.3	21.4	8.6	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	68.4	44.6	23.9	8.5	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	67.2	43.9	21.4	7.5	24.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	66.6	42.8	22.1	7.2	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	69.4	43.9	23.4	8.5	25.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	67.7	42.8	21.1	8.7	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1) **Remarks:** The values observed for the pollutants given above are within the CPCB standards.

**TABLE 3.27: SUMMARY OF AAQ**

<b>PM2.5</b>	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	23.7	21.5	22.1	22.1	21.6	21.6	23.9	22.4
Minimum	22.1	20.2	20.1	20.0	20.1	20.4	23.0	21.0
Maximum	24.8	22.6	26.1	23.8	23.1	23.3	25.3	24.3
<b>NAAQ Norms</b>	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0

<b>PM10</b>	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	46.0	43.4	43.1	46.3	21.6	21.9	45.2	43.0
Minimum	45.0	41.0	40.1	42.3	40.1	41.1	42.5	41.3
Maximum	47.7	45.3	45.2	49.2	45.5	45.8	48.6	45.5
<b>NAAQ Norms</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<b>SO<sub>2</sub></b>	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	8.1	8.4	6.3	7.9	8.0	6.7	7.5	6.9
Minimum	6.2	8.0	5.1	6.2	7.2	5.0	6.2	5.2
Maximum	9.9	9.0	7.6	9.1	9.0	8.2	9.2	8.9
<b>NAAQ Norms</b>	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

<b>NO<sub>2</sub></b>	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	23.9	20.4	22.2	21.4	21.8	21.3	20.5	22.9
Minimum	21.5	18.3	18.2	19.2	18.9	18.6	17.5	20.1
Maximum	27.6	23.4	24.5	24.4	25.7	23.4	22.6	25.3
<b>NAAQ Norms</b>	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

**TABLE 3.28 – ABSTRACT OF AMBIENT AIR QUALITY DATA**

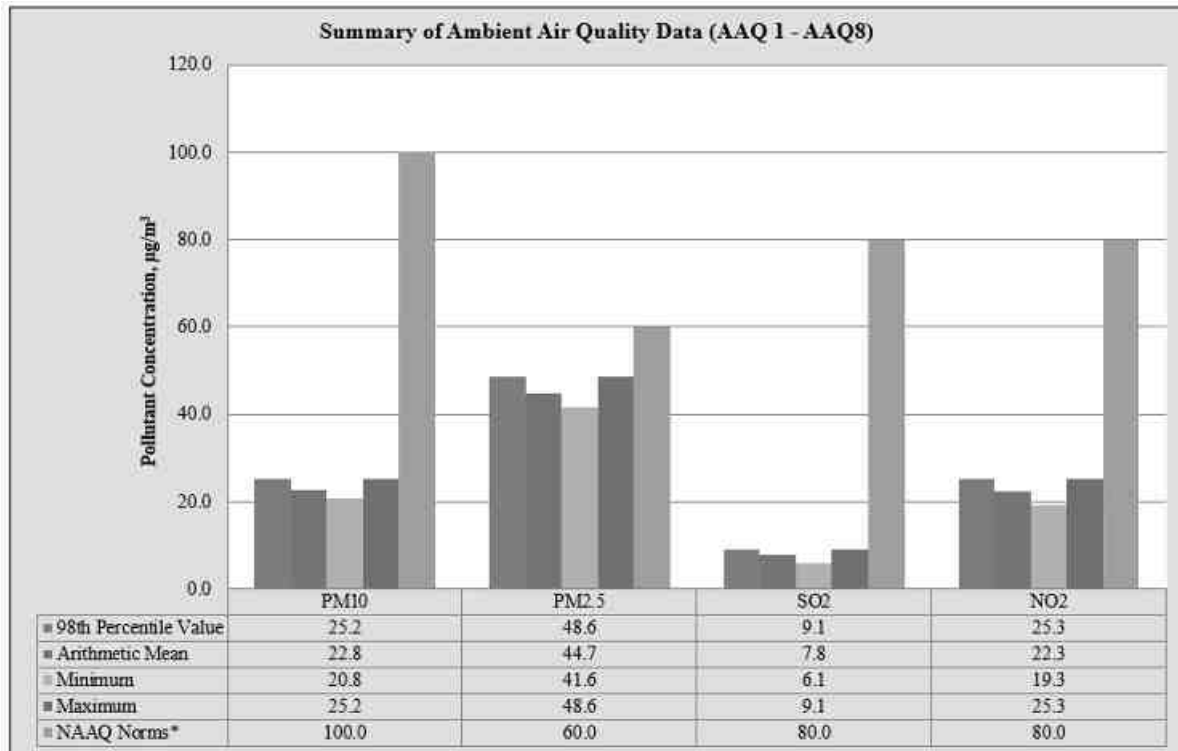
1	Parameter	PM2.5	PM10	SO <sub>2</sub>	NO <sub>2</sub>
2	No. of Observations	260	260	260	260
3	10 <sup>th</sup> Percentile Value	20.8	41.6	6.1	19.3
4	20 <sup>th</sup> Percentile Value	21.2	42.3	6.4	20.3
5	30 <sup>th</sup> Percentile Value	21.6	42.8	7.0	20.7
6	40 <sup>th</sup> Percentile Value	22.1	43.3	7.4	21.4
7	50 <sup>th</sup> Percentile Value	22.3	43.9	7.6	21.6
8	60 <sup>th</sup> Percentile Value	22.5	44.5	7.9	22.2
9	70 <sup>th</sup> Percentile Value	23.1	45.2	8.2	22.5
10	80 <sup>th</sup> Percentile Value	23.6	45.6	8.4	23.3
11	90 <sup>th</sup> Percentile Value	24.3	46.6	8.6	24.1
12	95 <sup>th</sup> Percentile Value	24.5	47.6	9.0	24.6
13	98 <sup>th</sup> Percentile Value	25.2	48.6	9.1	25.3
14	Arithmetic Mean	22.8	44.7	7.8	22.3
15	Geometric Mean	22.8	44.7	7.7	22.2
16	Standard Deviation	1.4	2.2	1.0	1.9
17	Minimum	20.8	41.6	6.1	19.3
18	Maximum	25.2	48.6	9.1	25.3
19	<b>NAAQ Norms*</b>	<b>60.0</b>	<b>100.0</b>	<b>80.0</b>	<b>80.0</b>
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

**Legend:**PM<sub>2.5</sub>-Particulate Matter size less than 2.5 µm; PM<sub>10</sub>-Respirable Particulate Matter size less than 10 µm; SO<sub>2</sub>-Sulphur dioxide; NO<sub>2</sub>-Nitrogen Dioxide; CO-Carbon monoxide; O<sub>3</sub>-Ozone; NH<sub>3</sub>-Ammonia; Pb-Particulate Lead; As-Particulate Arsenic; Ni-Particulate Nickel; C<sub>6</sub>H<sub>6</sub>-Benzene & BaP- Benzo (a) pyrene in particulate phase levels were monitored below their respective detectable limits.

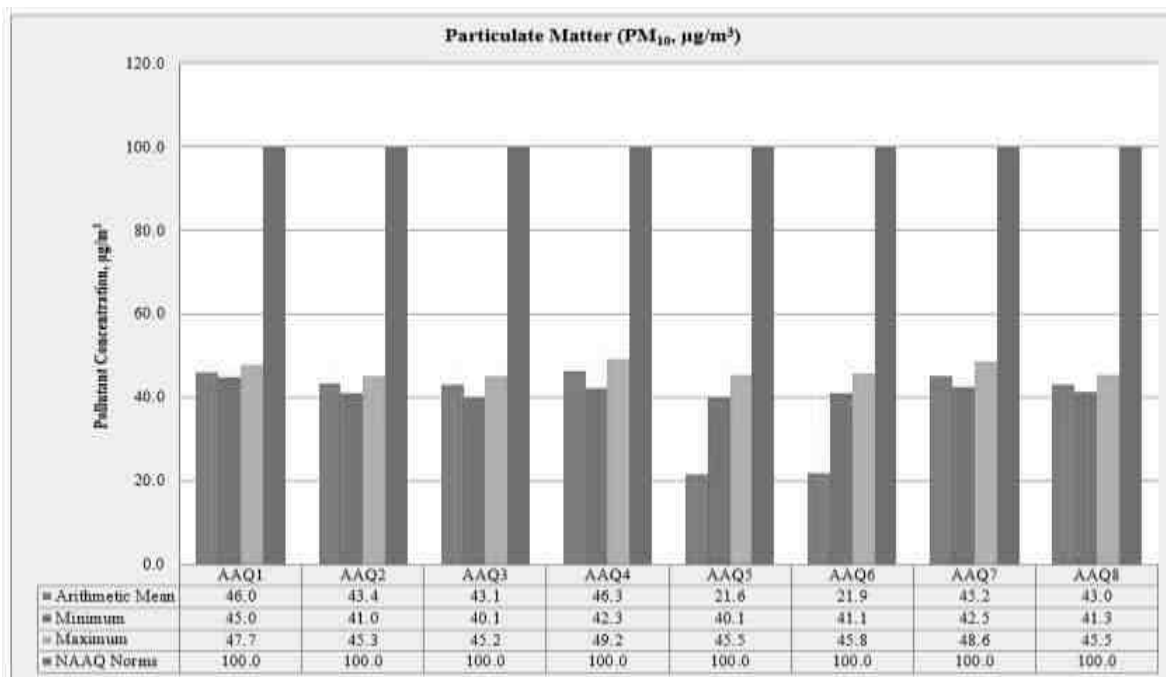
\* NAAQ Norms-National Ambient Air Quality Norms-Revised as per GSR 826(E) dated 16.11.2009 for Industrial, Residential, Rural and other Area.



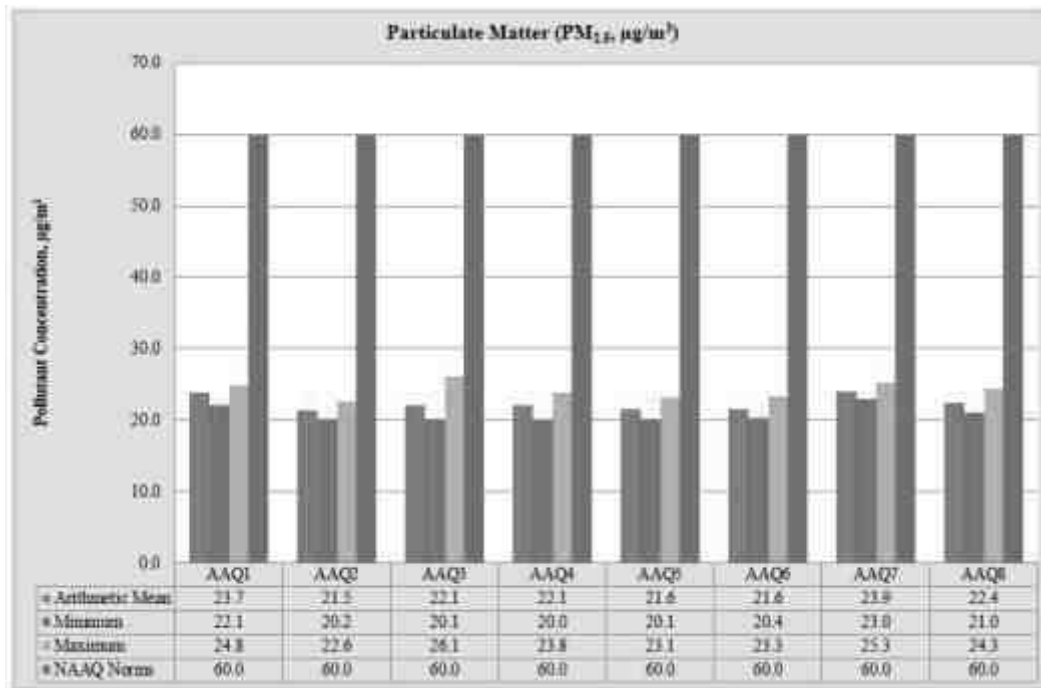
**FIGURE 3.18: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ 8**



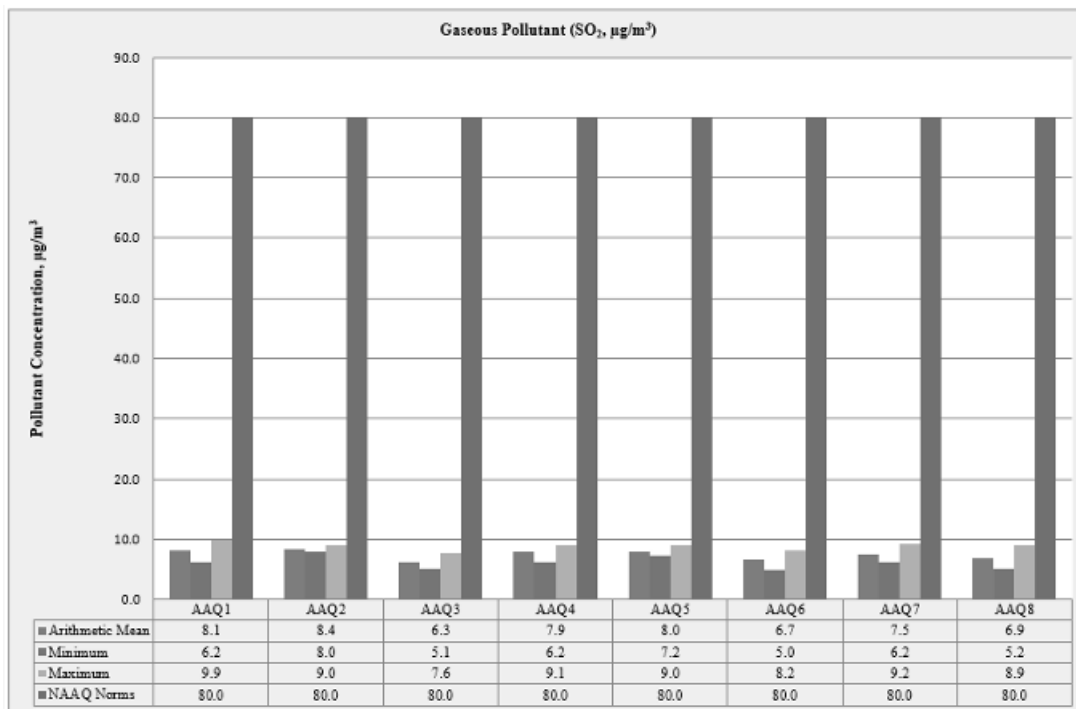
**FIGURE 3.19 : BAR DIAGRAM OF PARTICULATE MATTER (PM<sub>10</sub>)**

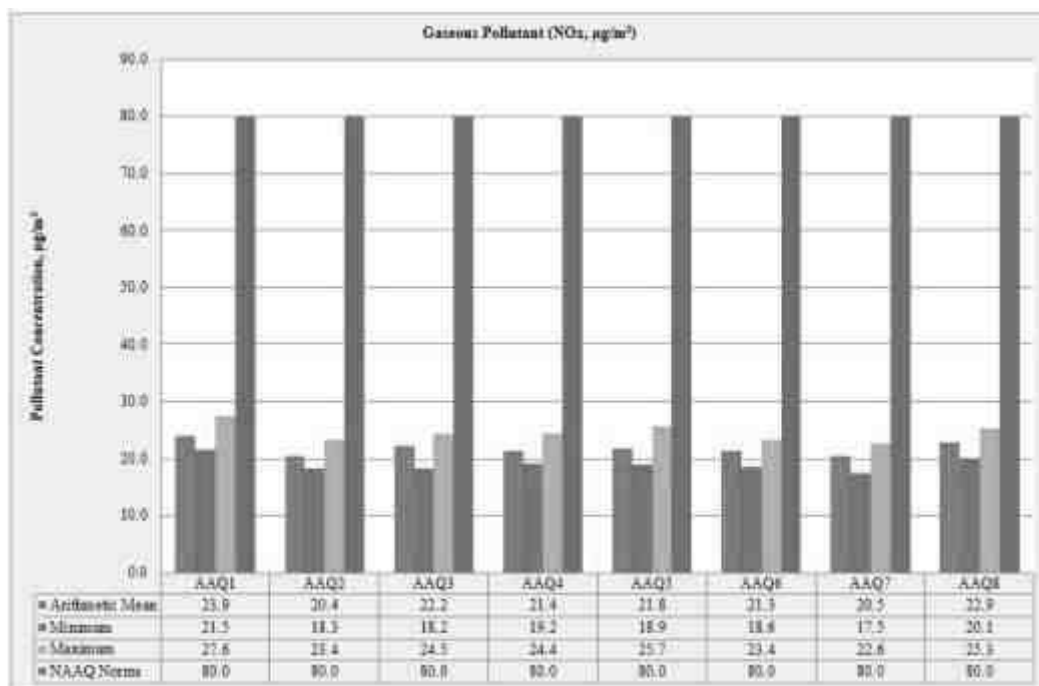


**FIGURE 3.20 A : BAR DIAGRAM OF PARTICULATE MATTER (PM<sub>2.5</sub>)**



**FIGURE 3.21 BAR DIAGRAM OF PARTICULATE MATTER (SO<sub>2</sub>)**



**FIGURE 3.22 : BAR DIAGRAM OF PARTICULATE MATTER (NO<sub>2</sub>)**

### 3.3.6 Interpretations & Conclusion

As per monitoring data, PM<sub>10</sub> ranges from 40.1 µg/m<sup>3</sup> to 49.2 µg/m<sup>3</sup>, PM<sub>2.5</sub> data ranges from 20.0 µg/m<sup>3</sup> to 26.1 µg/m<sup>3</sup>, SO<sub>2</sub> ranges from 5.0 µg/m<sup>3</sup> to 9.9 µg/m<sup>3</sup> and NO<sub>2</sub> data ranges from 17.5 µg/m<sup>3</sup> to 27.6 µg/m<sup>3</sup>. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

The minimum & maximum concentrations of PM<sub>10</sub> were found to be 40.1 µg/m<sup>3</sup> in Gulisandiram area & 49.2 µg/m<sup>3</sup> in Gopanapalli Village respectively. The minimum & maximum concentrations of PM<sub>2.5</sub> were found to be 20.0 µg/m<sup>3</sup> in Kelamangalam Village & 25.3 µg/m<sup>3</sup> in Karukondapalli Village area respectively. The maximum concentration in the core zone is due to the cluster of quarries situated within 500m radius.

### 3.3.7 FUGITIVE DUST EMISSION

Fugitive dust was recorded at 8 AAQ monitoring stations for 30 days average during the study period.

**TABLE 3.29– AVERAGE FUGITIVE DUST SAMPLE VALUES IN µg/m<sup>3</sup>**

AAQ Locations	Avg SPM (µg/m <sup>3</sup> )
AAQ 1	64.15
AAQ 2	64.28
AAQ 3	63.66
AAQ 4	63.43
AAQ 5	67.67
AAQ 6	65.87
AAQ 7	68.34
AAQ 8	67.61

Source: Line Diagram of Table 3.29

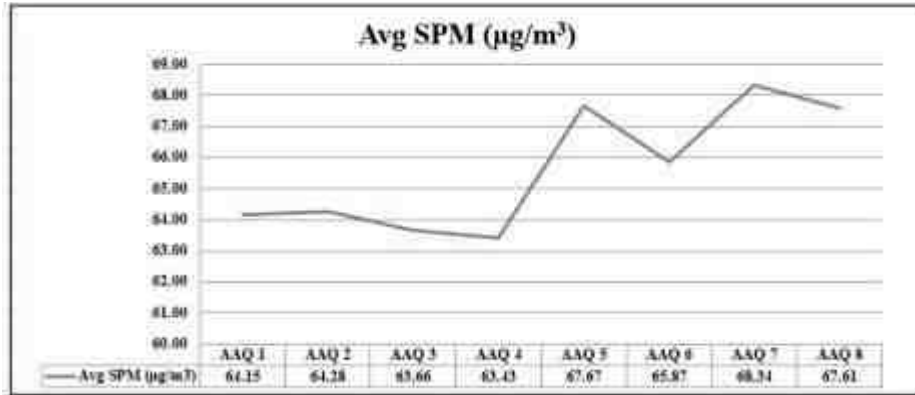
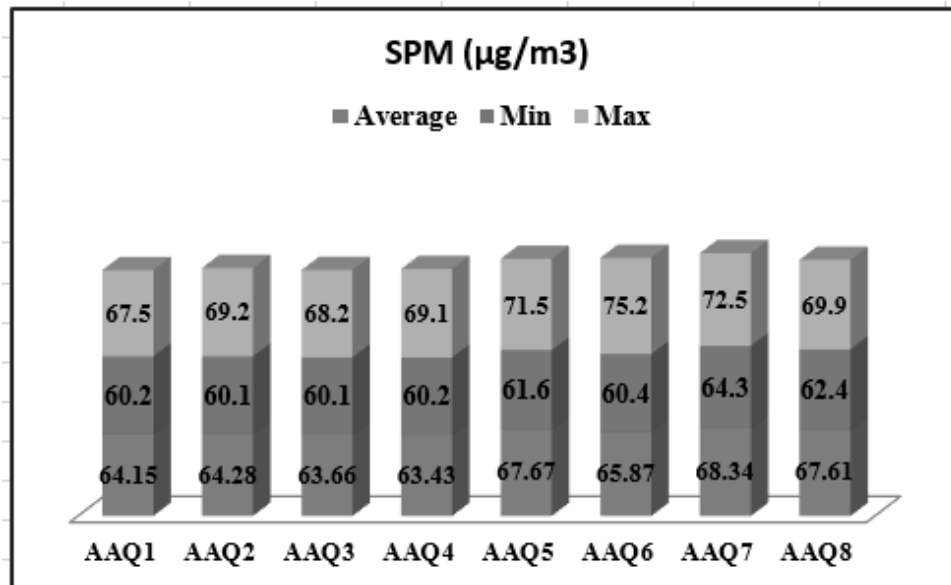


TABLE 3.30– FUGITIVE DUST SAMPLE VALUES IN µg/m<sup>3</sup>

SPM (µg/m <sup>3</sup> )	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
<b>Average</b>	64.15	64.28	63.66	63.43	67.67	65.87	68.34	67.61
<b>Min</b>	60.2	60.1	60.1	60.2	61.6	60.4	64.3	62.4
<b>Max</b>	67.5	69.2	68.2	69.1	71.5	75.2	72.5	69.9

Source: Calculations from Lab Analysis Reports



Source: Bar Diagram of table 3.30

### 3.4 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.

The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

### 3.4.1 Identification of Sampling Locations

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at eight (8) locations. The noise level monitoring locations were carried out by covering commercial, residential, rural areas within the radius of 10km. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study.

**TABLE 3.31 – DETAILS OF SURFACE NOISE MONITORING LOCATIONS**

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	N-1	Core Zone	Project Area	12°37'55.14"N 77°48'44.90"E
2	N-2	Core Zone	Project Area	12°37'59.89"N 77°48'36.36"E
3	N-3	Gulisandiram	550m North	12°38'18.47"N 77°48'37.70"E
4	N-4	Gopanapalli	2.5km NW	12°39'0.48"N 77°47'45.50"E
5	N-5	Kelamangalam	4.8km SE	12°36'20.93"N 77°50'52.08"E
6	N-6	Saragapalli	5.5km SW	12°36'13.91"N 77°46'1.72"E
7	N-7	Karukondapalli	6.2km NE	12°39'26.12"N 77°51'51.48"E
8	N-8	Idayanallur	5km NW	12°40'45.58"N 77°48'31.36"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

**FIGURE 3.23: SITE PHOTOGRAPHS OF NOISE MONITORING IN CLUSTER**



**P1**



**P2**

### 3.4.2 Method of Monitoring

Digital Sound Level Meter was used for the study. All reading was taken on the 'A-Weighting' frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by  $Leq$ , is used. Equivalent sound level, 'Leq', can be obtained from variable sound pressure level, 'L', over a time period by using following equation.

$$Leq = 10 \text{ Log } L / T \sum (10L_n/10)$$

Where L = Sound pressure level at function of time dB (A)

T = Time interval of observation

### 3.4.3 Analysis of Ambient Noise Level in the Study Area

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 3.6

Day time : 6:00 hours to 22.00 hours.

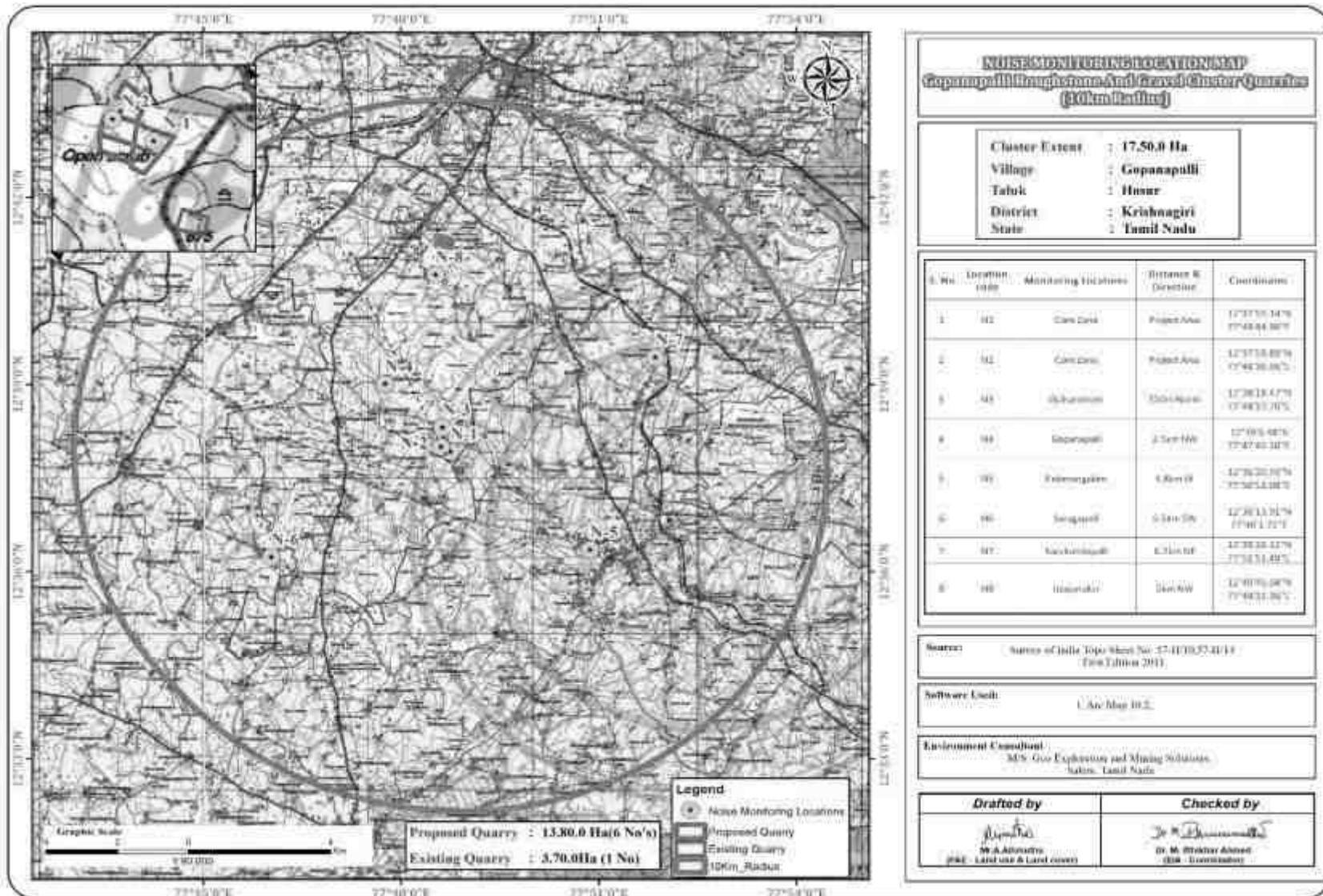
Night time : 22:00 hours to 6.00 hours

**TABLE 3.32 – NOISE MONITORING RESULTS IN CORE AND BUFFER ZONE**

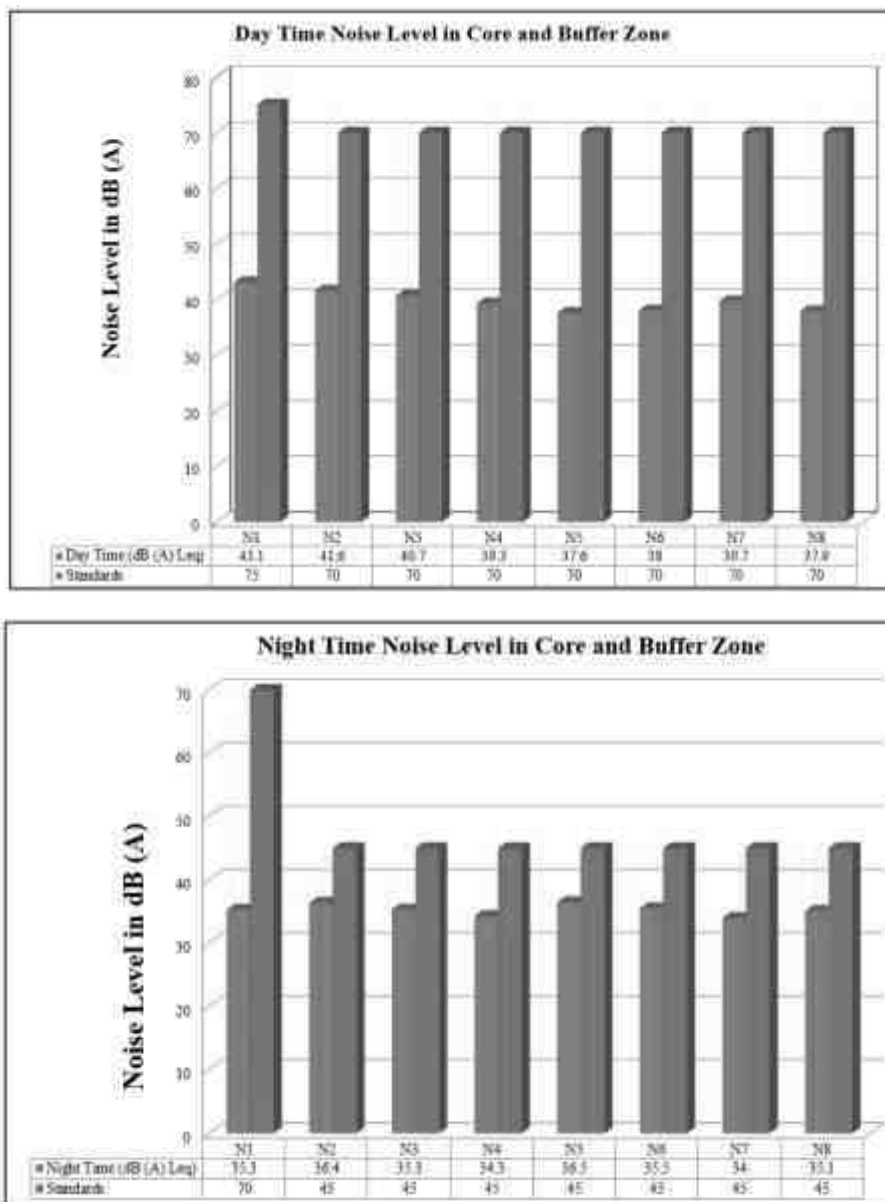
S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	42.3	35.0	<b>Industrial</b> <b>Day Time- 75 dB (A)</b> <b>Night Time- 70 dB (A)</b>
2	Core Zone	41.9	38.7	
3	Gulisandiram	41.4	36.8	
4	Gopanapalli	40.3	36.2	
5	Kelamangalam	40.0	36.8	<b>Residential</b> <b>Day Time- 55 dB (A)</b> <b>Night Time- 45 dB (A)</b>
6	Saragapalli	38.5	35.2	
7	Karukondapalli	39.7	36.5	
8	Idayanallur	39.2	37.9	

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

**FIGURE 3.24: NOISE MONITORING STATIONS AROUND 10 KM RADIUS**



**FIGURE 3.25: DAY & NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE**



**3.4.4 Interpretation & Conclusion:**

Ambient noise levels were measured at 8 (eight) locations around the project area considering cluster quarries. Noise levels recorded in core zone during day time were from 41.9-42.3 dB (A) Leq and during night time were from 35-38.7 (A) Leq. Noise levels recorded in buffer zone during day time were from 38.5 – 41.4 dB (A) Leq and during night time were from 35.2– 37.9 dB (A) Leq.

The values of noise observed in some of the areas are primarily owing to quarrying activities due to cluster of quarries within 500m radius, movement of vehicles and other anthropogenic activities. Noise monitoring results reveal that the maximum & minimum noise levels at day time were recorded in the range of 49.7 dB(A) in Gulisandiram Village and 31.2dB(A) in Core zone area and 43.6dB(A) in Gulisandiram Village & 31.3dB(A) in Gulisandiram, Karukondapalli, Idayanallur respectively in night time. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.



## 3.5 Ecological Environment

### 3.5.1. Study area Ecology

The core area extent of **3.00.0 Ha** of Rough stone quarry has an impact on the diversity of flora and fauna of the surrounding area. But present work was carried out on the detailed study of the impacts of the Rough stone quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The area applied for quarry lease is an almost hilly terrain area sloping towards the northeast side. The following methods were applied during the baseline study of flora, fauna, and diversity assessment.

### 3.5.2. Objectives of Biological Studies

- ☞ Undertake an intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
- ☞ Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
- ☞ Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
- ☞ To identify the impacts of mining on agricultural lands and how it affects.
- ☞ Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- ☞ Devise management & conservation measures for biodiversity.

### 3.5.3 Methodology of Sampling

Identification of vegetation in relation to the natural flora and crops was conducted through reconnaissance field surveys and onsite observations in core and buffer zone. The plant species identification was done based on the reference materials and also by examining the morphological characteristics and reproductive materials i.e. flowers, fruits and seeds. Land use pattern in relation to agriculture crop varieties were identified through physical verification of land and interaction with local villagers.

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and the Wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Act, 1972.

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a

time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 0700 to 1100 Hrs and 1430 to 1730 Hrs (Bibby et al. 2000).

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordimates. Presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

#### **a. Sampling**

A stratified simple random sampling procedure was employed to obtain a sample from study area. The study area was further stratified in different land use/ecosystems.

#### **b. Sampling Size**

Keeping in mind both random sampling technique and covering all land use patterns for the study following sampling locations were chosen depending up on the area of the proposed site.

#### **c. Timing of Study**

The study was carried out during morning and evening hours, to cover the different activity phases for important species such as time resting, feeding, hunting, and daily movements.

#### **d. Observations from Sampling**

The various observations relating to flora and fauna species are discussed in detail below, in separate sections.

#### **e. Equipment/ References**

- Canon Mark III Camera with 50-500mm lens– Snap shots taken
- Leica Binoculars (8x 20) to spot/identify species
- IUCN Red Data Book – <https://www.iucnredlist.org/species>

Ornithological/Entomological/Herpetological/Mammalian catalogues and pictorial descriptions from various authors and websites are followed for species identification.

### **3.5.4. Part I Field Sampling Techniques**

#### **3.5.4.1. Transect walk – Birds**

Six no transect lines with varying length (100m-300m) and fixed width (2m) were laid which cuts through the core and buffer areas of proposed site. The transect surveys were conducted from 0700 to 1100Hrs and 1430 to 1730Hrs (Bibby et al. 2000). All avifauna found along these transects were recorded for analysing the data. Counts were conducted while there is no heavy rain, mist or strong wind.

#### **3.5.4.2. Modified Pollard Walk – for Butterflies**

The Modified Pollard Walk (Pollard 1977, 1993, Walpole 1999) using fixed width transect walk method were employed to investigate butterfly spatial distribution, diversity and abundance at the different survey sites.

### 3.5.4.3. Visual Encounter Survey (VES) - reptiles and Amphibians

VES is a time-constrained sampling technique (Campbell and Christman, 1982; Corn and Bury, 1990). It needs a systematic search through an area or habitat for a prescribed time period (Campbell and Christman, 1982). The result of VES is measured against the time spent on search. VES technique is one of the simplest methods, and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

### 3.5.4.4. Observational methods- Mammals

For the purpose of recording mammals, we used two different observational techniques: (1) direct observations, and (2) recording of occurrences like holes, markings, scats, hairs, and spines (Menon 2003). For identification confirmations, photographs with a scale reference were used, and locations were recorded using a portable GPS device. Indigenous knowledge particularly that of the locals, was occasionally employed to compile a preliminary list of species and/or aid in the recognition of indicators.

### 3.5.4.5. Multiple Stage Quadrat – Vegetation

A variety of habitat or vegetation structure variables were measured using the Multiple Stage Quadrat sampling protocol (Sykes and Horrill 1977). All of those areas were sampled, and the major corners were temporarily delineated with colored ribbons. Each site was identified in the field using a compass and clinometer, and the plot's latitude, longitude, and elevation were recorded using a handheld Global Positioning System (Garmin 12XL).

### 3.5.4.6 Flora

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of the regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity of trees, Shrubs, and herbs respectively.

### 3.5.4.7 Flora Composition in the Core Zone

Taxonomically a total of 22 species belonging to 13 families have been recorded from the core zone mining lease area. The area applied for quarry lease is almost hilly terrain area sloping towards north Eastern side. Based on the habitat classification of the enumerated plants the majority of species were Herbs 8, followed by Shrubs 7, Trees 3, Grass 2, Creeper 1, and Cactus 1. Details of flora with the scientific name were mentioned in Table No. 3.1. The result of the core zone of flora studies shows that Fabaceae and Poaceae, Euphorbiaceae are the main dominating species in the study area mentioned in Table No.3.1. No species were found as threatened category.

**Table 3.33. Flora in the Core zone of Gopanapalli Village, Rough stone quarry**

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
<b>Trees</b>				
1.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae
3.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
<b>Shrubs</b>				
1.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae

2.	Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
3.	Tanner's cassia	Avaram	<i>Senna auriculata</i>	Fabaceae
4.	Hopbush	Virali chedi	<i>Dodonaea viscosa</i>	Sapindaceae
5.	Coromandel Boxwood	Karai	<i>Canthium coromandelicum</i>	Rubiaceae
6.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
7.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
<b>Herbs</b>				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
3.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
4.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
5.	Asparagaceae	Anai katrazhai	<i>Agave</i>	Asparagaceae
6.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
7.	Bindii	Nerunji mullu	<i>Tribulus terrestris</i>	Zygophyllaceae
8.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
<b>Creeper /Climbers</b>				
1.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
<b>Grass</b>				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
<b>Cactus</b>				
1.	Prickly pear	Nagathali	<i>Opuntia dillenii</i>	Cactaceae

(Sources: Species observation in the field study)



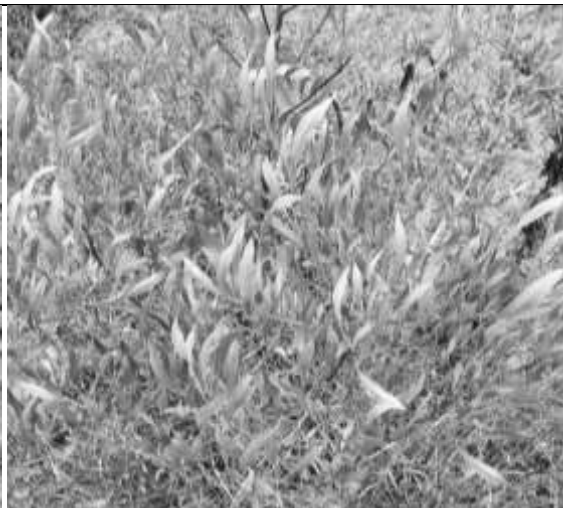
**a.Lantana camara**



**b.Calotropis gigantea**



**c. *Tridax procumbens***



**d. *Dodonaea viscosa***

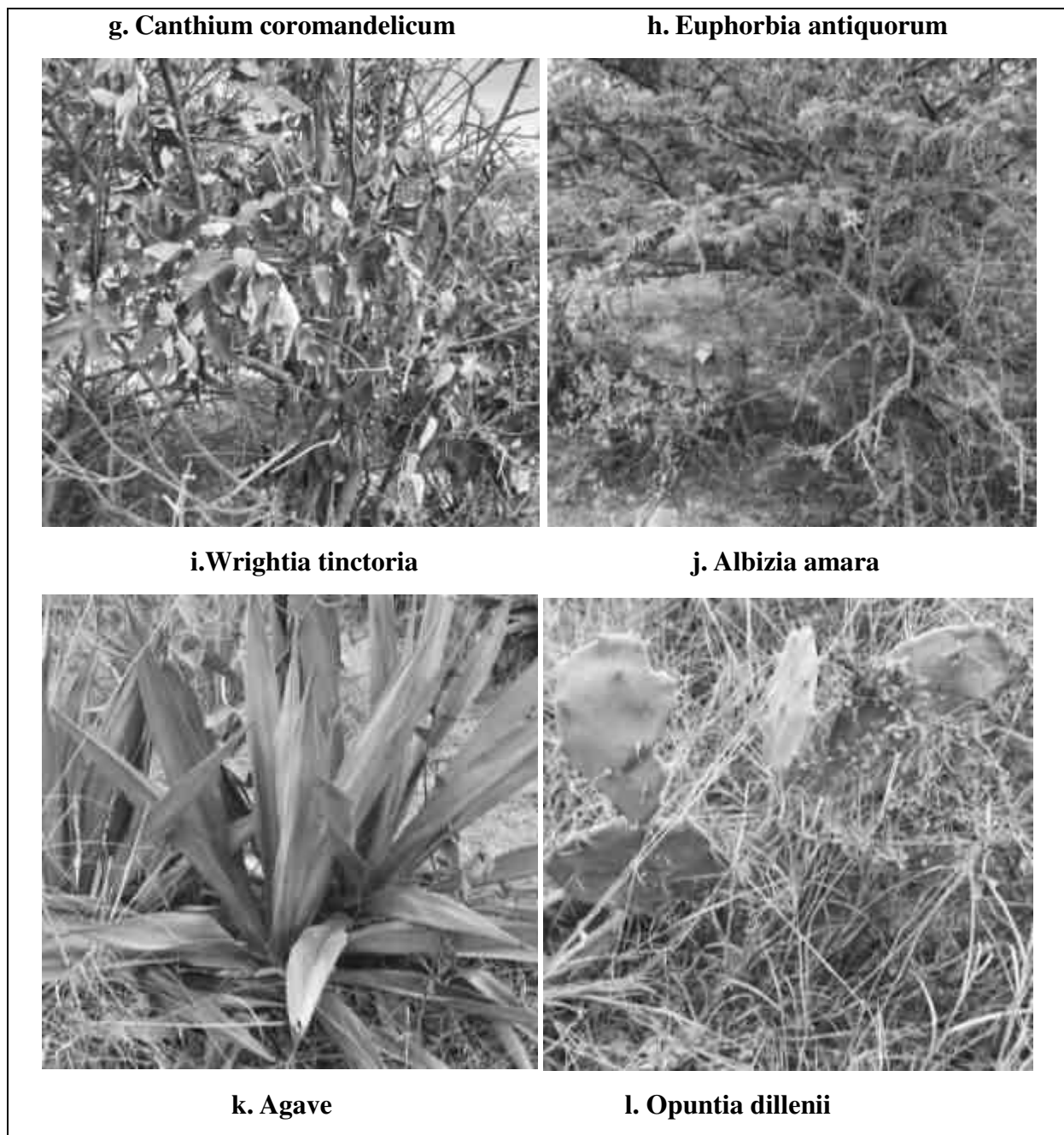


**e. *Tephrosia purpurea***



**f. *Parthenium hysterophorus***





**Fig No: 3.26. Flora species observation in the Core zone area**

**Table 3.34. Flora in Buffer Zone of Gopanapalli Village, Rough stone quarry**

S.No.	English Name	Vernacular Name	Scientific Name	Family Name
<b>Trees</b>				
1.	Peepal	Arasanmaram	<i>Ficus religiosa</i>	Moraceae
2.	Indian ash tree	Odiya maram	<i>Lannea coromandelica</i>	Anacardiaceae
3.	Neem	Vembu	<i>Azadirachta indica</i>	Meliaceae
4.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes
5.	Jackfruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
6.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
7.	Coral Tree	Kalyana murungai	<i>Erythrina variegata</i>	Papilionoide
8.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
9.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
10.	Indian almond	Padam maram	<i>Terminalia catappa</i>	Combretaceae
11.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae
12.	Indian ash tree	Odiya maram	<b><i>Lannea coromandelica</i></b>	Anacardiaceae
13.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
14.	Bidi leaf tree	Thiruvathi Plant	<i>Bauhinia racemosa</i>	Fabaceae
15.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
16.	White Bark Acacia	Vela maram	<i>Vachellia leucophloea</i>	Fabaceae
17.	Yellow flame tree	Perunkondrai	<i>Peltophorum pterocarpum</i>	Fabaceae

18.	Chinaberry	Malai vembu	<i>Melia azedarach L.</i>	Meliaceae
19.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae
20.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae
21.	Indian gooseberry	Nelli	<i>Emblica officinalis</i>	Phyllanthaceae
22.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae
23.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
24.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae
25.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
26.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
27.	Wild Date Palm	Icham	<i>Phoenix sylvestris</i>	Arecaceae
28.	Blue gum	Thayala maram	<i>Eucalyptus</i>	Myrtaceae
29.	Ceylon satinwood	Porasu	<i>Chloroxylon swietenia</i>	Rutaceae
30.	Indian Jujube	Ilanthai	<i>Ziziphus jujuba</i>	Rhamnaceae
31.	Millettia pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
32.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
33.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
34.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae
35.	River tamarind	Savundal maram	<i>leucaena leucocephala</i>	Fabaceae
36.	Portia tree	Poovarasam	<i>Thespesia populnea</i>	Malvaceae
37.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae
38.	Sacred Tree	Porasu	<i>Butea monosperma</i>	Fabaceae
39.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae



40.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae
41.	Bamboo	Moonghil	<i>Bambusa bambo</i>	Poaceae
<b>Shrubs</b>				
1.	Tanner's cassia	Avaram	<i>Senna auriculata</i>	Fabaceae
2.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
3.	Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
4.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
5.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
6.	Broom creeper	Kattukodi	<i>Cocculus hirsutus</i>	Menispermaceae
7.	Solanum pubescens	Malaisundai	<i>Solanum pubescens Willd</i>	Solanaceae
8.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
9.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae
10.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
11.	Jackal jujube	Suraimullu	<i>Ziziphus oenoplia</i>	Rhamnaceae
12.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
13.	Chinese chastetree	Nalla nochi	<i>Vitex negundo L</i>	Verbinaceae
14.	Thorn apple	Oomathai	<i>Datura stramonium</i>	Solanaceae
15.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae
16.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
17.	Bush Morning Glory	Neiveli Kattamani	<i>Ipomoea carnea</i>	Convolvulaceae
18.	Carray Cheddle	Kaarai	<i>Canthiumparviflorum</i>	Rubiaceae
19.	Castor oil plant	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae

20.	Flame of the Woods	Idlipoo	<i>Xoracoc cineia</i>	Rubiaceae
<b>Herbs</b>				
1.	Eggplant	Kathrikkai	<i>Solanum melongena</i>	Solanaceae
2.	Aloe barbadensis	Katrazhai	<i>Aloe vera</i>	Asphodelaceae
3.	Bara Gokhru	Yanainerunjil	<i>Pedaliium murex</i>	Pedaliaceae
4.	Commelina benghalensis	Kanavazha	<i>Commelina benghalensis</i>	Commelinaceae
5.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
6.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
7.	Chilli	Milakai	<i>Capsicum annuum</i>	Solanaceae
8.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae
9.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
10.	Tomato	Thakkali	<i>Solanum lycopersicum</i>	Solanaceae
11.	White dammar	Mookutipoondu	<i>Vicoa indica</i>	Asteraceae
12.	Cleome viscosa	Nai kadugu	<i>Celome viscosa</i>	Capparidaceae
13.	Bindii	Nerunji mullu	<i>Tribulus terrestris</i>	Zygophyllaceae
14.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
15.	Field beans	Avarai	<i>Hyacinth Beans</i>	Fabaceae
16.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
17.	Spiny amaranth	Mullu keerai	<i>Amaranthus spinosus</i>	Amaranthaceae
18.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
19.	Ban Tulsi	Melakai poondu	<i>Croton bonplandianus</i>	Euphorbiaceae
20.	Europeanblack nightshade	Manathakkali	<i>Solanumnigrum</i>	Solanaceae

21.	Ladies' fingers	Vendakkai	<i>Abelmoschus esculentus</i>	Malvaceae
22.	Majjigeberru gida	Purpannai	<i>Aerva monsoniae</i>	Amaranthaceae
23.	Vigna mungo	Ulunthu	<i>Vigna mungo</i>	Fabaceae
24.	chicken weed	Sirupasalai	<i>Portulaca quadrifida L</i>	Portulacaceae
25.	Bright eyes	Nithiyakalyani	<i>Catharanthus roseus</i>	Apocynaceae
26.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
27.	Indian mint	Karpura valli	<i>Coleus amboinicus</i>	Lamiaceae
<b>Climber</b>				
1.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
2.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
3.	Balloon plant	Mudakrttan	<i>Cardiospermum halicacabum</i>	Sapindaceae
4.	Bitter apple	Peikkumatti	<i>Citrullus colocynthis</i>	Cucurbitaceae
5.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae
6.	Wild jasmine	Malli	<i>Jasminum augustifolium</i>	Oleaceae
7.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae
8.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	Cucurbitaceae
9.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
10.	White pumpkin	Poosanaikkaai	<i>Cucurbitaceae</i>	Cucurbitaceae
11.	Rosary Pea	Gundumani	<i>Abrus precatorius</i>	Fabaceae
<b>Creeper</b>				
1.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae
2.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae

<b>Grass</b>				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae
3.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
<b>Cactus</b>				
1.	Prickly pear	Nagathali	<i>Opuntia dillenii</i>	Cactaceae
2.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae

\*E- Economical, M- Medicinal, EM- Both Economical and Medicinal, NE- Not evaluated.

### 3.5.5 Economically important Flora of the study area

The major irrigated crops in the district are paddy, ragi, turmeric, sugarcane, banana, tomato, groundnut, cotton, coconut and flowers. The irrigated area under vegetables, fruit and flowers. Farmers have adopted to cultivation methods through judicious use of water with modern water management techniques and technology.

### 3.5.6 Major Crops in the District

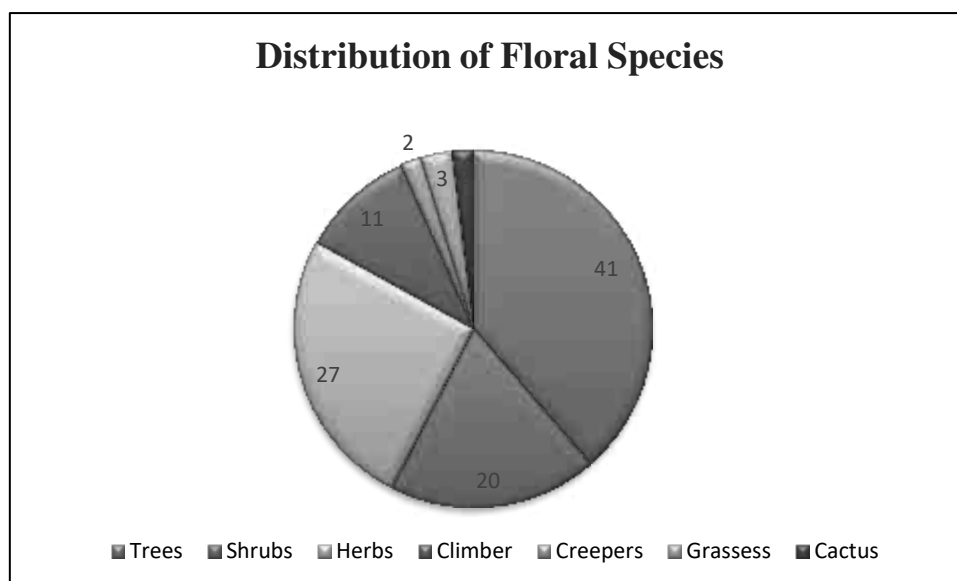
Owing to the climate and soil conditions Krishnagiri District suits to diverse type of cultivation. There are about 26 type of crops grown in the District including medicinal plants. Important crops grown in the District are Paddy, Ragi, Cholan, Red gram, Black gram, Horse Gram, Mango, Coconut, Cabbage, Banana, Tomato, Califlower etc., and the major cash crops are groundnut, flowers and cotton. **Source: DDS – Krishnagiri, 2019**

### 3.5.7 Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The buffer zone has one forest located away from the proposed project site and there are 106 species in the buffer zone study area in total, based on records. The floral (106) varieties among them Trees 41, herbs 27, shrubs 20, Climbers 11, Grasses 2, Creepers 2, and Cactus 2 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Cucurbitaceous, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.34. There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.35 and their % distribution is shown in Figure 3.27.

**Table 3.35: Number of floral life forms in the Study Area**

S. No	Plant Life Form	Number of Species
1	Trees	41
2	Shrubs	20
3	Herbs	27
4	Climber	11
5	Creepers	2
6	Grasses	3
7	Cactus	2
<b>Total No. of Species</b>		<b>106</b>



**Figure No. 3.27: Diagram showing % distribution of floral life forms**

### 3.5.8. The vegetation in the RF / PF areas, ecologically sensitive areas etc.

There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/ (existing as well as proposed) within 10 km of the mine lease area. Sanamavu R.F. is located about 6.5km on the eastern side. There is no Eco Sensitive zone/ critically polluted area/ HACA/CRZ located within 10 km radius of the area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise. No Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner.

There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive.

Thus, no forest land is involved in any manner. There are no impacts due to this mining activity. There are neither forests nor forest dwellers nor forest-dependent communities in the mine lease area. There shall be no forest-impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.

### 3.5.9 Fauna

The faunal survey has been carried out as per the methodology cited and listed out Mammals, birds, Reptiles, Amphibians, and Butterflies. All the listed species were compared with Red Data Book and Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET) and endemic species present in the core area.

### 3.5.10 Fauna Composition in the Core Zone

A total of 22 varieties of species were observed in the Core zone of Gopanapalli Village, Rough stone quarry (Table No.3.35) among them numbers of Insects 7, Reptiles 4, Mammals 2, and Avian 9. A total of 22 species have been recorded from the core mining lease area. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 11 species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 9 species of bird were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. Details of fauna in the core zone with the scientific name were mentioned in Table No. 3.35.

**Table No: 3.36. Fauna in the Core zone of Gopanapalli Village, Rough stone quarry, Krishnagiri District, Tamil Nadu**

Sl. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
<b>Insects</b>					
1.	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
2.	Grey pansy	Nymphalidae	<i>Junonia atlites</i>	Schedule IV	LC
3.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	Schedule IV	LC
4.	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
5.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	NL	NL
6.	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE	LC
7.	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	NL	LC
<b>Reptiles</b>					
1.	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NL	LC
2.	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL	LC
3.	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
4.	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV	NL
<b>Mammals</b>					
1.	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	NL
2.	Common rat	Muridae	<i>Rattus rattus</i>	Schedule IV	LC
<b>Aves</b>					

1.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
2.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL	LC
3.	House crow	Corvidae	<i>Corvus splendens</i>	NL	LC
4.	Sunbird	Nectariniidae	<i>Cinnyris asiaticus</i>	Schedule IV	LC
5.	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	NL	LC
6.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
7.	Koel	Cuculidae	<i>Eudynamis</i>	Schedule IV	LC
8.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NE	LC
9.	Indian Robin	Turdinae	<i>Saxicoloides fulicata</i>	Schedule IV	LC

\*NL- Not listed, LC- Least Concern

### 3.5.11. Fauna Composition in the Buffer Zone

Taxonomically a total of 63 species have been recorded from the buffer zone area. Based on habitat classification the majority of species were Birds 25 and the list of bird species recorded during the field survey and literature from the study area is given in Table 3.6, followed by Insects 21, Reptiles 9, Mammals 5(\*directly sighted animals & Secondary data), and amphibians 3. There are six Schedule II species and 40 species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 25 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Dominant species are mostly birds and insects, and three amphibian was observed during the extensive field visit is mentioned in table 3.37. The result of core & Buffer zone of fauna studies shows that Nymphalidae, Colubridae, and Scincidae are the main dominating species in the study area; it is mentioned in Table No.3.37. There is no schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.



**Table No: 3.37. Faunal Diversity in Buffer Zone of Gopanapalli Village, Rough stone quarry, Krishnagiri District, Tamil Nadu**

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
<b>Insects</b>					
1.	Indian honey bee	Apidae	<i>Apis cerana</i>	Schedule IV	LC
2.	Grey pansy	Nymphalidae	<i>Junonia atlites</i>	Schedule IV	LC
3.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	Schedule IV	LC
4.	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
5.	Common Pierrot	Lycaenidae	<i>Castalius rosimon</i>	NL	LC
6.	Common Leopard	Nymphalidae	<i>Phalanta phalantha</i>	Schedule IV	LC
7.	Plain Tiger	Nymphalidae	<i>Danaus chrysippus</i>	Schedule IV	LC
8.	Milkweed butterfly	Nymphalidae	<i>Danainae</i>	NL	LC
9.	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE	LC
10.	Lemon pansy	Nymphalidae	<i>Junonia lemonias</i>	Schedule IV	LC
11.	Common emigrant	Pieridae	<i>Catopsilia pomona</i>	Schedule IV	LC
12.	Common grass yellow	Pieridae	<i>Eurema hecabe</i>	Schedule IV	LC
13.	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
14.	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	NL	LC
15.	Ant	Formicidae	<i>Camponotus Vicinus</i>	NL	NL
16.	Tawny coster	Nymphalidae	<i>Danaus chrysippus</i>	Schedule IV	LC
17.	Dragonfly	Gomphidae	<i>Ceratogomphus pictus</i>	Schedule IV	LC
18.	Common Indian crow	Nymphalidae	<i>Euploea core</i>	Schedule IV	LC

19.	Grass yellow	Pieridae	<i>Eurema hecabe</i>	NL	LC
20.	Lesser grass blue	Lycaenidae	<i>Zizina Otis indica</i>	Schedule IV	LC
21.	Chocolate pansy	Nymphalidae	<i>Junonia iphita</i>	NL	LC
<b>Reptiles</b>					
1	Chameleon	Chamaelenidae	<i>Chameleon zeylanicus</i>	Sch II (Part II)	LC
2	Fan-Throated Lizard	Agamidae	<i>Sitanaponticeriana</i>	NL	LC
3	Indian cobra	Elapid snakes	<i>Naja naja</i>	Sch II (Part II)	LC
4	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV	NL
5	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
6	Common krait	Elapid snakes	<i>Bungarus caeruleus</i>	Schedule IV	NL
7	Indian wall lizard	Gekkonidae	<i>Hemidactylus flaviviridis</i>	Schedule IV	NL
8	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NL	LC
9	Russell's viper	Viperidae	<i>Vipera russeli</i>	Sch II (Part II)	LC
<b>Mammals</b>					
1	Indian palm squirrel	Sciuridae	<i>Funambulus palmarum</i>	Schedule IV	LC
2	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule (Part II)	LC
3	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	LC
4	Brown rat	Muridae	<i>Rattus norwegicus</i>	Schedule IV	LC
5	Indian hare	Leporidae	<i>Lepus nigricollis</i>	Schedule (Part II)	LC
<b>Aves</b>					
1.	Koel	Cucalidae	<i>Eudynamys</i>	Schedule IV	LC
2.	Black-headed Munia	Estrildidae	<i>Lonchuramalacca</i>	Schedule IV	LC

3.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NL	LC
4.	Indian Roller	Coraciidae	<i>Coracias benghalensis</i>	Schedule IV	LC
5.	Rock pigeon	<i>Columba livi</i>	<i>Columbidae</i>	Schedule IV	LC
6.	Indian Robin	Turdinae	<i>Saxicoloides fulicata</i>	Schedule IV	LC
7.	Pond-Heron	Ardeidae	<i>Ardeo labacchus</i>	Schedule IV	LC
8.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL	LC
9.	House crow	Corvidae	<i>Corvussplendens</i>	NL	LC
10.	Cattle Egret	Ardeidae	<i>Bubulcus ibis</i>	-	-
11.	Sunbird	Nectariniidae	<i>Nectariniidae</i>	NL	LC
12.	Indian blue robin	Larvivorabrunnea	<i>Muscicapidae</i>	Schedule IV	LC
13.	Asian green bee-eater	Meropidae	<i>Meropsorientalis</i>	NL	LC
14.	Hoopoe	Upupidae	<i>Upupaepops</i>	Schedule IV	LC
15.	Small blue Kingfisher	Alcedinidae	<i>Alcedo atthis</i>	Schedule IV	LC
16.	Rose-ringed parkeet	Psittaculidae	<i>Psittacula krameri</i>	NL	LC
17.	White Breasted king fisher	Alcedinidae	<i>Halcyon smyrnensis</i>	Schedule IV	LC
18.	Red-vented Bulbul	Pycnonotidae	<i>Pycnonotus cafer</i>	Schedule IV	LC
19.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
20.	Cuckoo	Cuculidae	<i>Cuculuscanorus</i>	Schedule IV	LC
21.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
22.	Woodpecker bird	Picidae	<i>Picidae</i>	Schedule IV	LC
23.	Two-tailed Sparrow	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
24.	Grey Francolin	Phasianidae	<i>Francolinus pondicerianus</i>	Schedule IV	LC

25.	House Sparrow	Passerinae	<i>Passer domesticus</i>	Schedule IV	LC
<b>Amphibians</b>					
1.	Indian Skipper Frog	Dicroglossidae	<i>Euphlyctis cyanophlyctis</i>	Schedule IV	LC
2.	Indian Pond Frog	Dicroglossidae	<i>Euphlyctis hexadactylus</i>	Schedule IV	LC
3.	Indian Toad	Dicroglossidae	<i>Bufo melanostictus</i>	Schedule IV	LC

\*NL- Not listed, LC- Least concern, NT- Near threatened

### 3.5.12. Aquatic Vegetation

The study area has a few seasonal small water bodies away from the proposed project site. But no major drainage system can be found within the study area. No Aquatic diversity is noticed in the core zone area. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. Typha angustata can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, Eichhornia crassipes has taken its roots and covers the entire water surface by its sprawl and invasion. All the aquatic plant species listed in Table 3.38.

**Table No: 3.38. List of aquatic plants observed in the study area**

S.No	Scientific Name	Common Name	Type
1.	<i>Ipomea aquatica</i>	Water Morning Glory	Marshy amphibious hydrophytes
2.	<i>Hydrilla verticillata</i>	Hydrilla	Submerged hydrophytes
3.	<i>Pistia stratiotes</i>	Water lettuce	Free floating hydrophytes
4.	<i>Cyperus articulatus</i>	Jointed flatsedge	Emergent Hydrophytes
5.	<i>Eichhornia crassipes</i>	Common water hyacinth	Free floating hydrophytes

\*LC- Least Concern, NA-Not yet assessed

### 3.5.13 Findings/Results

The assessment was carried out during the summer season. The inspection day was quite all right with respectable weather. The details of the flora and fauna observed are given below.

#### Records of threatened species in the area

No threatened species were observed

#### Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

#### Endemic Species of the Project areas

No endemic species were observed in the project area.

#### Migratory species of the Project areas

No migratory fauna observed in project area.

#### Migratory corridors and Flight paths

No migratory corridors and Flight paths were observed in project area.

#### Breeding and spawning grounds

No breeding and spawning grounds were earmarked for the wildlife fauna in project area.

There are no critically endangered, endangered, vulnerable, and endemic species were observed. As the rainfall in the area is scanty and as no toxic wastes are produced or discharged on account of mining, the proposed mining activity is not going to have any additional and adverse impacts on these RET species. There are no ecologically sensitive areas or protected areas within the 10 Km radius. Hence no specific conservation for conservation of any RET species or Wildlife is envisaged.

**Sanamavu R.F. is located about 6.5km** on the eastern side. There is no Eco Sensitive zone/ Critically polluted area/ HACA/CRZ located within 10 km radius of the area. There are no National Parks, Sanctuaries,

Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise.

There are no endangered, endemic, and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

#### **3.5.14 Conclusion**

The observations and assessment of the overall ecological scenario involve details such as classification of Biogeographic zone, eco-region, habitat types, and land cover, distances from natural habitats, vegetation/forest types, and sensitive ecological habitats such as Wetlands sites, Important Bird areas, migration corridors of important wildlife etc. Such baseline information provides better understanding of the situation and overall ecological importance of the area. This baseline information viewed against proposed project activities help in predicting their impacts on the wildlife and their habitats in the region. Data collected and information gathered from secondary literature on flora, fauna, protected area, natural habitats, and wildlife species etc., and consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

### 3.6 SOCIO ECONOMIC ENVIRONMENT

An essential part of environmental study is socio-economic environment incorporating various facts related to socio-economic conditions in the area, which deals with the total environment. Socio economic study 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 features of aesthetic significance such as temples, historical monuments etc. at the baseline level. This would help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. Socio-economic study of an area provides a good opportunity to assess the socio-economic conditions and possibly makes a change in living and social standards of the particular area benefitted due to the Project. It can undoubtedly be said that the project will provide direct and indirect employment and improve the infrastructural facilities and standards of living of the area.

#### 3.6.1 Objectives of the Study

- The objective of this socio-economic study is:
  - To know the current socio-economic situation in the study area covering the sub factors of education, health, sanitation, water, employment and business
  - To recommend practical strategic interventions to improve the area
  - To help in providing better living standards
  - To help in providing better employment opportunities for locals in the study area.

#### 3.6.2 Scope of Work

- ❖ To study the socio-economic environment of the study area
- ❖ Data collection during primary field survey and collate it with the secondary sources
- ❖ Identification of possible impacts from the project
- ❖ Prediction of probable impact due to the project
- ❖ Mitigation measures
- ❖ Action plan for the implementation of mitigation measures.

#### 3.6.3 Methodology

##### Collection of Data

Data for this project was collected from primary sources like Field survey, Interviews of locals and secondary sources like Government department, Maps, Literature research etc. GEMS conducted the socio-economic **baseline survey using a survey team of Field Assistants and a Supervisor apprising them about the project area and relevant documents**. The Survey was conducted **using Simple Random Sampling method** with a well-structured questionnaire prepared enabling subjects to reply appropriately. The questionnaires were designed to suit the subjects considering their rural background enabling them to furnish correct information and data to the extent possible. Primary data has been collected at village level, household level by questionnaires and focused group discussions. The study area for the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and Outer Zone (7 - 10 km).

### Presentation of Data and Analysis

The data collected were presented in a suitable, concise form i.e. tabular or diagrammatic or graphic form for further analysis. These tabulated data were interpreted and analyzed with the help of various qualitative techniques and ideographic approaches.

A detailed socio-economic survey was conducted in the buffer zone (10 km radius of the Roughstone quarry at village: Gopanalli Taluk: Hosur District: Krishnagiri, Tamil Nadu) to identify the social and economic impacts. To get an overview of the villager's views and preferences about the plant, socio-economic parameters i.e., population growth, density, literacy etc. were taken to determine the impact of the quarry production on the human population of the study area.

### 3.6.4 Population Growth Rate

In 1991, there were only 21 districts in the State of Tamil Nadu. In 2001, eight new districts were created by reorganising the territorial jurisdiction. The nine districts are – Krishnagiri, Namakkal, Perambalur, Viluppuram, Thiruvannamalai, Thiruvarur, Nagapattinam, and Theni. The population and its growth trend are important economic factors in a developing economy.

Year	Tamil Nadu	India
1941	11.91	14.22
1951	14.66	13.31
1961	11.85	21.51
1971	22.30	24.80
1981	17.50	24.66
1991	15.39	23.86
2001	11.19	21.34
2011	15.61	5.96
2021	5.96	1.0

### 3.6.5 Krishnagiri District

Krishna' refers to 'black' and 'giri' refers to 'hill'. This district is gifted with black granite hillocks and named as "krishnagiri". The region came under the rule of Krishna Deva Raya and hence it might have been named after this king.

Krishnagiri district is bounded by Vellore and Thiruvannamalai districts in the East, Karnataka state in the west, State of Andhra Pradesh in the North Dharmapuri District in the south. Its area is **5143 Sq. Kms.** This district is



elevated from 300m to 1400m above the mean sea level. Source: <https://krishnagiri.nic.in/about-district/district-at-a-glance/>

*It is located between 11° 12'N to 12° 49'N Latitude, 77° 27'E to 78° 38'E Longitude.*

### 3.6.6 Study Area

Detailed socio-economic survey was conducted in the study area (Core and buffer zone) within 10 km radius of the area village: Gopanapalli Taluk: Hosur District: Krishnagiri, Tamil Nadu. In order to determine the impact of the proposed project on nature and inhabitant. To get an overview of the villagers and their perspectives about this proposed activity, different demographic parameters and social aspects such population density, sex ratio, literacy rate, worker ratio etc. has been identified, analyzed, studied together. These impacts may be beneficial or disadvantageous. If disadvantageous anticipated suggestions measures are advocated in order to have collective development.

### 3.6.7 Demographic pattern of 10km study area characteristics a comparative analysis

**Table 3.39 Shows the socio-economic profile of the study area as compared to district, state and national level socio-economic profile**

Particular	India	Tamil Nadu	Krishnagiri District	Study Area (10km Radius)
Area (in sq. km.)	3,287,263	130058	5143	326
Population Density/ sq. Km.	368	554	370	483
No. of Households	249454252	13357027	448053	36700
Population	1210569573	72147030	1879809	157502
Male	623121843	36137975	960232	80029
Female	587447730	36009055	919577	77473
Scheduled Tribes	104281034	794697	22388	820
Scheduled Castes	201378086	14438445	267386	28318
Literacy Rate	73%	80%	72%	70%
Sex Ratio (Females per 1000 Males)	943	996	956	968

**Source:** Census of India, 2011

Rough stone quarry is located in the Krishnagiri district of the State of Tamil Nadu. The Total No. of villages observed within the 10 km radius from the project area is 36. two taluk falls within the 10 km buffer area. The population as per 2011 Census records is 157502 (for 10 km radius) and there is total 36,700households residing

within the studied area. Average household size is 4 which is the standard family size in India. Sex ratio of the study area is 968 (females per 1000 males). Total SC and ST population distribution is 28318,820 respectively. The literacy rate in the Study area is observed to be 70.07 The village - wise demographic features of the study area as per area classification are given in Table 3.41 below:

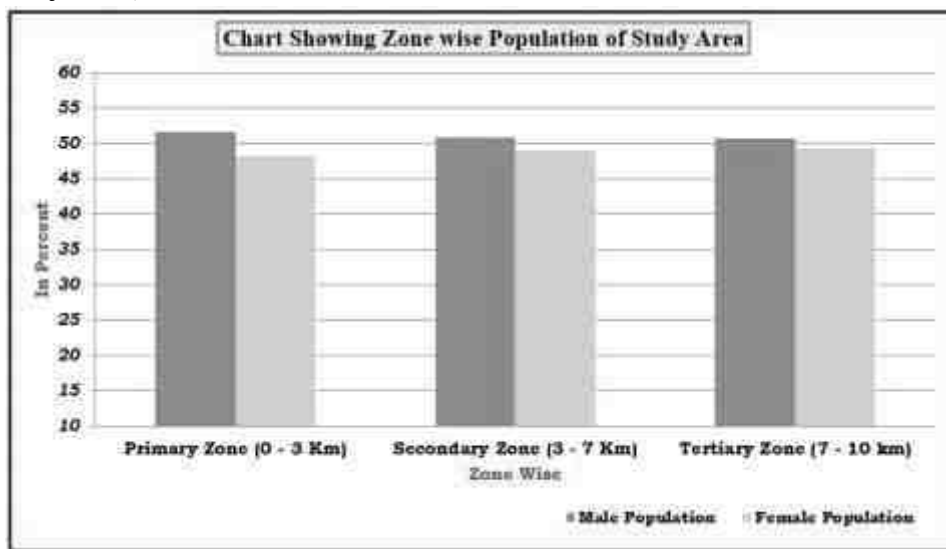
### 3.6.8 Population Distribution

Total number of males in the study area is **80029** and females are **77473**. The sex ratio was calculated to be 968 females per 1000 males within the 10 km buffer area which is not very poor compared to the national sex ratio. Within the study area, it was observed child population is increasing as per census 2011 participation increase in current scenario due to proper treatment provided to infants this is because of the awareness of the family.

**Table 3.40 Zone wise Demographic Profile of Study Area**

Zone	No. of Villages	Total Household	Total Population	Male Population	%	Female Population	%
Primary Zone (0 - 3 Km)	4	1714	7542	3898	51.68	<b>3644</b>	48.32
Secondary Zone (3 - 7 Km)	15	14526	62666	31899	50.90	<b>30767</b>	49.10
Tertiary Zone (7 - 10 km)	17	20460	87294	44232	50.67	<b>43062</b>	49.33
<b>Study Area (0-10 km)</b>	<b>36</b>	<b>36700</b>	<b>157502</b>	<b>80029</b>	<b>50.81</b>	<b>77473</b>	<b>49.19</b>

*Source: Census of India, 2011*



**Figure No. 3.28 Population of study area**

- ✓ Above table identifies the presence of villages and their subsequent population divided under three zones from plant boundary (i.e., Primary, secondary and tertiary zone).
- ✓ Primary zone has 4 villages where as much as 1714 households with 7542 population are located. Mostly lying on Built-up land for their livelihood and substance.

- ✓ Secondary and tertiary zone both comprise of 15 and 17 villages having a total population of 62666 and 87294 respectively.

Table 3.41 Village wise Demographic Profile of the Study Area (Core and Buffer Zone)

Sno	Name	No.of Households	Total population	Total Male	Total Female	Population below 6	Male below 6	Female below 6	SC population	SC Male	SC Female	ST population	ST Male	ST Female	Literate population	Male Literate	Female Literate	Total workers	Main workers	Marginal workers	Nonworkers
<b>0-3km</b>																					
1	Gopanapalli	342	1388	716	672	148	79	69	276	152	124	2	1	1	836	478	358	806	748	58	582
2	Mugalur	609	2593	1352	1241	273	151	122	1023	528	495	0	0	0	1471	862	609	1072	1039	33	1521
3	Nagappan Agraharam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Hosappuram	763	3561	1830	1731	392	211	181	773	399	374	0	0	0	2048	1166	882	1822	1693	129	1739
	<b>Total</b>	<b>1714</b>	<b>7542</b>	<b>3898</b>	<b>3644</b>	<b>813</b>	<b>441</b>	<b>372</b>	<b>2072</b>	<b>1079</b>	<b>993</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>4355</b>	<b>2506</b>	<b>1849</b>	<b>3700</b>	<b>3480</b>	<b>220</b>	<b>3842</b>
<b>3-7km</b>																					
1	Kothapalli	411	1624	845	779	162	91	71	581	302	279	0	0	0	1000	578	422	754	689	65	870
2	Kothagondapalli	1087	4706	2346	2360	552	277	275	1795	881	914	11	7	4	2953	1614	1339	1977	1887	90	2729
3	Poonapalli	738	3061	1542	1519	319	170	149	544	270	274	9	5	4	2000	1111	889	1424	890	534	1637
4	Saragapalli	709	2862	1451	1411	284	137	147	778	393	385	0	0	0	1712	964	748	1270	824	446	1592
5	Jagirkarupalli	393	1905	1004	901	231	119	112	132	66	66	0	0	0	1046	630	416	1058	883	175	847
6	Kundumaranapalli	863	3867	1972	1895	436	199	237	1157	594	563	0	0	0	2243	1342	901	1784	1562	222	2083
7	Bodichipalli	1176	4982	2549	2433	558	271	287	432	210	222	0	0	0	2850	1638	1212	2108	1674	434	2874
8	Jakkeri	914	3957	1989	1968	383	190	193	844	420	424	127	67	60	2347	1337	1010	2088	1735	353	1869
9	Anekollu	628	2858	1471	1387	336	179	157	136	64	72	1	1	0	1482	861	621	1713	1496	217	1145
10	Mallasandram	907	4062	2130	1932	480	224	256	343	172	171	26	10	16	2272	1349	923	1945	1720	225	2117
11	Achettipalli	697	3066	1562	1504	368	172	196	910	472	438	0	0	0	1861	1056	805	1429	1405	24	1637
12	Nagondapalli	674	2929	1513	1416	315	157	158	1096	563	533	0	0	0	1918	1110	808	1310	928	382	1619
13	Muthuganapalli	862	3460	1738	1722	280	138	142	850	425	425	0	0	0	2197	1221	976	1444	1126	318	2016
14	Karukkanahalli	1369	6006	3103	2903	776	415	361	414	203	211	74	26	48	3113	1838	1275	3497	3021	476	2509
15	Kelamangalam (TP)	3098	13321	6684	6637	1542	745	797	1782	910	872	27	15	12	8861	4822	4039	5522	5242	280	7799
	<b>Total</b>	<b>14526</b>	<b>62666</b>	<b>31899</b>	<b>30767</b>	<b>7022</b>	<b>3484</b>	<b>3538</b>	<b>11794</b>	<b>5945</b>	<b>5849</b>	<b>275</b>	<b>131</b>	<b>144</b>	<b>37855</b>	<b>21471</b>	<b>16384</b>	<b>29323</b>	<b>25082</b>	<b>4241</b>	<b>33343</b>
<b>7-10km</b>																					
1	Kodiyalam	211	829	405	424	97	47	50	146	68	78	0	0	0	507	282	225	390	387	3	439
2	Mallasandiram	116	528	286	242	41	22	19	122	68	54	0	0	0	356	217	139	330	313	17	198
3	Thorapalli Agraharam	2177	9849	4669	5180	1328	694	634	1178	581	597	10	3	7	6149	3014	3135	3855	3157	698	5994
4	Sanamavu	925	4248	2182	2066	513	270	243	659	322	337	183	100	83	2549	1487	1062	1913	1661	252	2335
5	Panchakshipuram	442	1882	973	909	183	113	70	477	257	220	0	0	0	1166	664	502	824	801	23	1058
6	Mathigiri (TP)	5627	23129	11725	11404	2900	1471	1429	5128	2620	2508	33	14	19	17357	9165	8192	8510	8130	380	14619
7	Komaranapalli	511	2174	1106	1068	236	120	116	577	296	281	0	0	0	1277	719	558	1121	1039	82	1053
8	Belagundapalli	1018	4092	2073	2019	470	247	223	686	347	339	0	0	0	2824	1575	1249	1839	1623	216	2253
9	Kalugundapalli	925	3640	1890	1750	396	212	184	378	183	195	0	0	0	2294	1302	992	1696	1645	51	1944
10	Madagondapalli	1148	4979	2414	2565	555	259	296	498	247	251	0	0	0	3324	1696	1628	2201	1888	313	2778
11	Kasi Agraharam	3	14	9	5	0	0	0	0	0	0	0	0	0	14	9	5	7	7	0	7
12	Thandarai	605	2664	1349	1315	305	163	142	363	170	193	4	2	2	1389	784	605	1213	893	320	1451
13	Bairamangalam	1207	4932	2569	2363	520	258	262	1213	638	575	11	5	6	3376	1940	1436	2330	1723	607	2602
14	Thogarai Agraharam	114	484	253	231	39	15	24	179	92	87	0	0	0	303	183	120	168	168	0	316
15	Arasakuppam	988	4196	2148	2048	459	235	224	313	156	157	87	43	44	2405	1378	1027	2251	2169	82	1945
16	Bithireddi	693	3076	1585	1491	327	166	161	419	210	209	96	47	49	1574	914	660	1655	1586	69	1421
17	Anchetty	3750	16578	8596	7982	2136	1115	1021	2116	1135	981	119	59	60	8439	4948	3491	8836	6948	1888	7742
	<b>Total</b>	<b>20460</b>	<b>87294</b>	<b>44232</b>	<b>43062</b>	<b>10505</b>	<b>5407</b>	<b>5098</b>	<b>14452</b>	<b>7390</b>	<b>7062</b>	<b>543</b>	<b>273</b>	<b>270</b>	<b>55303</b>	<b>30277</b>	<b>25026</b>	<b>39139</b>	<b>34138</b>	<b>5001</b>	<b>48155</b>
	<b>G.Total</b>	<b>36700</b>	<b>157502</b>	<b>80029</b>	<b>77473</b>	<b>18340</b>	<b>9332</b>	<b>9008</b>	<b>28318</b>	<b>14414</b>	<b>13904</b>	<b>820</b>	<b>405</b>	<b>415</b>	<b>97513</b>	<b>54254</b>	<b>43259</b>	<b>72162</b>	<b>62700</b>	<b>9462</b>	<b>85340</b>

Source: Village Wise Demographic Profile of the Study Area, Census of India, 2011

### 3.6.9 Gender and Sex Ratio

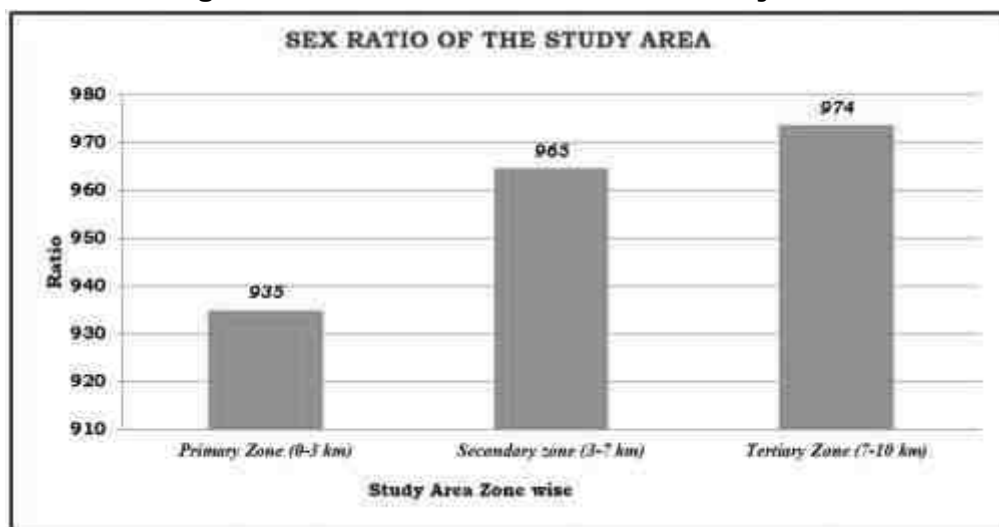
Sex ratio is used to describe the number of females per 1000 of males. Sex ratio is a valuable source for finding the population of women in India and what is the ratio of women to that of men in India. In the Population Census of 2011, it was revealed that the population ratio in India 2011 is 940 females per 1000 of males. The study area has 968 females per 1000 males. Gender and sex ratio determine the Human Development Index (HDI) of an area thereby understanding the status of women in that region. Following table entails information about sex ratio of 36 villages lying in study area (buffer zone) as primary, secondary and tertiary zone.

**Table 3.42 Sex ratio of the study area**

S. No.	Buffer Zone	Sex Ratio of Study area Female/ 1000 Male
1	Primary Zone (0-3 km)	935
2	Secondary zone (3-7 km)	965
3	Tertiary Zone (7-10 km)	974

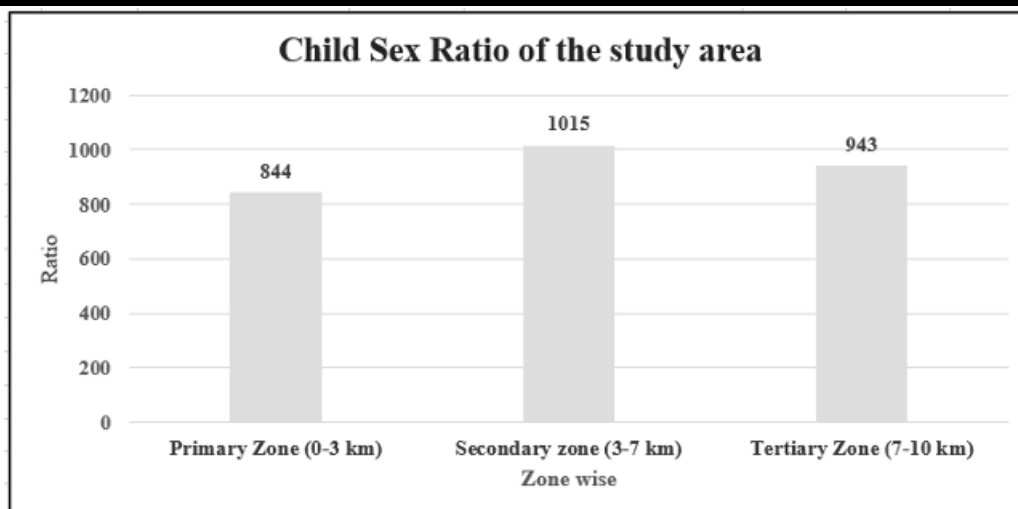
*Source: Census of India, 2011*

**Figure 3.29 Sex Ratio within 10 Km study area**



**Table 3.43 Child Sex ratio of the study area**

S. No.	Buffer Zone	Sex Ratio of Study area Female/ 1000 Male
1	Primary Zone (0-3 km)	844
2	Secondary zone (3-7 km)	1015
3	Tertiary Zone (7-10 km)	943



**Figure 3..30 Child Sex Ratio within 10 Km study area**

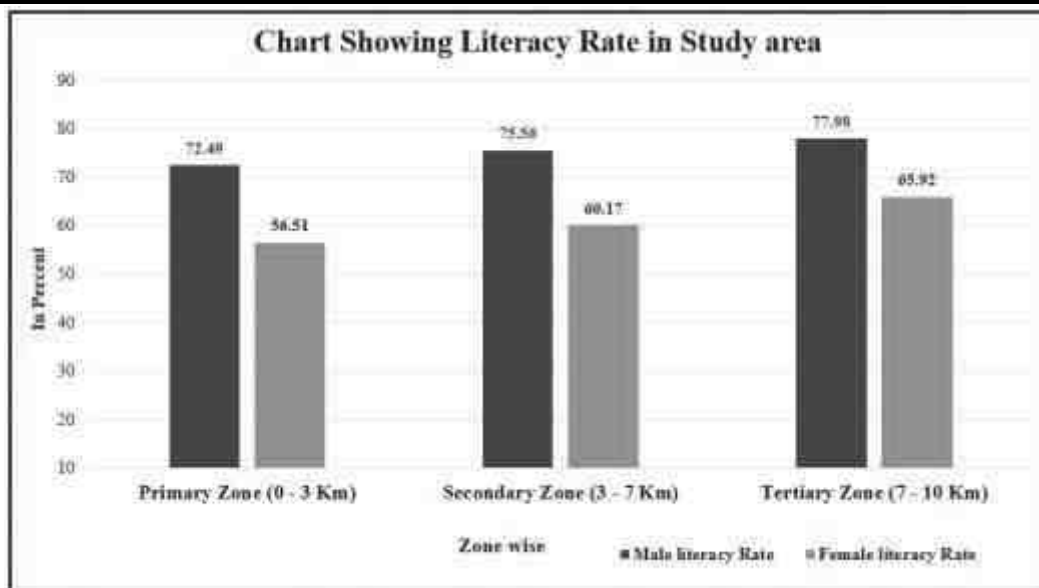
### 3.6.10 Literacy Rate in Study Area

Literacy is the ability to read and write one's own name and further for knowledge and interest, write coherently, and think critically about the written word. The analysis of the literacy levels is done in the study area. The 10 km radius study area demonstrates a literacy rate of 70% as per census 2011. The male literacy rate works out to be 76.74% whereas the female literacy rate, which is an important factor for social change, is observed to be 63.18% in the study area. This indicates that the education facilities in the villages are not up to the mark and there is need to be aware as the female literacy as it is very important for our society and from the survey it is clear that the literacy rate of female is far low comparison to male.

**Table 3.44 Literacy Rate of the Study Area**

Zone	No. of Villages	Male Literacy Population	Male literacy Rate	Female Literacy Population	Female literacy Rate	Total Literacy	Total Literacy Rate
Primary Zone (0 - 3 Km)	4	2506	72.49	1849	56.51	4355	64.72
Secondary Zone (3 - 7 Km)	15	21471	75.56	16384	60.17	37855	68.03
Tertiary Zone (7 - 10 Km)	17	30277	77.98	25026	65.92	55303	72.02
<b>Study Area (0-10km)</b>	<b>36</b>	<b>54254</b>	<b>76.74</b>	<b>43259</b>	<b>63.18</b>	<b>97513</b>	<b>70.07</b>

*Source: Census of India, 2011*



**Figure 3.31 Gender wise Literacy Rate in the study area**

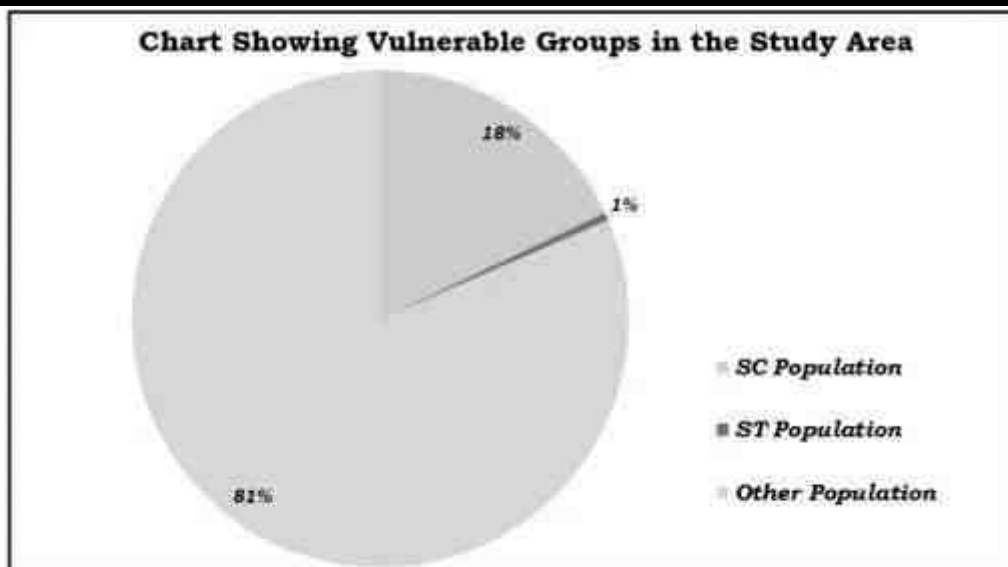
### 3.6.11 Vulnerable Group

While developing an action plan, it is very important to identify the population that falls under the marginalized and vulnerable groups and special attention should be given towards these groups while making action plans. In the observed villages schedule caste (SC) population is ~18% and Schedule Tribe population ~0.52% in study area. 82% population observed as other.

**Table 3.45 vulnerable groups of the study area**

Zone	No. of Villages	Vulnerable Groups					
		SC Population	%	ST Population	%	Other Population	%
Primary Zone (0 - 3 Km)	4	2072	27.47	2	0.03	5468	72.50
Secondary Zone (3 - 7 Km)	15	11794	18.82	275	0.44	50597	80.74
Tertiary Zone (7 - 10 Km)	17	14452	16.56	543	0.62	72299	82.82
<b>Total area (10km)</b>	<b>36</b>	<b>28318</b>	<b>17.98</b>	<b>820</b>	<b>0.52</b>	<b>128364</b>	<b>81.50</b>

*Source: Census of India, 2011*



**Figure 3.32 vulnerable groups**

### 3.6.12 Economic Activities

The economy of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to work category. The Population is divided occupation wise into three categories, viz., main workers, marginal workers and non-workers. The workers include cultivators, agricultural labourers, those engaged in household industry and other services. The marginal workers are those workers engaged in some work for a period of less than 180 days during the reference year. The non-workers include those engaged in unpaid household duties, students, retired persons, dependents, beggars, vagrants etc. besides institutional inmates or all other non-workers who do not fall under the above categories.

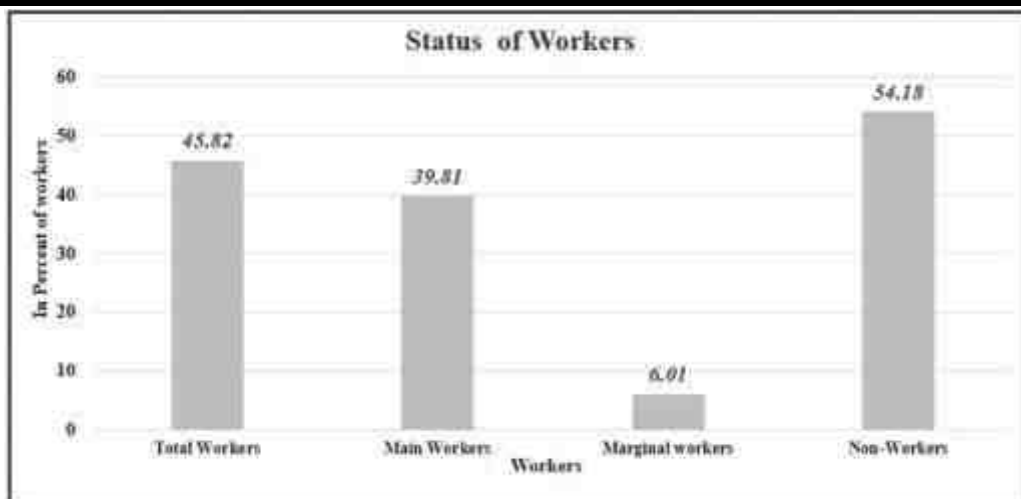
**Table 3.46 shows the work force of the study area**

Zone	No. of Villages	Total Workers	%	Main Workers	%	Marginal Workers	%	Non-Workers	%
Primary Zone (0 - 3 Km)	4	3700	49.06	3480	46.14	220	2.92	3842	50.94
Secondary Zone (3 - 7 Km)	15	29323	46.79	25082	40.02	4241	6.77	33343	53.21
Tertiary Zone (7 - 10 Km)	17	39139	44.84	34138	39.11	5001	5.73	48155	55.16
<b>Study Area (10 Km)</b>	<b>36</b>	<b>72162</b>	<b>45.82</b>	<b>62700</b>	<b>39.81</b>	<b>9462</b>	<b>6.01</b>	<b>85340</b>	<b>54.18</b>

*Source: Census of India, 2011*

Total working population within the 10 km study area are 45.82%, where 39.81% are main workers and 6.01% of the total working population are marginal worker 54.18% of the total population are non-Workers.





**Figure 3.33 Working population in the study area**

### 3.6.13 Population Projection of the Study Area

#### *Krishnagiri Population 2022 – 2023*

The last census of Krishnagiri was done in 2011 and next census of 2021 has been postponed or cancelled. But we can do projection of future Krishnagiri 2022 Population on the basis likely Population Growth Rate.

Year	Projected Population (Estimation)
2001	1561118
2011	1879809
2021	2198500
2025	2325976
2030	2485322

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

A population projection is an estimation of the number of people expected to be alive at a future date that is made based on assumptions of population structure, fertility, mortality and migration. It is an essential to assess the need for new jobs, schools, doctors and nurses, planning urban housing, foods, clothing and requirements of energy and resources. It is also needed for policy discourse i.e., helps to the policy-makers to understand the existing problems and finally supports to develop the suitable solutions.

A population projection gives a picture of what the future size and structure of the population by sex and age might look like. It is based on knowledge of the past trends, and, for the future, on assumptions made for three components: fertility, mortality and migration.

**Table 3.47 Total Population of Study Area**

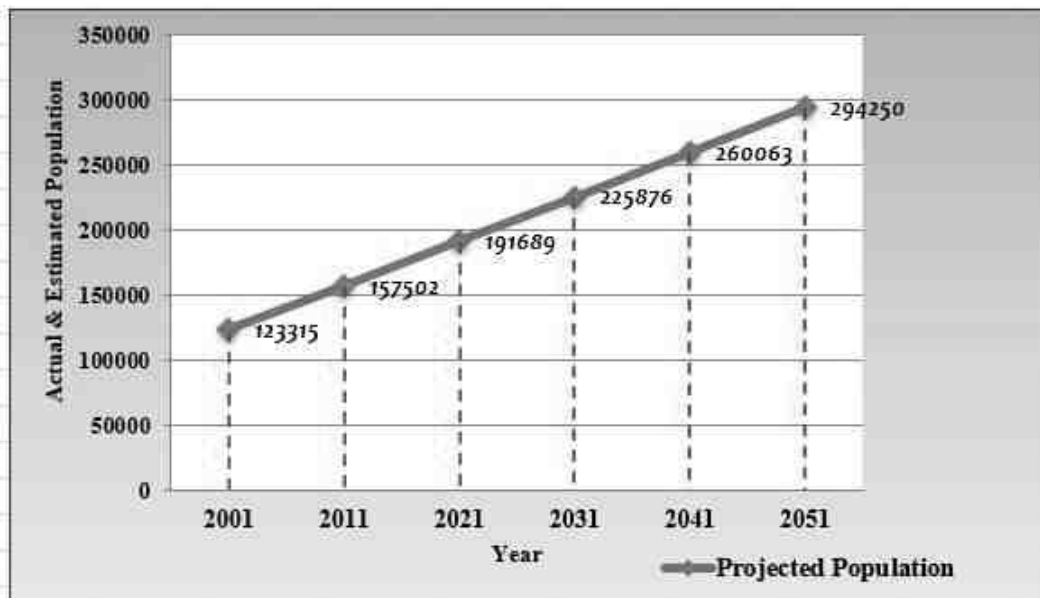
Sl No.	Population in 2001	Population in 2011
1	123315	157502

Source: <https://censusindia.gov.in/census.website/>

**Table 3.48 Population Projection of Study Area**

S. No	Year	Projected Population (Approximately)
1.	2021	191689
2.	2031	225876
3.	2041	260063
4.	2051	294250

Source: Calculated by SPSS V23 Linear Regression Method.

**Figure 3.34 Graph Showing Population Projection**

Following formula has been used for the projection of population.

$$Y=a+bt$$

Where: Y= Dependent variable (Population)

a=Intercept

b=Slope

t=Interdependent variables (Time)

Above formula is applied to project population for the years (2021, 2031,2041,2051). Due to avoid the errors in manual calculation the statistical software SPSS (demo version 23) is used to calculate the intercept and the slope.

Due to the shortage of data on population the results show same value of growth for the years (2021,2031,2041,2051). If the researcher gets enough the data on population for earlier years the data projection will be accurate.

- Ref: Indian Economic survey, the SLR (Simple Linear Regression) techniques are used by statistical department, Government of India to project population.
- Source: <https://www.ibm.com/in-en/analytics/spss-statistics-software>

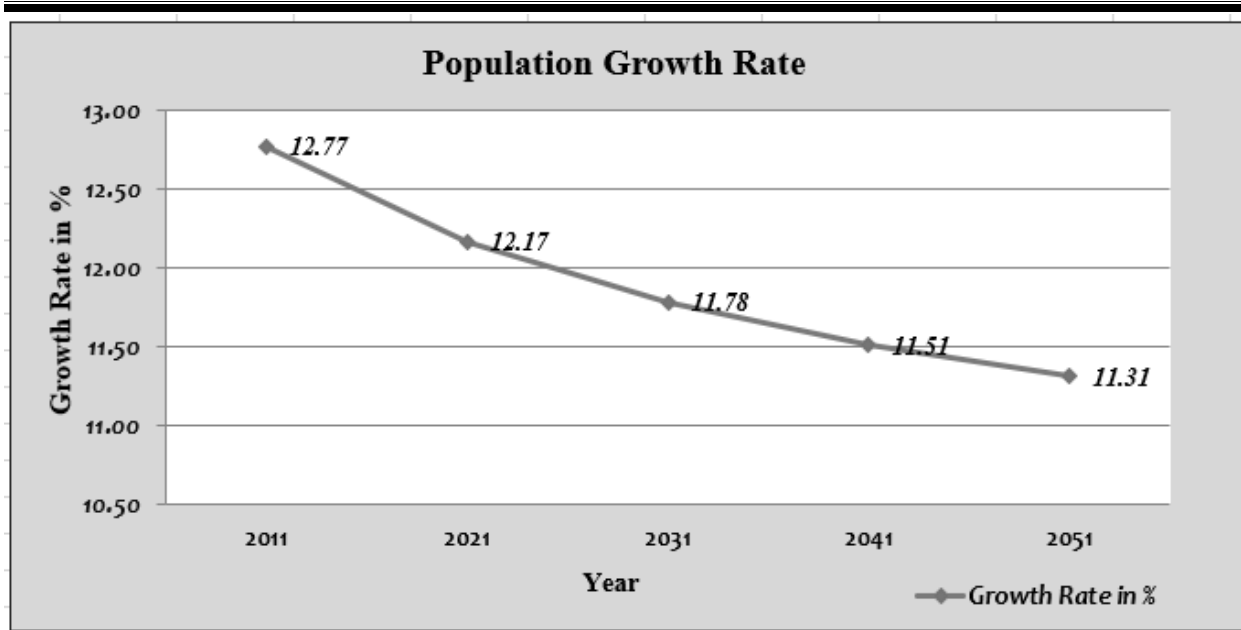
### 3.6.14 Population Growth of the Study Area

**Table 3.49 Population Growth rate in Study area**

Year	Actual Population	Growth Rate %
2001	123315	-
2011	157502	12.77
2021	191689	12.17
2031	225876	11.78
2041	260063	11.51
2051	294250	11.31

*Source: Compiled by Author-2022*

above table no 3.14.1 is showing the growth rate of population since 2001, as per census in 2001 the population of study area was 123315 and 2011 it was 157502 if the population growth rate is 12.77%, it will approximately gradually an increase about 191689 in year 2021 and 294250 in the year of 2051. It has approximately population growth rate decline will be 11.31%.



**Figure.3.35 Graph Showing Population Growth Rate**

### Planning Analysis:

#### Calculating Growth Rates

The percent change from one period to another is calculated from the formula:

Where:

PR=Percent Rate

$V_{Present}$  =Present or Future Value

$V_{Past}$  = Past or Present Value

$$PR = \frac{(V_{Present} - V_{Past})}{V_{Past}} \times 100$$

The *annual* percentage growth rate is simply the percent growth divided by N, the number of years.

Source: <https://pages.uoregon.edu/rgp/PPPM613/class8a.htm>

### 3.6.15 Infrastructure Base

#### A. EDUCATION FACILITIES

Education and learning are one of the most important processes in today's society. Education is not just restricted to teaching a person the basic academics, say computers, mathematics, geography or history, education is a much larger term. It is really a means to discover new things which we don't know about and increase our knowledge. Government has provided educational facilities in each village instead some villages do not have school facility. According to census India handbook 2011, Primary Schools are available in every village and Middle, Secondary and Senior Secondary School (depend on population size) are available in some of the villages. It can be concluded from the available census data that people have to go far away from the villages for colleges and schooling. For higher education people have to migrate to the bigger cities. Educational and literacy details were collected from census India handbook 2011 and we observed. lack of Education. After analysing the literacy rate from census data,

we found that literacy rate is good. The available educational structure for the population in the case study area is mentioned in the table below.

**Table 3.50. Educational facilities in the study area**

Zone	No. of Villages	Primary School	Middle School	Higher Secondary School	Govt.College
Primary Zone (0 - 3 Km)	4	1	1	1	-
Secondary Zone (3 - 7 Km)	15	3	1	3	-
Tertiary Zone (7 - 10 Km)	17	4	4	3	2
<b>Study Area (10 Km)</b>	<b>36</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>2</b>

Source: DCHS census 2011,

### B. HEALTH FACILITIES

Health is a premier asset of human capital which is an important factor for growth of any economy. It is a source of human welfare. Health and nutrition play a major role for developing a healthy society as it impacts the productivity of a person. The healthcare facilities in the study area consisted of Primary Health Centre (PHC), Primary Health Sub-Centre's (PHSC); Maternity and Child Welfare Centre (MCWS); Dispensaries and TB

Clinic, Veterinary hospitals (VH), Non-Govt. medical facilities Medicine shops (MS), sub-centres and Primary Health Centres. As per the data of 10 km radius study area collected from Census India Handbook 2011, medical facilities are far below the basic need and patients have to move to Cities for any serious illness. So, the action plan which is to be prepared should focus on the more improvement of health facilities.

**Table.3.51 Health/ Medical Facilities in the Surveyed Area**

Zone	No. of Villages	Community Health Centre	PHC/GH	Primary Health Sub Centre	Maternity Child welfare Centre	Hospital Allopathic	Dispensary/Health centres	Veterinary Hospital	Family welfare centres	Non-Government Medical Shop
Primary Zone (0 - 3Km)	4	0	1	0	0	0	0	0	0	1
Secondary Zone (3- 7Km)	15	1	2	0	1	0	0	1	1	5
Tertiary Zone (7- 10km)	17	0	2	2	1	0	1	1	1	10
Study Area (10 Km)	<b>36</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>16</b>

Source: DCHS census 2011,

### 3.16.6 Other activities

#### 1.Electrification in the Area

The source of electricity is fulfilled by the Government. Most of the villages are electrified and power supply is good in the study area.

#### 2.Drinking Water Facilities:

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As per the data collected from census India handbook 2011, it has been noticed that the requirement of drinking water is being fulfilled by Well and handpumps and lakes. All villagers are availing drinking water facilities from Hand pumps. The drinking and domestic water sources are open wells and hand pumps, tanks.

### **3.Transport and Road Infrastructure Facilities**

Villages have fare road connectivity and Private bus operators operate transport service in the villages. Road condition of the villages is fairly good and the area is well connected with the three major highways such as SH-17A located at 2.6km in South Western direction connecting Hosur – Denkanikottai Road. NH- 948A located at 6.6 km in North direction connecting Thalli – Attibele Road. As per the survey, in some villages, there are proper roads with the bus stops available for the people convenience.

### **4.Electrification**

All the villages surveyed in the study area were electrified. Electricity is available for the various domestic, non-domestic, industrial, agricultural and public lighting purposes. But being a rural area, the electric supply is discontinuous most of the times and is supplied in shifts (eight hours in the morning or evening).

### **3.16.7 ECONOMIC EXPOSURE AND DEVELOPMENT**

Implementation of the project will make financial institutions as well as related economic facilities, infrastructure and services available to the people. This will expose and introduce the local population to factors of economic development including the banking system, financial services, and credit and investment schemes. The exposure will enable community members to invest their income and prevent dependency or living a life of “tomorrow will take care of itself”.

### **3.16.8 ADVERSE SOCIAL IMPACTS**

#### **Health Impacts**

The project has the potential for triggering health impacts through increased dust, creation of breeding grounds for disease vectors, population influx which might introduce new diseases in the area, and inadequate sanitation facilities.

#### **Noise and Vibration**

The mining activity is carrying out by eco-friendly surface miner without drilling & blasting. The noise & vibration is generated only for short time due to transportation of vehicles thus there is no major adverse impact has seen.

#### **Livelihood change**

Due to the labour intensity of the mining sector, the project will attract the more able-bodied persons from the community which in turn will lead to low labour availability in other sectors of the economy including agricultural, education and health skilled workers. Local employment opportunities to be created by the project. This impact will not be significant due to low level of education and skills in the area which will result in sourcing skilled workforce from outside the immediate area. But the magnitude of this impact will be high due to high number of dependents in a household.

#### **Managing Loss of Livelihood and Income**

To cushion the population against impacts of mine closure, comprehensive retrenchment packages that include adequate advance warning to employees and contractors to allow them to source alternative opportunities should be

undertaken. Skills development programmes should also be undertaken well before the closure of the Plant. However, adequate protection measures will be taken by the mine management to take care of environment and to guard against adverse environmental impact.

### **3.16.19 Inference of the Socio-economic Study**

- The Socio-Economic study provides the clear picture of demographic as well as economic attributes such as population, average household size, working, non-working population, literacy rate, sex ratio, occupation etc.
- Percentage of the male population is observed to be higher than women population with the study area. As observed, the majority of the villages are spatially distributed with the secondary zone of the study area. The sex ratio is 968 females of every 1000 males in the study area which is not very poor compared to the national sex ratio.
- As far as the literacy rate is concerned, the study area has an average level as the literacy rate of people is growing.
- Vulnerable people are very low in the buffer zone area.

### **3.16.20 Morbidity Pattern**

Morbidity rate refers to the rate at which a disease or illness occurs in a population and can be used to determine the health of a population and its healthcare needs. Illnesses can range from acute to chronic, long-lasting conditions. There is no such major morbidity pattern has been found in the area as per the data sources of the health department. Some minor morbidity may be seen like respiratory diseases were commonest morbidity followed by cataract, cardiovascular. As the age increases chances of getting morbidities were more. Also, water quality results of some of the villages indicates that there is fluoride content in the ground water which may lead to fluorosis disease among the population.

### **3.16.21 Recommendation and Suggestion**

The village development plans are made in consultation with the community through Gram Sabah; these appear to address the needs of the community. However, it may be noted that at the implementation stage these plans often are fraught with problem of inadequate funds, lack of proper planning, corruption, vested interests and political agendas. Hence while ascertaining the scope for convergence with the government activities, care must be taken to ascertain realistic possibilities for implementation.

- Women empowerment– Home based income generation activities, vocational training programme, Common education centre for increase the literacy.
- Education – free uniform, construction of common rooms, secondary schools, colleges and library, computer education and physical education, additional schools for girls, furniture and equipment in schools to promote education.
- Vocational Trainings – establishment of a vocational training center within the villages with a curriculum designed to suit market demands. Vocational training for disability persons.
- Agriculture/livestock –infrastructure such as agriculture electric connections, assistance with buying improved tools and equipment, capacity building, supply and/or knowledge of better variety of seeds, pasture land development and trainings on animal husbandry& facility of veterinary doctor.

- 
- Health – improvement in sanitary conditions of the villages, assistance with construction of latrines, improvement in drainage system, health camps and awareness campaigns for diseases like malaria, typhoid, tuberculosis, yellow fever and pneumonia. Repairing of PHCs and Aanganbadi centers, Provision of water tanks at discreet village locations for sanitation, extending health facility to needy amongst surrounding villages, ambulances to local health centres in improving facility to public health. Establishment of new PHCs and medicinal shops.
  - Persons with disability: Establishment of center for special education, sensitization of the community towards disabled and awareness on Govt.
  - Roads-- Laying of new roads and pucca roads in the study area which can increase in the transportation facilities.

### **3.16.22 CONCLUSION**

The environment baseline study was conducted in the project area by both secondary data and primary data collections. Abiotic factors including air, water and soil were studied for the core and buffer zone. It was found that most of the parameters were within the limits as per the Standards. Similarly, the study for the biotic factors was conducted. It can be concluded that the present environment status of the study area is good enough for the project activity. Adoption of adequate pollution control measures will protect the surrounding environment.

*Social Impact assessment study* was also conducted during the study period which revealed that area further require improvement in the Economy, Employment and Infrastructure Development of the area. Hence, it can be concluded that the present baseline environment status of the study area will not be affected by the project Proponent will adopt adequate control measures to protect the surrounding environment and will contribute in social & economic development of the areas in vicinity & study area.



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## CHAPTER – 4: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### 4.0 *General*

The environmental impact can be categorized as either primary or secondary, primary impacts which are attributed directly by the project; secondary impacts are those which are indirectly induced. The open cast mining operations involve development of benches, Approach Road, Haul Road, Excavation and handling of material. If adequate control measures are not taken to prevent/mitigate the adverse environmental impacts/lead to damage of the eco-system.

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 for sustainable resource extraction. Based on the baseline environmental status at the existing mine site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed. The various anticipated impacts will be on.

- Land environment
- Water Environment
- Air Environment
- Noise Environment
- Socio economic environment
- Solid waste
- Soil environment

### 4.1 *Land Environment*

#### 4.1.2 Anticipated Impact from all Proposed Projects

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.
- If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course

#### 4.1.2.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.,

- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimise dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

#### **4.1.3 Soil Environment**

#### **4.1.4 Impact on Soil Environment**

The top layer of the project site in the form of topsoil formation, it will be directly loaded into tippers for the filling and levelling of low-lying areas. There is no disposal of topsoil. The excavated Rough Stone quarry will be directly loaded into dumpers to the needy customers.

There will be no disposal of waste water from the quarry operation, No discharge of toxic effluent from the proposed projects. The dust emission at working face and haul roads will be controlled by water sprinkling and plantation.

**Erosion and Sedimentation** (Removal of protective vegetation cover; Exposure of underlying soil horizons that may be less pervious, or more erodible than the surface layers; Reduced capacity of soils to absorb rainfall; Increased energy in storm-water runoff due to concentration and velocity; and Exposure of subsurface materials which are unsuitable for vegetation establishment).

#### **4.1.5 Common Mitigation Measures for Respective Individual Proposed Projects**

- Run-off diversion – Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry works areas. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

#### **4.1.6 Waste Dump Management**

There are no wastages anticipated in this Rough Stone quarrying operation. The entire quarried out materials will be utilized (100%).

## 4.2 Water Environment

### 4.2.1 Anticipated Impact on Surface and ground water

The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. The quarrying activity will not intersect ground water table as the maximum depth of the quarry in the cluster is 66m Agl and water table is found at a depth of 88m BGL. The quarrying operation will be carried out well above the water table. There is no intersection of surface water bodies (Streams, Canal, Odai etc.,) in the project area. 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. There is no proposal for discharging of quarry pit water outside the project area.

**TABLE 4.1: WATER REQUIREMENTS**

<b>PROPOSAL – P1</b>		
*Purpose	Quantity	Source
Dust Suppression	0.7 KLD	From nearby tank
Green Belt development	0.6 KLD	From nearby tank
Drinking and Domestic purpose	0.5 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>1.8 KLD</b>	
<b>PROPOSAL – P2</b>		
*Purpose	Quantity	Source
Dust Suppression	0.7 KLD	From nearby tank
Green Belt development	0.6 KLD	From nearby tank
Domestic purpose	0.5 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>1.8 KLD</b>	

\* Water for drinking purpose will be brought from approved water vendors

Source: Approved Mining Plan Pre-Feasibility Report

Total water requirement in the cluster quarries is about 3.6 KLD, the water for dust suppression and greenbelt development will be sourced from the mine pit water collected during rainy seasons, the water for domestic purpose and drinking will be sourced from the approved water vendors.

### 4.2.2 Common Mitigation measures:

- Garland drain, settling tank will be constructed along the proposed mining lease area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting system.

- Providing benches with inner slopes and through a system of drains and channels, allowing rain water to descent into surrounding drains, so as to minimize the effects of erosion & water logging arising out of uncontrolled descent of water.
- Reuse the water collected during storm for dust suppression and greenbelt development within the mines
- Installing interceptor traps/oil separators to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will pass through interceptor traps/oil separators prior to its reuse;
- Using flocculating or coagulating agents to assist in the settling of suspended solids during monsoon seasons;
- Periodic (every 6 month once) analysis of quarry pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- De-silting will be carried out before and immediately after the monsoon season.
- Regular monitoring (every 6 month once) and analysing the quality of water in open well, bore wells and surface water

### **4.3 Air Environment**

The air borne particulate matter is the main air pollutant in this opencast mining. The mining operation will be carried out by jackhammer drilling (35mm dia) and Hydraulic Excavators will be utilized for excavation of Rough Stone quarry waste.

#### **4.3.1. Anticipated**

##### **Impact**

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.
- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

##### **4.3.1.1. Modelling of Incremental Concentration from all Proposed Projects**

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM<sub>10</sub> & PM<sub>2.5</sub> and emissions of Sulphur dioxide (SO<sub>2</sub>) & Oxides of Nitrogen (NO<sub>x</sub>) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Similarly, loading - unloading and transportation of Rough Stone quarry, wind erosion of the exposed area and movement of light vehicles causes of pollution. This leads to an impact on the ambient air environment around the project area.

Anticipated incremental concentration due to this quarrying activity and net increase in emissions due to quarrying activities within 500 meters around the project area is predicted by Open Pit Source modelling using AERMOD Software.

The impact on Air Environment is due to the mining and allied activities during Land Development phase, Mining process and Transportation. The emissions of Sulphur dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone quarry, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM<sub>10</sub>) affecting Ambient Air of the area. Prediction of impacts on air environment has been carried out taking into consideration cumulative production three proposed quarries. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

#### 4.3.1.2 Emission Estimation

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 4-2.

**TABLE 4.2: ESTIMATED EMISSION RATE**

<b>EMISSION ESTIMATION FOR QUARRY "P1"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.119071544	g/s
	Blasting	Point Source	0.005789678	g/s
	Mineral Loading	Point Source	0.048362098	g/s
	Haul Road	Line Source	0.002518767	g/s/m
	Overall Mine	Area Source	0.067173769	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.002340806	g/s
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000163049	g/s
<b>EMISSION ESTIMATION FOR QUARRY "P2"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.110601125	g/s

	Blasting	Point Source	0.004003245	g/s
	Mineral Loading	Point Source	0.047431236	g/s
	Haul Road	Line Source	0.002512301	g/s/m
	Overall Mine	Area Source	0.065685948	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.001942304	g/s
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000133267	g/s

#### 4.3.2 Frame work of Computation & Model details

The prediction included the impact of Excavation, Drilling, Blasting, loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM<sub>10</sub> was observed close to the source due to low to moderate wind speeds. Incremental value of PM<sub>10</sub> was superimposed on the base line data monitored at the proposed site to predict total GLC of PM<sub>10</sub> due to combined impacts.

#### Air Pollution Dispersion Modelling

##### Baseline Air Quality –

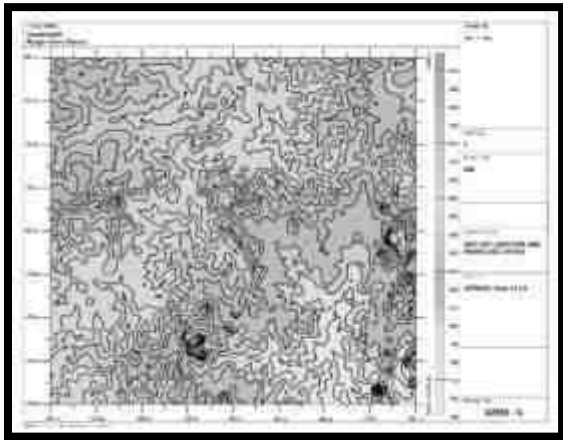
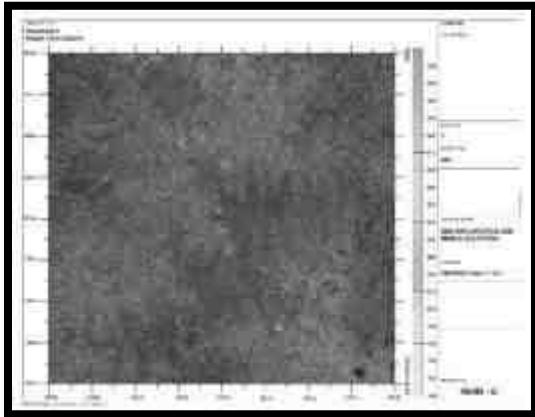
Baseline air quality has been measured at 2 locations in the cluster and 6 locations within the buffer zone of the study area. The 24 - hourly average samples of particulate matters (PM<sub>10</sub> and PM<sub>2.5</sub>), SO<sub>2</sub> and NO<sub>x</sub> were measured following the National Ambient Air Quality Standards (NAAQS), 2009. Monitoring data of 8 sampling stations are given below –

##### Meteorological Data –

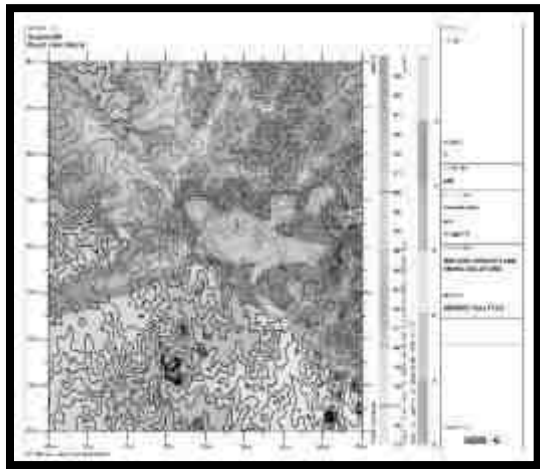
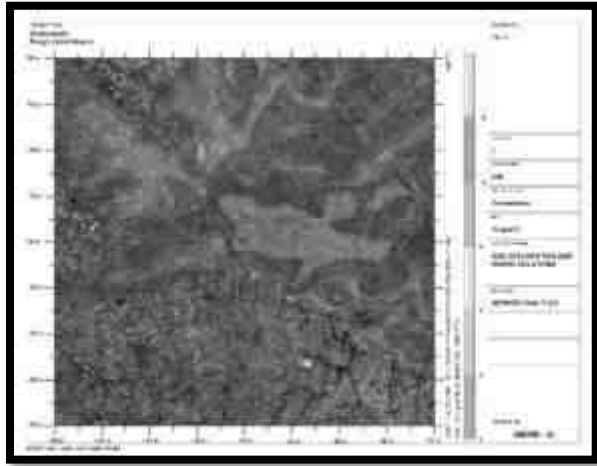
Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated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

A temporary meteorological station was installed at project site and monitored continually for study period without break. The station was installed at a height of 4 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis. A weather data was collected from IMD, Krishnagiri agro for the month of Dec22 – Feb2023 to correlate with site data and found not much of change in the parameters.

**FIGURE 4.1: AERMOD TERRAIN MAP**

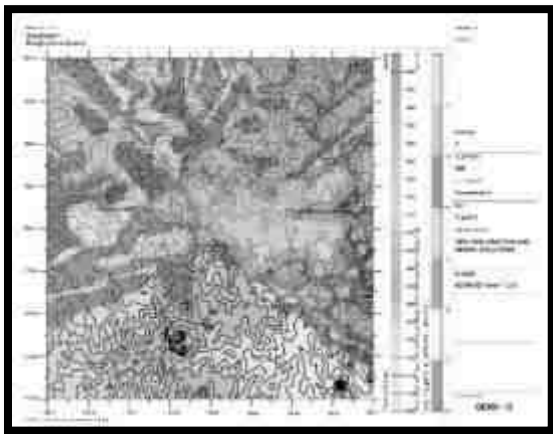
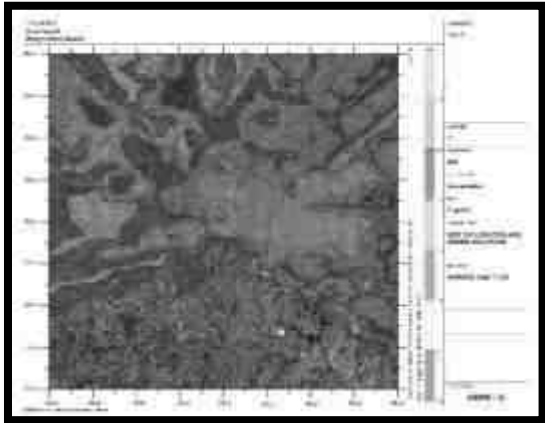


**FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM<sub>10</sub>**

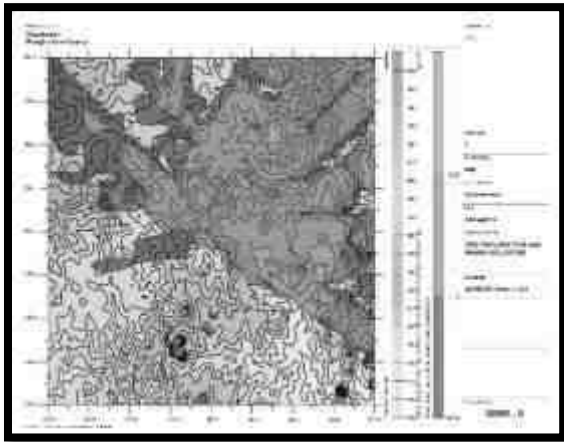
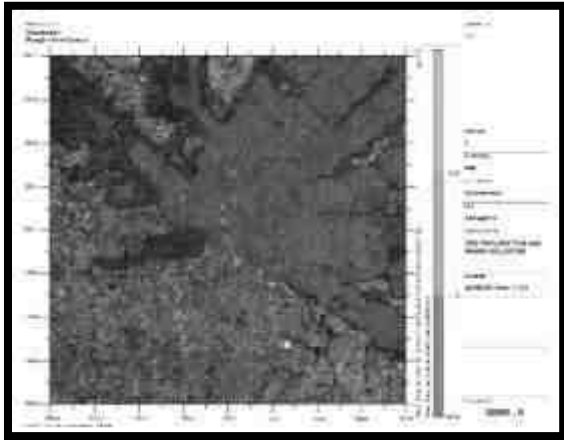




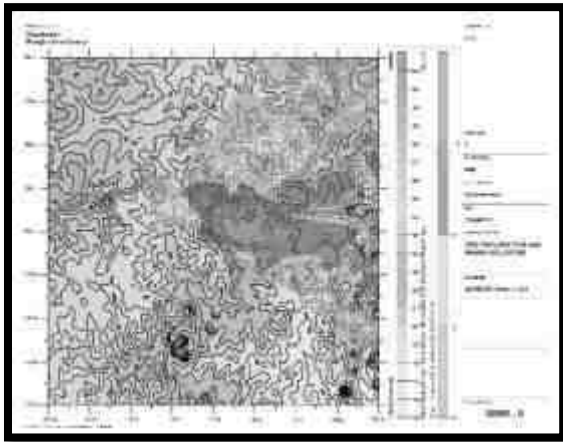
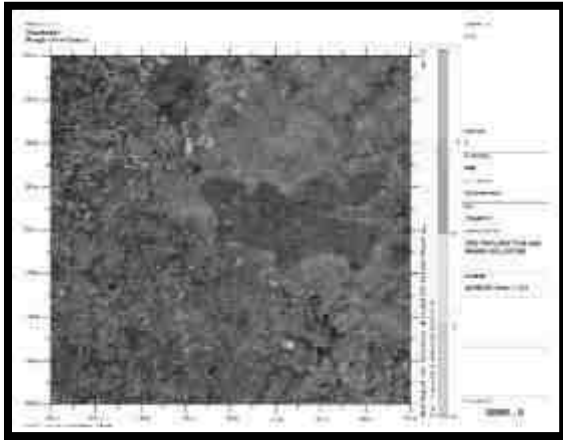
**FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM<sub>2.5</sub>**



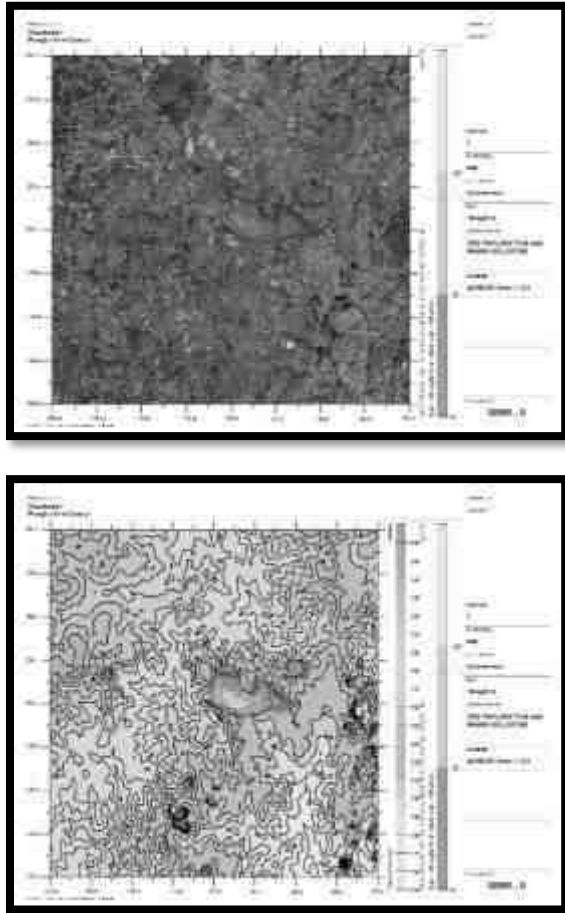
**FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO<sub>2</sub>**



**FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO<sub>x</sub>**



**FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST**



**4.3.2.1 Model Results**

The post project Resultant Concentrations of PM10, PM2.5, SO2& NOX (GLC) is given in Table below:

**TABLE 4.3: INCREMENTAL & RESULTANT GLC OF PM<sub>10</sub>**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM <sub>10</sub> (µg/m <sup>3</sup> )	Incremental value of PM <sub>10</sub> due to mining (µg/m <sup>3</sup> )	Total PM <sub>10</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12°37'55.67"N 77°48'43.03"E	-54	2	46.0	15.90	61.9
AAQ2	12°37'57.88"N 77°48'38.13"E	-201	78	43.4	15.52	58.9
AAQ3	12°38'18.68"N 77°48'37.51"E	-221	717	43.1	15.09	58.1
AAQ4	12°38'33.11"N 77°47'37.83"E	-2039	1168	46.3	13.21	59.5
AAQ5	12°36'25.73"N 77°50'54.32"E	3958	-2786	21.6	11.00	32.6
AAQ6	12°36'13.94"N 77°46'2.00"E	-4969	-3151	21.9	0	21.9
AAQ7	12°39'25.44"N 77°51'52.21"E	5721	2790	45.2	5.30	50.5
AAQ8	12°40'46.13"N 77°48'27.41"E	-528	5294	43.0	2.60	45.6

**TABLE 4.4: INCREMENTAL & RESULTANT GLC OF PM<sub>2.5</sub>**

Station	Location	X	Y	Average	Incremental	Total
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Code		Coordinate (m)	Coordinate (m)	Baseline PM <sub>2.5</sub> (µg/m <sup>3</sup> )	value of PM <sub>2.5</sub> due to mining (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12°37'55.67"N 77°48'43.03"E	-54	2	23.7	7.82	31.6
AAQ2	12°37'57.88"N 77°48'38.13"E	-201	78	21.5	7.48	28.9
AAQ3	12°38'18.68"N 77°48'37.51"E	-221	717	22.1	7.10	29.2
AAQ4	12°38'33.11"N 77°47'37.83"E	-2039	1168	22.1	6.19	28.3
AAQ5	12°36'25.73"N 77°50'54.32"E	3958	-2786	21.6	4.70	26.3
AAQ6	12°36'13.94"N 77°46'2.00"E	-4969	-3151	21.6	0.40	22.0
AAQ7	12°39'25.44"N 77°51'52.21"E	5721	2790	23.9	3.79	27.7
AAQ8	12°40'46.13"N 77°48'27.41"E	-528	5294	22.4	2.66	25.1

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF SO<sub>2</sub>

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline So <sub>2</sub> (µg/m <sup>3</sup> )	Incremental value of So <sub>2</sub> due to mining (µg/m <sup>3</sup> )	Total So <sub>2</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12°37'55.67"N 77°48'43.03"E	-54	2	8.1	2.29	10.4
AAQ2	12°37'57.88"N 77°48'38.13"E	-201	78	8.4	2.25	10.7
AAQ3	12°38'18.68"N 77°48'37.51"E	-221	717	6.3	2.20	8.5
AAQ4	12°38'33.11"N 77°47'37.83"E	-2039	1168	7.9	1.90	9.8
AAQ5	12°36'25.73"N 77°50'54.32"E	3958	-2786	8.0	1.33	9.4
AAQ6	12°36'13.94"N 77°46'2.00"E	-4969	-3151	6.7	0	6.7
AAQ7	12°39'25.44"N 77°51'52.21"E	5721	2790	7.5	0.92	8.4
AAQ8	12°40'46.13"N 77°48'27.41"E	-528	5294	6.9	0.12	7.0

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF NO<sub>x</sub>

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline No <sub>x</sub> (µg/m <sup>3</sup> )	Incremental value of No <sub>x</sub> due to mining (µg/m <sup>3</sup> )	Total No <sub>x</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12°37'55.67"N 77°48'43.03"E	-54	2	23.9	10.62	34.5
AAQ2	12°37'57.88"N 77°48'38.13"E	-201	78	20.4	10.05	30.5
AAQ3	12°38'18.68"N 77°48'37.51"E	-221	717	22.2	8.72	30.9
AAQ4	12°38'33.11"N 77°47'37.83"E	-2039	1168	21.4	4.50	25.9
AAQ5	12°36'25.73"N 77°50'54.32"E	3958	-2786	21.8	1.80	23.6
AAQ6	12°36'13.94"N 77°46'2.00"E	-4969	-3151	21.3	0	21.3
AAQ7	12°39'25.44"N 77°51'52.21"E	5721	2790	20.5	0	20.5
AAQ8	12°40'46.13"N 77°48'27.41"E	-528	5294	22.9	0	22.9

TABLE 4.7: INCREMENTAL &amp; RESULTANT GLC OF FUGITIVE DUST

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Fugitive (µg/m <sup>3</sup> )	Incremental value of Fugitive due to mining (µg/m <sup>3</sup> )	Total Fugitive (µg/m <sup>3</sup> ) (5+6)
AAQ1	12°37'55.67"N 77°48'43.03"E	-54	2	64.15	100	164.2
AAQ2	12°37'57.88"N 77°48'38.13"E	-201	78	64.28	41	105.3
AAQ3	12°38'18.68"N 77°48'37.51"E	-221	717	63.66	0	63.7

AAQ4	12°38'33.11"N 77°47'37.83"E	-2039	1168	63.43	0	84.4
AAQ5	12°36'25.73"N 77°50'54.32"E	3958	-2786	67.67	0	67.7
AAQ6	12°36'13.94"N 77°46'2.00"E	-4969	-3151	65.87	0	65.9
AAQ7	12°39'25.44"N 77°51'52.21"E	5721	2790	68.34	0	68.3
AAQ8	12°40'46.13"N 77°48'27.41"E	-528	5294	67.61	0	67.6

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 µg/m<sup>3</sup> for PM<sub>10</sub>, SO<sub>2</sub> & NO<sub>x</sub> respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

#### 4.3.4. Common Mitigation Measures for Respective Individual Proposed Projects

**Drilling** – To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

##### Advantages of Wet Drilling: -

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

##### Blasting –

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

##### Haul Road & Transportation –

- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- Transportation of material will be carried out during day time and material will be covered with tarpaulin
- The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
- Water sprinkling on haul roads & loading points will be carried out twice a day
- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
- The un-metalled haul roads will be compacted weekly before being put into use.

- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Grading of haul roads and service roads to clear accumulation of loose materials

#### **Green Belt –**

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas

#### **Occupational Health –**

- 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

### **4.4 Noise Environment (Impact & Mitigation Measures)**

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. These activities will not cause any problem to the inhabitants of this area because there is no human settlement in close proximity to the project area. Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities.

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels. Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves, which are propagated outwards from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A).

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}$$

Where:

$Lp_1$  &  $Lp_2$  are sound levels at points located at distances  $r_1$  &  $r_2$  from the source.

$Ae_{1,2}$  is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \dots\}$$

#### **4.4.1 Anticipated Impact**

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

- Source data

- Receptor data
- Attenuation factor

Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4-8.

**TABLE 4.8: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY**

Sl.No.	Machinery / Activity	Impact on Environment?	Noise Produced in dB(A) at 50 ft from source*
1	Blasting	Yes	94
2	Jack Hammer	Yes	88
3	Compressor	No	81
4	Excavator	No	85
5	Tipper	No	84
Total Noise Produced			95.8

\*50 feet from source = 15.24 meters

Source: U.S. Department of Transportation (Federal Highway Administration) – Construction Noise Handbook

The total noise to be produced by mining activity is calculated to be 95.8 dB (A). Generally, most mining operations produce noise between 100-109 dB (A). We have considered equipment and operation noise levels (max) to be approx. 109 dB (A) for noise prediction modelling.

**TABLE 4.9: PREDICTED NOISE INCREMENTAL VALUES**

Location ID	N1	N2	N3	N4	N5	N6	N7	N8
Maximum Monitored Value (Day) dB(A)	48.3	48.8	49.7	49.3	45.9	43.2	45.9	47.1
Incremental Value dB(A)	60.1	56.6	45.3	32.1	26.5	25.3	24.3	26.1
Total Predicted Noise level dB(A)	60.4	57.2	51.0	49.4	45.9	43.3	45.9	47.1
NAAQ Standards	<b>Industrial</b>		<b>Day Time- 75 dB (A)</b>		<b>Night Time- 70 dB (A)</b>			
	<b>Residential</b>		<b>Day Time- 55 dB (A)</b>		<b>Night Time- 45 dB (A)</b>			

#### 4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects

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

- Time intervals for each quarry during blasting.
- Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
- Limiting time exposure of workers to excessive noise.
- Proper and regular maintenance of vehicles, machinery and other equipment's.
- The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipment's.
- Speed of trucks entering or leaving the quarry will be limited to moderate speed to prevent undue noise from empty vehicles...
- Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes (occasionally).
- Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment.



- Provision of Quiet areas, where employees can get relief from workplace noise.
- The development of green belts around the periphery of the quarry site to attenuate noise.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

#### 4.4.3 Ground Vibrations

Ground vibrations due to the proposed mining activities are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc., However, the major source of ground vibration from the quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the project area is located 550m North in Gulisandiram village. The ground vibrations due to the blasting in proposed mine are calculated using the empirical equation.

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

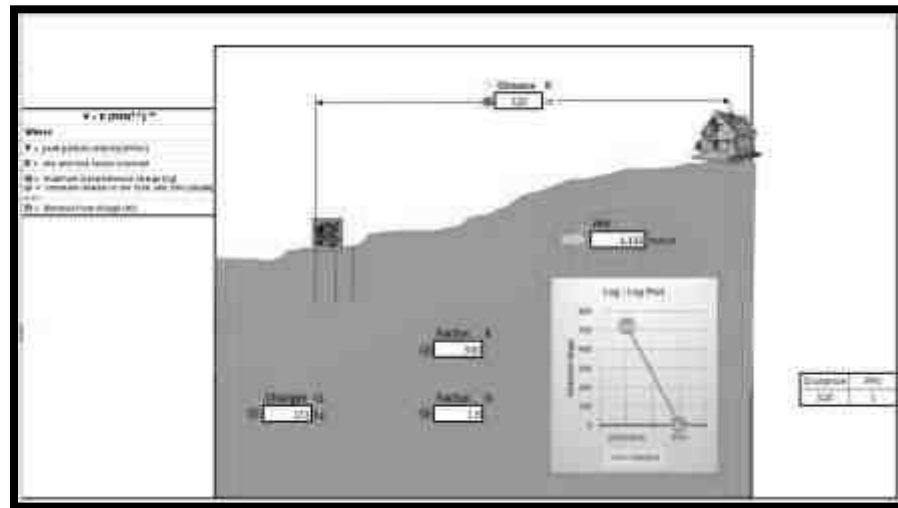
B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

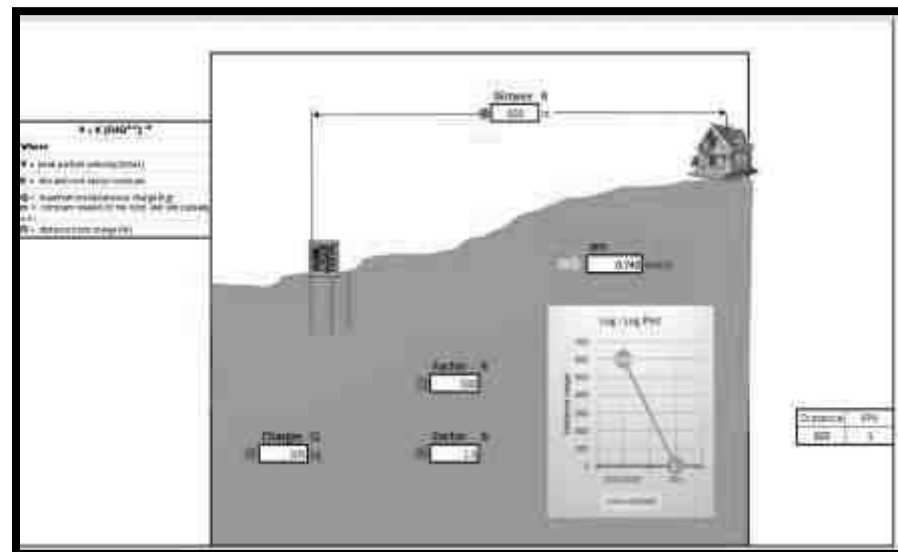
**TABLE 4.10: PREDICTED PPV VALUES DUE TO BLASTING**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	131	520	1.115
P2	105	600	0.743

P1



P2



From the above, the charge per blast of 131 Kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. It should be ensured that the explosives used for blasting at one blast should not exceed more than 28 Kg at any point of time. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

#### 4.4.3.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;

- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2<sup>nd</sup> Class Mines Manager/ 1<sup>st</sup> Class Mines Manager) will be appointed.
- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 Hz.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.

## **4.5 Ecology and Biodiversity**

### **4.5.1. Anticipated Impact on Flora**

- None of the plants will be cut during the operational phase of the mine.
- There shall be negligible air emissions or effluents from the project site. During the loading of the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.
- Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

### **4.5.2 Mitigation Measures**

#### **4.5.2.1. General Guidelines for Green Belt Development**

The project site should have land to develop a greenbelt in and around the limits of the mine, along roads, and another vacant area. The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. Although the project will not lead to any tree cutting, it is proposed to improve the greenery of the locality through plantation services. To avoid dust emissions, the mined materials will be covered with tarpaulin during transportation.

- Plants that grow fast will be preferred.
- Preference for high canopy covers plants with local varieties.
- Perennial and evergreen plants will be preferred.

- The development of the Green Belt is an important aspect for any plant because:
  - a. It improves the ambient air quality by controlling Suspended Particulate Matter (SPM) in the air.
  - b. It helps in noise abatement for the surrounding area.
  - c. It helps in the settlement of new birds and insects within itself.
  - d. It maintains the ecological balance.
  - e. It increases the aesthetic value of the site.

#### 4.5.2.2. Species Recommendation for Plantation granted in the District.

Following points have been considered while recommending the species for plantation:

- The natural growth of existing species and the survival rate of various species.
- Suitability of a particular plant species for a particular type of area.
- Creating biodiversity.
- Fast-growing, thick canopy copy, perennial, and evergreen large leaf area.
- Efficient in absorbing pollutants without major effects on natural growth.
- The following species may be considered primary for plantations best suited for the prevailing climate condition in the area.

**Table No 4.11. List of plant species proposed for Greenbelt development**

S. No	Name of the plant (Botanical)	Family Name	Common Name	Habit
1	Borassus flabellifer	Arecaceae	Panai	T
2	Morinda pubescens	Rubiaceae	Nuna	T
3	Pongamia pinnata	Fabaceae	Pungam	T
4	Thespesia Populnea	Malvaceae	Puvarasu	T
5	Syrygium cumini	Myrtaceae	Naval	T
6	Saraca asoca	Fabaceae	Asoca	T
7	Limonia acidissima	Rutaceae	Odham	T
8	Lannea coromandelica	Anacardiaceae	Vila maram	T
9	Cassia roxburghii	Fabaceae	Sengondrai	T
10	Pterocarpus marsupium	Fabaceae	Vengai	T

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### 4.5.3. Anticipated Impact on Fauna

- No rare, endemic & endangered species are reported in the buffer zone. However, during the course of mining, the management will practice the scientific method of mining with a proper Environmental Management Plan including pollution control measures especially for air and noise, to avoid any adverse impact on the surrounding wildlife.
- Fencing around the mine lease area to restrict the entry of stray animals.
- Green belt development will be carried out which will help in minimizing adverse impact on the flora found in the area.

#### 4.5.3.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area. Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment for the flora and fauna in consultation with the Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.
- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

#### 4.5.3.2. Mitigation Measures

- A suitable plan for the conservation of Schedule-I Species have been prepared and the necessary fund for implementation for the same will be made.
- All the preventive measures will be taken for the growth & and development of fauna.
- Creating and developing awareness for nature and wildlife in the adjoining villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 pm.

### 4.5.4. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Rough stone quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Kindly refer the Chapter 3, Clause No 3.7.3. Aquatic biodiversity is observed in the study area.

### 4.5.5. Impact Assessment on Biological Environment

This chapter highlights the various impacts on ecology and biodiversity due to mining activity. The major adverse impacts due to pre-mining and mining phases are loss of habitat, biodiversity, rare flora and fauna, fisheries and other aquatic life, migration of wildlife, and overall disruption of the ecology of the area. During the post-mining

phase after land restoration, ecology may effectively improve. A detail of impact and assessments was mentioned in Table No.4.2.

#### 4.5.6. Anticipated Environmental Impacts and Mitigation Measures of Gopanapalli Village, Rough Stone Quarry, Krishnagiri District, Tamil Nadu.

Details of anticipated issues for the next operation period were summarized with possible impacts and mitigation measures to meet the problem (Table No.4.12.).

**Table No: 4.12. Anticipated impact of Ecology and Biodiversity in Gopanapalli Village, Rough Stone Quarry, Krishnagiri District, Tamil Nadu.**

S. No	Aspect Description	Likely Impacts on Ecology and Biodiversity (EB)	Impact Consequence Probability Description Justification	Significance	Mitigation Measures
<b>Pre-mining phase</b>					
1	Uprooting of vegetation of lease area	Site specific loss of common floral diversity (Direct impact)	The site possesses Common floral (not tree) species. Clearance of these species will not result in loss of flora.	Less severe	No immediate action is required. However, a Greenbelt /plantation will be developed on the project site and on the periphery of the project boundary, which will improve the floral and faunal diversity of the project area.
		Site specific loss of associated faunal diversity (Partial impact)	The site supports only common species, which use a wide variety of habitats of the buffer zone reserve forest area. So, there is no threat of Faunal diversity		
		Loss of Habitat (Direct impact)	Site does not for unique / critical habitat structure for unique flora or fauna.		
<b>Mining phase</b>					
2	Excavation of mineral using machine and labours, transportation Activities will Generate noise.	Site-specific disturbance to normal faunal movements at the site due to noise. (Partial impact)	Site does not form unique / critical habitat structure for unique flora or fauna.	Less severe	-Mining activity should not be operated after 5PM. -Excavation of dump and transportation work should stop before 7PM.
3	Vehicular movement for transportation of materials will result in the generation of dust (Particulate	Impact on Surrounding agriculture and associated fauna due to deposition of dust and emission of CO.	The impact is less as the agricultural land is far from the core area.	Less severe	All vehicles will be certified for appropriate Emission levels. More plantations have been

	matter) due to haul roads and emission of Sulphur Dioxide, Nitrogen Dioxide, Carbon monoxide, etc.	(Indirect impact)			suggested Upgrade the vehicles with alternative fuels such as biodiesel, methanol, and biofuel around the mining area.
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**Table No. 4.13. Overall Ecological impact assessments of Gopanapalli Village, Rough Stone Quarry, Krishnagiri District, Tamil Nadu.**

S.No	Attributes	Assessment
1	Impact of mining activity on agricultural land near the proposed project site.	Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land and horticulture. Kindly refer to the conclusion.
2	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
3	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
4	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/coastline/estuary/sea	Sanamavu R.F. is located about 6.5km on the eastern side. There is no Eco Sensitive zone/ Critically polluted area/ HACA/CRZ located within 10 km radius of the area.
5	The proposed project restricts access to waterholes for wildlife	'No'
6	The proposed mining project impacts surface water quality that also provides water to wildlife	'No' 'Scheduled or threatened wildlife animals are sighted regularly core in the core area.
7	The proposed mining project increases siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
8	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
9	The project releases effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
10	Mining projects affect the forest-based livelihood/ any specific forest product on which local livelihood depended.	'No'
11	The project likely to affect migration routes.	'No' 'migration route was observed during the monitoring period.
12	The project is likely to affect the flora of an area, which have medicinal value	'No'
13	Forestland is to be diverted, has carbon high	'No' There was no forest land diverted.

	sequestration.	
14	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	'No'. Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.

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

## **4.6 Socio Economic Impacts**

### **4.6.1 Construction Phase**

#### **Anticipated Impacts:**

- ♣ No. of people will get employment during the construction stage resulting in the ancillary development and growth. Nearby Local people will be given preference for employment on the basis of their skill and experience.
- ♣ Further due to proposed project, influx of working community will also generate an indirect employment through development of nearby market/ shops, trade centers, activities, transportation etc.
- ♣ Population influx during the construction phase can introduce various water and vector borne diseases which can lead to various unhygienic health problems in the area by disturbing the existing sanitation infrastructure.
- ♣ Rapid diverse population influx at the project site can create unusual behavioural activity such as worker-community conflicts, increase violence such as theft/stabbing and increased consumption of drugs/alcohol within the area.
- ♣ Impacts on the health of nearby villagers can be envisaged due to the transportation activities leading to short term exposure of fugitive dust, resulting in various acute diseases such as increased eye irritation, nausea, headache etc.

#### **Mitigation measures:**

- ♣ Deploying of mobile toilets or the construction of temporary toilets will be done near to the construction site with the adequate water supply.
- ♣ Awareness programme will be conducted before the monsoon season regarding the spread of water borne/ vector diseases.
- ♣ Mosquito repellents will be provided in the nearby villages and at construction site to avoid the spread of diseases.
- ♣ To overcome behavioural impact, proper site in charge with timely supervision will be done. In advance, facilities with equipped medical and safety services will be provided to take a control over the incident/violence if any caused.
- ♣ To overcome behavioural impact, supervision will be done by site in charge. In advance, emergency cell will be formed with fully equipped communication system, medical and safety services to take control over the incident/violence caused.

### **4.6.2 Operation Phase:**

#### **Anticipated Impacts:**



♣ Long term exposure to the pollutants such as PM, SO<sub>2</sub> and NO<sub>2</sub> dust have a potential to create health impacts such as risk of cardiovascular and respiratory disease, eye irritation, bronchitis, lung damage, increased heart ailments, etc.

♣ Other impacts, associated with the applied for rough stone quarry Project will create a positive impact as it will result in the overall development of the area in respect to the infrastructure development, educational growth, health facilities etc., as a part of the CSR activity.

**Mitigation Measures:**

♣ In order to mitigate the long-term health impacts, efficient Air Pollution Control Equipment (APCE) like Bag House / Bag Filter / ESP will be installed at all major stacks to keep the emissions within the permissible limits. To reduce the gaseous emission, Pyro-process itself acts as a long SO<sub>2</sub> scrubber and De - NO<sub>x</sub> system will be installed for fuel burning along with calciner for low NO<sub>x</sub> formation. To reduce fugitive emission from vehicles and machineries will be regularly monitored and maintained.

♣ For emergency, proposed to develop an occupational health centre for its employees and nearby villagers.

**4.3 Impact Evaluation:**

*Table 4.14 Impact Evaluation Impact evaluation is given in table below.*

<b>Impact Evaluation Element</b>	Impact on socio economics due to the applied for Gopanapalli rough stone quarries over an extent of 17.50.0 ha of Government land of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State.			
<b>Potential Effect/ Concern</b>	Proposed project will provide direct & indirect employment opportunities to the local residents, which will help to increase their earning and better living standard as well as further up-liftment of socio-economic status of the area.			
<b>Characteristics of Impacts</b>				
Nature	Positive		Negative	Netural
	✓			
Type	Direct	Indirect	Cumulative	
			✓	
Extent	Project area	Local	Zonal	Regional
		✓		
Duration	Short time		Long term	
			✓	
Intensity	Low		Medium	High
			✓	

Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
			✓	
<b>Significance of Impact</b>				
Significance	Insignificant	Minor	Moderate	Major
			✓	

#### 4.7 Occupational Health and Safety

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

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

##### 4.7.1 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

##### 4.7.2 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.

##### 4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;

- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

#### **4.7.4 Occupational Health Survey**

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- General physical tests
- Audiometric tests
- Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly
- Lung function test – yearly, those who are exposed to dust
- Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment.

First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

#### **4.8 Mine Waste Management**

No waste is anticipated from any of the proposed quarries.

#### **4.9 Mine Closure**

Mine closure plan is the most important environmental requirement in mining projects. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project. Therefore, progressive mine closure plan should be specifically dealt with in the mining plan and is to be reviewed along with mining plan. As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

The primary aim is to ensure that the following broad objectives along with the abandonment of the mine can be successfully achieved:

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- To protect public health and safety of the surrounding habitation
- To minimize environmental damage
- To conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

##### **4.9.1 Mine Closure Criteria**

The criteria involved in mine closure are discussed below:

###### **4.9.1.1 Physical Stability**

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.,

#### **4.9.1.2 Chemical Stability**

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharge likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quantity, etc., could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

#### **4.9.1.3 Biological Stability**

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g., for development of social forestry
- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally e.g. planning for agriculture.
- Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g., development of green barriers.

The Mine closure plan should be as per the approved mining plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

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

### 5.0 Introduction:

Consideration of alternatives to a project proposal is a requirement of EIA process. This quarry is site specific. The site has been selected based on geological investigation and exploration from the Proposed quarry around the project site. Drilling, Blasting, Excavation, Loading & Transportation will be carried out in this quarrying operation.

- This area denotes the indicative of flow pattern of the rock mass in N30<sup>0</sup>E to S30<sup>0</sup>W with dipping SE60<sup>0</sup>.
- Transportation facility for materials & manpower.
- Overall impact on environment and mitigation feasibility.
- Socio – economic background.

Enough infrastructure exists and lesser resources are required to be deployed. Since, any major construction for infrastructure is not required and hence does not affect the environment considerably.

### 5.1 Factors Behind the Selection of Project Site

Rough Stone Quarry Projects at Gopanapalli cluster quarries are a site specific. The proposed mining lease area has following advantages: -

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease area.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, fire fighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- Study area falls in seismic zone – III, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

### 5.2 Analysis of Alternative Site

The mineral deposits are site specific in nature; hence, question of seeking alternate site does not arise for this project.

### 5.3 Factors Behind Selection of Proposed Technology

Mechanized open cast mining operation with drilling and blasting method will be used to extract Rough Stone quarry in the area. The quarry areas fall in the clusters has following advantages –

- As the mineral deposition is homogeneous and batholith formation, therefore opencast method of working out deposit is preferred over underground method.

- 
- The material will be loaded after sprinkling with water with the help of excavators into dumpers / trippers and transported to the needy customers.
  - Blasting and availability of drills along with controlled blasting technology gives desired fragmentation so that the mineral is handled safely and used without secondary blasting.

Semi skilled labours fit for quarrying operations are easily available around the nearby villages.

#### **5.4 *Analysis of Alternative Technology***

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

## CHAPTER – 6: ENVIRONMENTAL MONITORING PROGRAMME

### 6.0 General

Environmental Monitoring will be taken up for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by MoEF & Consent to Operate issued by the State Pollution Control Board. Monitoring reports will be submitted to regulator as per statutory requirements. The entire monitoring work will be carried out by MoEF & CC / NABL recognized laboratories.

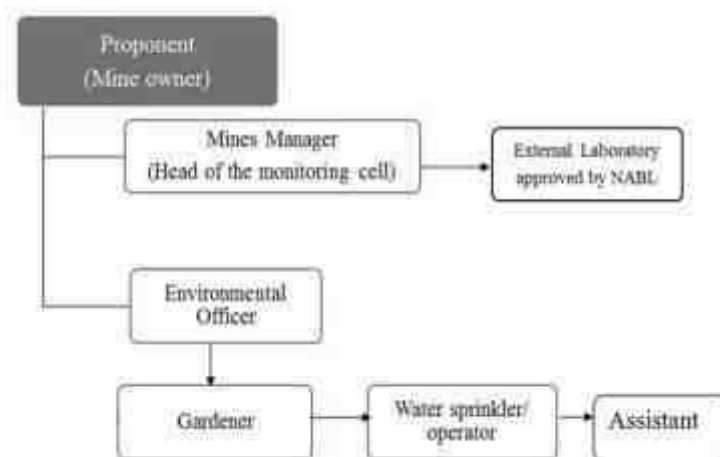
The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness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

### 6.1 Methodology of Monitoring Mechanism

Implementation of EMP and periodic monitoring will be carried out by the proponents and respective quarry owners in the cluster quarries. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed project; Mine Management Level environmental protection measures like dust suppression, treatment and recycling of waste water, control of noise due to blasting and Ground vibration, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of other hand, implementation of area level protection measures like plantation and green Environmental Management Plan and environmental clearance conditions will be monitored by the proponent. On the belt development, environmental quality monitoring etc.,

An environment monitoring cell (EMC) will be constituted at the quarry consisting of following members to monitor the implementation of EMP and other environmental protection measures.

**FIGURE 6.1 HIERARCHY OF ENVIRONMENTAL MONITORING CELL**



The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies. The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of monthly, half-yearly and yearly. The half-yearly reports will be submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF & CC).

### **6.2 Implementation Schedule of Mitigation Measures**

The mitigation measures proposed in Chapter-4 will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

**TABLE 6.1 IMPLEMENTATION SCHEDULE**

Sl No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediately after the commencement of the project
2	Soil Quality Control Measures	Before commissioning of the project	Immediately after the commencement of the project
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediately and as project progress

### **6.3 Monitoring Schedule and Frequency**

The environmental monitoring will be conducted in the mine operations as follows:

- Air quality;
- Water and wastewater quality;
- Noise levels;



- Soil Quality; and
- Greenbelt Development

The details of monitoring are detailed in Table 6.2

**TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC**

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> .
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	-	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	-	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

Source: Guidance of manual for mining of minerals, February 2010.

#### 6.4 Environmental Policy of the Proponents

The project proponents in the proposed quarries are committed to ensure that:

- Protect the environment by control and prevention of pollution and promote green environment.
- To operate the quarry with an objective of no injuries and accidents at the work place and provide a safe work place for our employees, contractors and others who perform their duties.
- Adequate health care will be taken to all the employees and create process to reduce the adverse effect of the operations on Health of the employees.
- Provide safety appliance and continuous training in safety to employees to ensure safe production and achieve the target of zero accidents.
- Develop safe working methods and practices, remove unsafe work conditions and consider all the aspects at the early stages of process development to provide safe working atmosphere.
- Communicate Safety, Health and Environmental Policy to all employees for better understanding and practice.

## 6.5 Budgetary Provision for Environmental Monitoring Programme

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF.

The proposed total cost for Environmental Monitoring Programme for Four proposed quarries in cluster for the mining plan period is Rs 7,00,000/-.

**TABLE 6.3 ENVIRONMENT MONITORING BUDGET**

<b>Parameter</b>	<b>Sl. Nos</b>	<b>Capital Cost</b>
Air Quality, Meteorology, Water Quality, Hydrology, Soil Quality Noise Quality, Vibration Study Greenbelt	P1	Rs.3,50,000/-
	P2	Rs.3,50,000/-
	<b>Total</b>	<b>Rs. 7,00,000/-</b>

Source: Approved Mining Plan

## 6.6 Reporting Schedules of Monitored Data

The monitored data on Air quality, Water quality, Noise levels and other environmental attributes will be periodically examined by the proponent with Environmental Monitoring cell and necessary corrective measures will be carried out. 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 – Half yearly status report
- TNPCB - Half yearly status report
- Department of Geology and Mining: quarterly, half yearly annual reports
- SEIAA, Chennai, Tamil Nadu

Besides the Mines Manager/Agent will submit the periodical reports to –

- Director of mines safety,
- Labour enforcement officer,
- Controller of explosives as per the norms stipulated by the department.

## CHAPTER – 7: ADDITIONAL STUDIES

### 7.0 General

The following Additional Studies were done as per items identified by project proponent and items identified by regulatory authority. Items identified by public and other stakeholders will be incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management

### 7.1. *Public Consultation:*

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA / EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

### 7.2 *Risk Assessment*

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31<sup>st</sup> December, 2002. 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 cluster quarry operation will be carried out under the direction of a Qualified Competent Mine manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

**TABLE 7.1 RISK ASSESSMENT & CONTROL MEASURES**

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	<ul style="list-style-type: none"> <li>▪ 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;</li> <li>▪ Entry of unauthorized persons will be prohibited;</li> <li>▪ Fire fighting and first-aid provisions in the mine office complex and mining area;</li> </ul>

			<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ Working of quarry, as per approved plans and regularly updating the mine plans;</li> <li>▪ Cleaning of mine faces shall be daily done in order to avoid any overhang or undercut;</li> <li>▪ Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager;</li> <li>▪ Maintenance and testing of all mining equipment as per manufacturer 's guidelines.</li> </ul>
2	Drilling& Blasting	<p>Due to improper and unsafe practices</p> <p>Due to high pressure of compressed air, hoses may burst</p> <p>Drill Rod may break</p>	<ul style="list-style-type: none"> <li>▪ Safe operating procedure established for drilling (SOP) will be strictly followed.</li> <li>▪ Only trained operators will be deployed.</li> <li>▪ 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.</li> <li>▪ Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</li> <li>▪ Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual.</li> <li>▪ All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition.</li> <li>▪ Operator shall regularly use all the personal protective equipment.</li> </ul>
3	Blasting	<p>Fly rock, ground vibration, Noise and dust.</p> <p>Improper charging, stemming &amp; Blasting/fining of blast holes</p> <p>Vibration due to movement of vehicles</p>	<ul style="list-style-type: none"> <li>▪ The maximum charge per delay and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blast can be conducted safely.</li> <li>▪ SOP for Charging, Stemming &amp; Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation</li> <li>▪ Shots are fired during daytime only.</li> <li>▪ All holes charged on any one day shall be fired on the same day.</li> <li>▪ The danger zone is and will be distinctly demarcated (by means of red flags)</li> </ul>
4	Transportation	Potential hazards and unsafe workings	<ul style="list-style-type: none"> <li>▪ Before commencing work, drivers personally check the dumper/truck/tipper</li> </ul>

		<p>contributing to accident and injuries</p> <p>Overloading of material</p> <p>While reversal &amp; overtaking of vehicle</p> <p>Operator of truck leaving his cabin when it is loaded.</p>	<p>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.</p> <ul style="list-style-type: none"> <li>▪ Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle.</li> <li>▪ Concave mirrors should be kept at all corners</li> <li>▪ All vehicles should be fitted with reverse horn with one spotter at every tipping point</li> <li>▪ Loading according to the vehicle capacity</li> <li>▪ Periodical maintenance of vehicles as per operator manual.</li> </ul>
5	Natural calamities	Unexpected happenings	<ul style="list-style-type: none"> <li>▪ Escape Routes will be provided to prevent inundation of storm water</li> <li>▪ Fire Extinguishers &amp; Sand Buckets</li> </ul>
6	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	<ul style="list-style-type: none"> <li>▪ Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.</li> </ul>

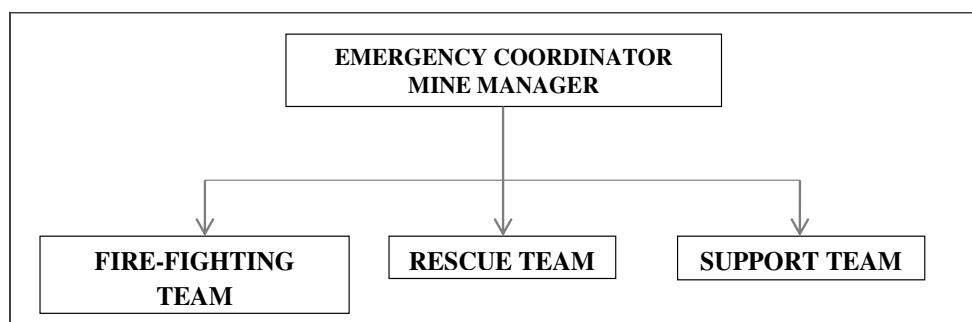
### 7.3 Disaster Management Plan

Natural disasters like Earthquake, Land slides has not been recorded in the past history as the terrain is categorized under seismic zone III. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated. The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations and the coordination among key personnel and their team has been shown in Fig 7.1.

**FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT FOR P1 & P2**

The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.2.

**TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION**

DESIGNATION	QUALIFICATION
<b>FIRE-FIGHTING TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
<b>RESCUE TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member/ Incident Controller (IC)	Environment Officer
Team Member	Mining Foreman
<b>SUPPORT TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team Leader/ Emergency Security Controller	Mines Foreman

Once the mine becomes operational, the above table along with names of personnel will be prepared and made easily available to workers. A mobile communication network and wireless shall connect Mine Emergency Control Room (MECR) to control various departments of the mine, fire station and neighbouring industrial units/mines.

### **Roles and responsibilities of emergency team –**

#### **(a) Emergency coordinator (EC)**

The emergency coordinator shall assume absolute control of site

#### **(b) Incident controller (IC)**

Incident controller shall be a person who shall go to the scene of emergency and supervise the action plan to overcome or contain the emergency. Shift supervisor or Environmental Officer shall assume the charge of IC.

#### **(c) Communication and advisory team**

The advisory and communication team shall consist of heads of Mining Departments i.e., Mines Manager

**(d) Roll call coordinator**

The Mine Foreman shall be Roll Call Coordinator. The roll call coordinator will conduct the roll call and will evacuate the mine personnel to assembly point. His prime function shall be to account for all personnel on duty.

**(e) Search and rescue team**

There shall be a group of people trained and equipped to carryout rescue operation of trapped personnel. The people trained in first aid and fire-fighting shall be included in search and rescue team

**(f) Emergency security controller**

Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies e.g. fire brigade, police, doctor and media men etc.,

**Emergency control procedure**

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- Emergency security controller will commence his role from main gate office
- Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
- He will receive information continuously from incident controller and give decisions and directions to:
  - Incident controller
  - Mine control rooms
  - Emergency security controller

**Proposed fire extinguishers at different locations –**

The following type of fire extinguishers is proposed at strategic locations within the quarry.

<b>Location</b>	<b>Type of Fire Extinguishers</b>
Electrical Equipment's	CO <sub>2</sub> type, foam type, dry chemical powder type
Fuel Storage Area	CO <sub>2</sub> type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type

**Alarm system to be followed during disaster**

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system.

On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

The features of alarm system will be explained to one and all to avoid panic or misunderstanding during disaster.

**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
- Fire fighting and first-aid provisions in the mines office complex and mining area will be 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 the quarry in phase manner
- Cleaning of mine faces will be carried out regularly
- Provision of high-capacity standby pumps with generator sets with enough quantity of diesel for emergency pumping especially during monsoon.
- A blasting SIREN will be used at the time of blasting for audio signal.
- Checking of blasting area for any un-blasted hole or material.
- Warning notice boards indicating the time of blasting and NOT TO TRESPASS will be displayed at prominent places

#### 7.4 CUMULATIVE IMPACT STUDY

There are two proposed quarries falls in the cluster. The list of quarries is as below –

**TABLE 7.3: LIST OF QUARRIES WITHIN 500 METER RADIUS FROM THIS PROPOSAL**

PROPOSED QUARRIES					
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	G.O. No & Date	Status
P1	M/s. Natural stone Industry	220/1 (P-1) of Gopanapalli Village, Hosur Taluk	3.00.0	Roc.535/2022/Mines dated: 21.04.2022	Lr No.SEIAA-TN/F.No.9943/SEAC/ToR-1494/2023 Dated:22.06.2023.
P2	M/s. Sree Krish Roughstone	220/1 (P-3) of Gopanapalli Village, Hosur Taluk	3.00.0	Roc.537/2022/Mines dated: 21.04.2022	Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023.
NEAREST PROPOSED QUARRIES					
P3	Thiru.Vijayakumar	220/1 (P-4)	2.00.0	Roc.538/2022/Mines dated: 26.04.2022	Precise area given
P4	Thiru.S. Raghu	381 (P-1)	1.30.0	Roc.539/2022/Mines dated: 04.05.2022	Lr No. SEIAA-TN/F.No.9566/SEAC/ToR-1326/2023 Dated:10.02.2023.
P5	Thiru.C.Nithin Reddy	220/1 (P-2)	3.00.0	Roc.536/2022/Mines	Lr No. SEIAA-



				dated: 05.05.2022	<b>TN/F.No.9570/SEAC/ToR-1348/2022 Dated:10.02.2023.</b>
P6	<b>Thiru.Dhivakar</b>	381/1 (P-2)	1.50.0	Roc.540/2022/Mines dated: 22.04.2022	<b>Precise area given</b>
<b>Total Extent</b>			<b>13.80.0 Ha</b>		
<b>EXISTING QUARRIES</b>					
<b>CODE</b>	<b>Name of the Proponent and Address</b>	<b>S.F. Nos, Village &amp; Taluk</b>	<b>Extent in Ha</b>	<b>G.O. No &amp; Date</b>	<b>Lease Period</b>
<b>E-1</b>	<b>P. Venkata Reddy</b>	<b>457 (P-2)</b>	<b>3.70.0</b>	Roc.112/2016/Mines dated: 26.02.2020	26.02.2020 to 25.02.2030
<b>Total</b>			<b>3.70.0</b>		
<b>NIL</b>					
<b>ABANDONED/EXPIRED QURRY</b>					
<b>CODE</b>	<b>Name of the Proponent and Address</b>	<b>S.F. Nos, Village &amp; Taluk</b>	<b>Extent in Ha</b>		<b>Lease Period</b>
<b>NIL</b>					
<b>TOTAL CLUSTER EXTENT</b>			<b>17.50.0 Ha</b>		

Source :500m Cluster letter by AD, G&M, Krishnagiri.

Note:-

- Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

As per above notification S.O.2269(E) dated : 01.07.2016 in para (b) in Appendix XI,- (ii)(5): The lease not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environment Management Plan and the Regional Environmental Management Plan”

**TABLE 7.4: SALIENT FEATURES OF THE PROPOSED PROJECTS IN CLUSTER**

<b>SALIENT FEATURES OF PROPOSAL “P1”</b>		
Name of the Mine	<b>M/s. Natural stone Industry</b>	
Land Type	It is a Government Poramboke Land.	
S.F. Nos	220/1 (P-1)	
Extent	<b>3.00.0 Ha</b>	
Previous quarry operation details	It is a fresh Lease area.	
Geological Reserves	Rough Stone quarry	TopSoil (Gravel)
	18,80,592m <sup>3</sup>	92,442m <sup>3</sup>
Mineable Reserves	Rough Stone quarry	TopSoil (Gravel)
	90,4638m <sup>3</sup>	75,438 m <sup>3</sup>
Proposed production for First Five years	60,25,88m <sup>3</sup>	75,438 m <sup>3</sup> 38m (3m topsoil (Gravel) +35m Roughstone)
Proposed production for Second Five years	30,2050m <sup>3</sup>	35m (35m Roughstone)
Mining Plan Period / Lease Period	10 Years	
Depth of mining	66m (3m Topsoil +63m Rough stone)	
Ultimate Pit Dimension	198m(L) x 127m (W) x54m(D)	
Toposheet No	57 H/14	
Latitude	12°37'59.2819"N to 12°37'56.7500"N	
Longitude	77°48'41.4624"E to 77°48'33.7498"E	
Highest elevation	870-858m AMSL	
Water table depth	88m from the Below surface	
Machinery proposed	Jack Hammer	6
	Compressor	2

	Hydraulic Excavator	2
	Tippers	2
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18Nos	
Total Project Cost	Operational Cost	Rs. 4,42,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 4,46,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	520m-N	
<b>SALIENT FEATURES OF PROPOSAL "P2"</b>		
Name of the Mine	<b>M/s.Sree Krish Roughstone</b>	
Land Type	It is a Government Poramboke Land.	
S.F. No.	220/1 (P-3)	
Extent	<b>3.00.0 Ha</b>	
Previous quarry operation details	It is a fresh lease application	
Depth of Mining	66m (3m Topsoil +63m Rough stone)	
Geological Resources	Rough Stone quarry	Topsoil
	1715980 m <sup>3</sup>	88,620m <sup>3</sup>
Mineable Reserves	Rough Stone quarry	Topsoil
	7,25,186m <sup>3</sup>	68,760m <sup>3</sup>
Proposed production for First Five years	512190 m <sup>3</sup> Reserve 38m (3m topsoil (Gravel) +35m Roughstone)	
Proposed production for Second Five years	212996 m <sup>3</sup> (28m Roughstone Reserve)	
Mining Plan Period / Lease Period	10 Years	
Ultimate Pit Dimension	191m (L) X 120m (W) X 56m (D)	
Toposheet No	57 -H/14	
Water table depth	88m from the Below surface	
Latitude	12°37'56.0941"N to 12°37'54.3668"N	
Longitude	77°48'49.1130"E to 77°48'40.8039"E	
Highest Elevation	858m to 848m AMSL	
Machinery	Jack Hammer	6
	Compressor	2
	Hydraulic Excavator	2
	Tippers	2
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18 Nos	
Total Cost	Operational Cost	Rs. 4,42,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 4,46,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	600m-NW	

Source: Approved Mining Plan

<b>SALIENT FEATURES OF PROPOSAL "P4"</b>		
Name of the Mine	<b>Thiru.S.Raghu, Roughstone quarry</b>	

Land Type	It is a Government Poramboke Land.	
S.F. No.	381 (P-1)	
Extent	<b>1.30.0 Ha</b>	
Previous quarry operation details	It is a fresh lease application	
Depth of Mining	66m (3m Topsoil +63m Rough stone)	
Geological Resources	Rough Stone quarry	Topsoil
	616028m <sup>3</sup>	-
Mineable Reserves	Rough Stone quarry	Topsoil
	231238 m <sup>3</sup>	17316
Proposed production for First Five years	164437 m <sup>3</sup>	17316 m <sup>3</sup>
	30m(2m top soi (Gravel) +28m Roughstone)	
Proposed production for Second Five years	66801 m <sup>3</sup>	
Mining Plan Period / Lease Period	10 Years	
Depth	51m (Surface ground level above height 8m & Surface ground level below Depth 43m)	
Ultimate Pit Dimension	111m (L) X 78.0m (W) X 43.0m (D)	
Toposheet No	57 -H/14	
Water table depth	88m from the Below surface	
Latitude	12°38'05.49"N to 12°38'03.12"N	
Longitude	77°48'43.41"E to 77°48'37.72"E	
Highest Elevation	800m to 900m AMSL	
Machinery	Jack Hammer	4
	Hydraulic Excavator	1
	Tippers	1
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18 Nos	
Total Cost	Operational Cost	Rs. 1,61,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 1,65,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	450m-NW	

Source: Approved Mining Plan

<b>SALIENT FEATURES OF PROPOSAL "P5"</b>		
Name of the Mine	<b>Thiru.C. Nithin Reddy, Roughstone quarry</b>	
Land Type	It is a Government Poramboke Land. It is not fit for cultivation.	
S.F. No.	220/1 (P-2)	
Extent	<b>3.00.0 Ha</b>	
Previous quarry operation details	It is a fresh lease application	
Geological Resources	Rough Stone quarry	Topsoil
	1644538 m <sup>3</sup>	41760 m <sup>3</sup>
Mineable Reserves	Rough Stone quarry	Topsoil
	780843m <sup>3</sup>	71190 m <sup>3</sup>
Proposed production for First Five years	575386 m <sup>3</sup>	71190 m <sup>3</sup>
	Reserve 38m (3m topsoil (Gravel) +35m Roughstone)	

Proposed production for Second Five years	205457 m <sup>3</sup> (28m Roughstone Reserve)	
Mining Plan Period / Lease Period	10 Years	
Proposed depth of mining	59m (3m Topsoil (Gravel) +56m Roughstone)	
Ultimate Pit Dimension	217m (L) X 109m (W) X 54m (D)	
Toposheet No	57 -H/14	
Water table depth	88m from the Below surface	
Latitude	12°37'54.3668"N to 12°37'53.1120"N	
Longitude	77°48'40.8039"E to 77°48'32.8686"E	
Highest Elevation	882m to 877m AMSL	
Machinery	Jack Hammer	6
	Hydraulic Excavator	2
	Tippers	2
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18 Nos	
Total Cost	Operational Cost	Rs. 4,93,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 4,97,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	670m-NW	

Source: Approved Mining Plan

<b>SALIENT FEATURES OF PROPOSAL "E1"</b>		
Name of the Mine	<b>THIRU.P.VENKATA REDDY.</b>	
Land Type	It is a Government Poramboke Land.	
S.F. No.	457 (Part-2),	
Extent	<b>3.70.0 Ha</b>	
Previous quarry operation details	It is a Existing lease application	
Mineable Reserves	Rough Stone quarry	Topsoil
	378932m <sup>3</sup>	85023m <sup>3</sup>
Proposed production for First Five years	3,78,932 m <sup>3</sup> Roughstone	1,27,127 m <sup>3</sup> (Topsoil)
Mining Plan Period / Lease Period	5 Years	
Existing capacity	Top Soil = PART-II – 1491.0 Sq.m X Depth 3.0m = 4473 Cbm Rough Stone = PART-II – 1491.0 Sq.m X Depth 7.0m =10437 Cbm	
Toposheet No	57 -H/14	
Water table depth	88m from the Below surface	
Latitude	12°37'36.14"N to 12°37'39.59"N	
Longitude	77°48'49.54"E to 77°48'56.11"E	
Highest Elevation	877m to 890m AMSL	
Machinery	Jack Hammer	6
	Hydraulic Excavator	2
	Tippers	2
Water requirements	2.5 KLD	
Blasting	The massive formation shall be broken into pieces of portable size by drilling and proposed control blasting using jack hammers and shot hole Blasting. Usage of Slurry Explosive with MSD detonators	
Manpower Deployment	18 Nos	

Total Cost	Operational Cost	Rs. 4,62,90,000/-
	EMP Cost	Rs. 3,50,000/-
	<b>Total</b>	<b>Rs. 4,66,40,000/-</b>
CER Cost	Rs.5,00,000/-	
Nearest Habitation	800m-NE	

**Impact on Air Environment –**

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.5 & 7.6

**TABLE 7.5 CUMULATIVE PRODUCTION LOAD OF ROUGH STONE QUARRY IN CLUSTER**

Quarry	Production for Ten-year plan period m <sup>3</sup>	Per Year Production in m <sup>3</sup>	Per Day Production in m <sup>3</sup>	Number of Lorry Load Per Day @ 12m <sup>3</sup> per load
P1	9,04,638	90,464	302	25 Trips /Day
P2	5,12,190	51,219	171	14Trips /Day
P3	-	-	-	-
P4	2,31,238	23124	77	6 Trips /Day
P5	7,80,843	78084.3	260	22 Trips /Day
P6	-	-	-	-
<b>Total</b>	<b>24,28,909</b>	<b>242891</b>	<b>810</b>	<b>66 Trips /Day</b>
Quarry	Production for five year plan period m <sup>3</sup>	Per Year Production in m <sup>3</sup>	Per Day Production in m <sup>3</sup>	Number of Lorry Load Per Day @ 12m <sup>3</sup> per load
E1	3,78,932 m <sup>3</sup>	75,786	253	21 Trips /Day
<b>Total</b>	<b>3,78,932 m<sup>3</sup></b>	<b>75,786</b>	<b>253</b>	<b>21 Trips /Day</b>
<b>G.Total</b>	<b>2,807,841</b>	<b>318677</b>	<b>1063</b>	<b>87 Trips /Day</b>

**TABLE 7.6: CUMULATIVE PRODUCTION OF TOP SOIL (GRAVEL) IN CLUSTER**

Quarry	Mineable Reserves in m <sup>3</sup>	Per Year Production in m <sup>3</sup>	Per Day Production in m <sup>3</sup>	Number of Lorry Load @ 12m <sup>3</sup> per load
P1	75,438	75,438	251	21 Trips /Day
P2	68,760	68,760	229	19 Trips /Day
P3	-	-	-	-
P4	17,316	17,316	58	5 Trips /Day
P5	71,190	71,190	237	20 Trips /Day
P6	-	-	--	-
<b>Total</b>	<b>2,32,704</b>	<b>2,3,2704</b>	<b>775</b>	<b>65 Trips/ Day</b>
E1	1,27,127	42,396	141	12 Trips /Day
<b>Total</b>	<b>1,27,127</b>	<b>42,396</b>	<b>141</b>	<b>12 Trips /Day</b>
<b>G.Total</b>	<b>3,59,831</b>	<b>2,75,100</b>	<b>916</b>	<b>77 Trips /Day</b>

Source: Approved Mining plans of the respective projects

Based on the above production quantities the emissions due to various activities in all the 2 proposal quarries and 1 existing quarry includes various activities like ground preparation, excavation, handling and transport of mineral. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.7.

**TABLE 7.7: EMISSION ESTIMATION FROM CLUSTER**

EMISSION ESTIMATION FOR QUARRY "P1"				
Estimated Emission Rate for PM <sub>10</sub>	Activity	Source type	Value	Unit

	Drilling	Point Source	0.119071544	g/s
	Blasting	Point Source	0.005789678	g/s
	Mineral Loading	Point Source	0.048362098	g/s
	Haul Road	Line Source	0.002518767	g/s/m
	Overall Mine	Area Source	0.067173769	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.002340806	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000163049	g/s
<b>EMISSION ESTIMATION FOR QUARRY "P2"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.110601125	g/s
	Blasting	Point Source	0.004003245	g/s
	Mineral Loading	Point Source	0.047431236	g/s
	Haul Road	Line Source	0.002512301	g/s/m
	Overall Mine	Area Source	0.065685948	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.001942304	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000133267	g/s

Source: Emission Formula

**TABLE 7.8: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER**

PM <sub>10</sub> in µg/m <sup>3</sup>	
Location	AAQ1 – CORE
Background (average)	46.0
Highest Incremental	15.9
Resultant	61.9
NAAQ Norms	100 µg/m <sup>3</sup>
PM <sub>2.5</sub> in µg/m <sup>3</sup>	
Background (average)	23.7
Highest Incremental	7.82
Resultant	31.6
NAAQ Norms	80 µg/m <sup>3</sup>
SO <sub>2</sub> in µg/m <sup>3</sup>	
Location	AAQ1 – CORE
Background (average)	8.10
Highest Incremental	2.29
Resultant	10.4
NAAQ Norms	80 µg/m <sup>3</sup>
NO <sub>x</sub> in µg/m <sup>3</sup>	
Location	AAQ1 – CORE
Background (average)	23.9
Incremental	10.62
Resultant	34.5
NAAQ Norms	80 µg/m <sup>3</sup>

### Noise Environment

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500 m radius.

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}$$

Where:

$L_{p1}$  &  $L_{p2}$  are sound levels at points located at distances  $r_1$  &  $r_2$  from the source.

$A_{e1,2}$  is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p_{total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

Source data has been computed taking into account of all the machinery and activities used in the mining process.

**TABLE 7.9: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER**

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
N1	48.3	60.1	60.4	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
N2	48.8	56.6	57.2	
N3	49.7	45.3	51.0	
N4	49.3	32.1	49.4	
N5	45.9	26.5	45.9	
N6	43.2	25.3	43.3	
N7	45.9	24.3	45.9	
N8	47.1	26.1	47.1	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 24.3– 45.3 dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

### Ground Vibrations

Ground vibrations due to mining activities in the all the 2-proposal quarry within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the all the 2-proposal quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining areas and may cause injury to persons or damage to the structures. Nearest Habitations from 2 mines respectively are as in below Table 7.10.

**TABLE 7.10: NEAREST HABITATION FROM EACH MINE**

Location ID	Distance in Meters
Habitation Near P1	520
Habitation Near P2	600
Habitation Near P3	-
Habitation Near P4	450
Habitation Near P5	670
Habitation Near P6	-
Habitation Near E1	800

Source: Satellite Imagery and Field Data

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

**TABLE 7.11: GROUND VIBRATIONS AT 2 MINES**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	131	520	1.115
P2	105	600	0.743

Source: PPV Calculation

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

### Socio Economic Environment –

The 2 mines shall provide employment and revenue will be created to government

**TABLE 7.12: SOCIO ECONOMIC BENEFITS FROM CLUSTER MINES**

Location Code	Employment	Project Cost	CER Cost
P1	18	Rs. 4,46,40,000/-	Rs.5,00,000/-
P2	18	Rs. 4,46,40,000/-	Rs.5,00,000/-
P3	-	-	-
P4	18	Rs. 1,65,40,000/-	Rs.5,00,000/-
P5	18	Rs. 4,97,40,000/-	Rs.5,00,000/-



P6	-	-	-
E1	18	Rs.4,66,40000/-	Rs.5,00,000/-
<b>Grand Total</b>	<b>90</b>	<b>Rs. 20,22,00,000</b>	<b>Rs.25,00,000/-</b>

A total of 36 people will get employment due to 2 mines in cluster. Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines.

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is  $\leq$  100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- 4 Proposed projects shall fund towards CER – **Rs..20,00,000/-**
- 1 Existing projects shall fund towards CER **Rs. 5,00,000/-**

**TABLE 7.13: GREENBELT DEVELOPMENT BENEFITS FROM 2MINES**

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survival %	Area to be planted	Name of the species
I	It is proposed to plant 1500Nos of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Unutilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc
PROPOSAL FOR P2				
I	It is proposed to plant <b>1500 Nos</b> of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Unutilized area's and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc.,

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Pongamia Pinnata, Casuarina, etc in the Cluster at a rate of 1500 Trees Planted over a period of 5 Years with Survival Rate of 80% over an area of all proposed quarries.

## 7.5 PLASTIC WASTE MANAGEMENT PLAN FOR P1 TO P2

All the Project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (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.

### Objective –

- To investigate the actual supply chain network of plastic waste.
- To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- Preparation of a system design layout, and necessary modalities for implementation and monitoring.

**TABLE 7.14: ACTION PLAN TO MANAGE PLASTIC WASTE**

Sl.No.	Activity	Responsibility
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager

2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

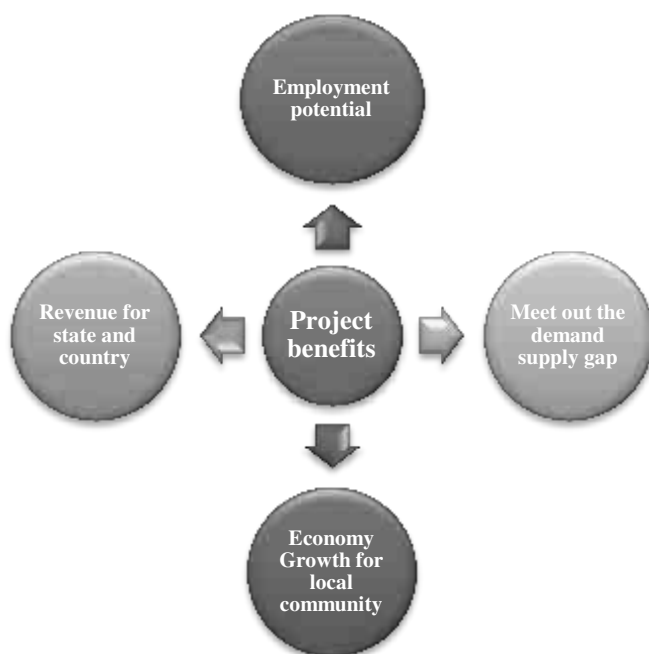
Source: Proposed by FAE's and EC

## CHAPTER – 8: PROJECT BENEFITS

### 8.0 General

The two Proposed Projects for Quarrying Rough Stone quarry at Gopanapalli Village Cluster Quarries Village aims to produce cumulatively **14,16,828m<sup>3</sup>** Rough Stone quarry over period of 10 Years & **144198 m<sup>3</sup>** of Topsoil over a period of 1 Years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits

- Increase in Employment Potential
- Improvement in Socio-Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure



### 8.1 Employment Potential

It is proposed to provide employment to about 36 persons for carrying out mining operations and give preference to the local people in providing employment. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

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## 8.2 Socio-Economic Welfare Measures Proposed

The impact of mining activity in the area will be more positive than negative on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

## 8.3 Improvement in Physical Infrastructure

The proposed project site is located in Gopanapalli Village, Hosur Taluk, Krishnagiri District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to the cluster quarry projects.

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

## 8.4 Improvement in Social Infrastructure

The quarry projects in the region will have positive impact on the social economic condition of the area by way of providing employment to the local peoples; thereby increasing the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture.

- Social welfare program like medical camps, educational facilities to the poverty level students, providing water supply from the quarries during drought seasons will be taken from the project proponents.
- Supplementing Govt. efforts in health monitoring camps, social welfare and various Awareness programs among the rural population.

## 8.5 Other Tangible Benefits

The proposed quarry project is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the quarry site and other community services.
- Additional housing demand for rental accommodation will increase.
- Cultural, recreation and aesthetic facilities will also improve.
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity.
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

## CORPORATE SOCIAL RESPONSIBILITY

Individual Project Proponents will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 10 km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas –

- Health Services
- Social Development
- Infrastructure Development
- Education & Sports
- Self-Employment

### CSR Cost Estimation

- CSR activities will be taken up in the Gopanapalli village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

### CORPORATE ENVIRONMENT RESPONSIBILITY–

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018.

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is  $\leq$  100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC and the total CER amount from the 2 proposed mines is Rs **Rs 10,00,000/-**

**TABLE 8.1 CER – ACTION PLAN**

<b>Code</b>	<b>CER</b>
P1	Rs 5,00,000/-
P2	Rs 5,00,000/-
<b>Total</b>	<b>Rs 10,00,000/-</b>

Source: Field survey conducted by FAE, consultation with project proponent

## **CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS**

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

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## **CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN – P1**

### ***10.1 General***

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

### ***10.2 Environmental Policy***

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent *M/s. Natural stone Industry* will

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities.
- Allocate necessary resources to ensure the implementation of the environmental policy.
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

### **Description of the 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 of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory

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

### 10.3 Land Environment Management –

Land degradation is one of the major adverse impacts of opencast mining in the form of excavated voids and contamination of soil affects the viability of the soil resource.

Soil contamination then has a number of flow-on effects like, Inhibition of plant growth, and death of existing plants in contaminated areas and contamination of soil also has potential to impact on a surface water quality and groundwater resources.

**TABLE 10.1: PROPOSED CONTROLS FOR LAND ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Re fueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
Greenbelt development and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora species will be carried out on the top benches.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

### 10.4 Soil Management

#### Top Soil Management –

- There is topsoil for this project site. 75,438 m<sup>3</sup>

#### Overburden / Waste and Side Burden Management –

- The overburden in the form of topsoil formation, the topsoil will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.



**TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Garland drains are to be paved around the quarry pit area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface water via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### **10.5 Water Management**

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is proposed upto a depth of 66m (3m Topsoil +63m Rough stone) the water table in the area is 88m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

**TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

### **10.6 Air Quality Management**

The proposed mining activities would result in the increase of particulate matter concentrations due to fugitive dust. Water sprinkling twice per day on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

**TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### 10.7 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and other allied activities. No mining activities are planned during night time.

**TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
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	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring shall be carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

## 10.8 Ground Vibration and Fly Rock Control

**TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK**

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

## 10.9 Biological Environment Management

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area.
- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- 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.
- Year wise greenbelt development will be recorded and monitored
  - Based on the area of plantation.
  - Period of plantation
  - Type of plantation
  - Spacing between the plants
  - Type of manuring and fertilizers and its periods
  - Lopping period, interval of watering
  - Survival rate
  - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

### 10.9.1 Green Belt Development Plan

About 1500 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

**TABLE 10.7 PROPOSED GREENBELT ACTIVITIES FOR 10 YEAR PLAN PERIOD – P1**

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survial %	Area to be planted	Name of the species
I	It is proposed to plant 1500 Nos of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Un utilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc

Source: Conceptual Plan of Approved Mining plan& proposed by FAE's & EIA Coordinator

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

### 10.9.2 Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

**TABLE 10.8: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT – P1**

S.No	Botanical Name	Local Name	Importance
1.	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2.	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3.	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4.	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

### 10.10 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.

#### 10.10.1 Medical Surveillance and Examinations –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

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. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

**TABLE 10.10.1: MEDICAL EXAMINATION SCHEDULE – P1**

Sl.No	Activities	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	PME as per Mines Rules 1955	Special Examination
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.		

#### 10.10.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

**FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS – P1**

### 10.10.3 Health and Safety Training Programme

The Proponents will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner.

**TABLE 10.10.2: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES – P1**

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health & safety procedures and SOP for various mining activity. Supervised practice in assigned work tasks.
Refresher Training	All employees who received new- hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems

				Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

#### 10.10.4 Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.



**TABLE 10.10.3: EMP BUDGET FOR PROPOSED PROJECT – P1**

	Mitigation Measure	Provision for Implementation	Capital	Recurring
<b>Air Environment</b>	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	30000	30000
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	150000	15000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	10000	500
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	60000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
<b>Noise Environment</b>	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0

	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	2352059
<b>Waste Management</b>	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
<b>Mine Closure</b>	1. Progressive Closure Activity - Surface Runoff managent	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	30000	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	600000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 1800Trees - (500Inside Lease Area & 1300Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	100000	15000

		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	390000	39000
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	85500	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budget and not necessarily implemented in the Project Site	5337364	0
<b>Implementation of EC, Mining Plan &amp; DGMS Condition</b>	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 18 Employees	72000	18000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	18000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	6000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000

	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	150000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 <sup>st</sup> Class / 2 <sup>nd</sup> Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
<b>CER</b>	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
<b>TOTAL</b>			<b>2992000</b>	<b>3535559</b>

In order to implement the environmental protection measures, an amount of Rs.29.92 lakhs as capital cost and recurring cost as Rs. 35.35 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

<b>Year Wise Break Up</b>	
1st Year	6527559
2nd Year	3712337
3rd Year	3897954
4th Year	4092851
5th Year	4382994
6th Year	6098144
7th Year	4907051
8th Year	5152403
9th Year	5410023
10th Year	5766025
<b>Total</b>	<b>499 Lakshs</b>

### 10.11 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 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.

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## CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN – P2

### 10.1 General

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio– economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

### 10.2 Environmental Policy

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent **M/s.Sree Krish Roughstone** will –

- Allocate necessary resources to ensure the implementation of the environmental policy
- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement

### Description of the 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 of each Proposed Quarry.

The said team will be responsible for:

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

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

### 10.3 Land Environment Management –

Land degradation is one of the major adverse impacts of opencast mining in the form of excavated voids and contamination of soil affects the viability of the soil resource.

Soil contamination then has a number of flow-on effects like, Inhibition of plant growth, and death of existing plants in contaminated areas and contamination of soil also has potential to impact on a surface water quality and groundwater resources.

**TABLE 10.1: PROPOSED CONTROLS FOR LAND ENVIRONMENT**

CONTROL	RESPONSIBILITY
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Re fueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
Greenbelt development and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora species will be carried out on the top benches.	Mines Manager
There will be formation of a small surface water body in the mined out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

### 10.4 Soil Management

#### Top Soil Management –

- There is topsoil avail for this project site 68,760m<sup>3</sup> for one year.

#### Overburden / Waste and Side Burden Management –

- The overburden in the form of topsoil formation, the topsoil will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

**TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Garland drains are to be paved around the quarry pit area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface water via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### 10.5 Water Management

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is restricted upto a depth 66m (3m Topsoil +63m Rough stone) the water table in the area is 88m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

**TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

### 10.6 Air Quality Management

The proposed mining activities would result in the increase of particulate matter concentrations due to fugitive dust. Water sprinkling twice per day on the haul roads, approach roads in the vicinity would be undertaken



and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

**TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### 10.7 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and other allied activities. No mining activities are planned during night time.

**TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
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	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring shall be carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

## 10.8 Ground Vibration and Fly Rock Control

**TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK**

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

## 10.9 Biological Environment Management

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area
- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- 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.
- Year wise greenbelt development will be recorded and monitored
  - Based on the area of plantation.
  - Period of plantation
  - Type of plantation
- Spacing between the plants
- Type of manuring and fertilizers and its periods
- Lopping period, interval of watering
- Survival rate
- Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

### 10.9.1 Green Belt Development Plan

About 1500 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

**TABLE 10.7 PROPOSED GREENBELT ACTIVITIES FOR 5 YEAR PLAN PERIOD – P2**

PROPOSAL FOR P2			
It is proposed to plant <b>1500Nos</b> of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Un utilized area's and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc.,

Source: Conceptual Plan of Approved Mining plan & proposed by FAE's & EIA Coordinator

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

### 10.9.2 Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

**TABLE 10.8: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT – P2**

S.No	Botanical Name	Local Name	Importance
1	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

## 10.10 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.

### 10.10.1 Medical Surveillance and Examinations –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

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. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

**TABLE 10.9: MEDICAL EXAMINATION SCHEDULE – P2**

Sl.No	Activities	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	PME as per Mines Rules 1955	Special Examination
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies

Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.

#### 10.10.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.
- At noisy working activity, exposure time will be minimized.

- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

**FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS – P2**



### 10.10.3 Health and Safety Training Programme

The Proponents will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner.

**TABLE 10.10: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES – P2**

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls

				Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul Road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health & safety procedures and SOP for various mining activity. Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

#### 10.10.4 Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

**TABLE 10.11: EMP BUDGET FOR PROPOSED PROJECT – P2**

	Mitigation Measure	Provision for Implementation	Capital	Recurring
<b>Air Environment</b>	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	30000	30000
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	150000	15000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	10000	500
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	60000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
<b>Noise Environment</b>	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0

	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	2352059
<b>Waste Management</b>	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
<b>Mine Closure</b>	1. Progressive Closure Activity - Surface Runoff managment	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	30000	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	600000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 1800Trees - (500Inside Lease Area & 1300Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	100000	15000



		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	390000	39000
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	85500	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	5337364	0
<b>Implementation of EC, Mining Plan &amp; DGMS Condition</b>	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 18 Employees	72000	18000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	18000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	6000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000

	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	150000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 <sup>st</sup> Class / 2 <sup>nd</sup> Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
<b>CER</b>	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
<b>TOTAL</b>			<b>2992000</b>	<b>3535559</b>

In order to implement the environmental protection measures, an amount of Rs.29.92 lakhs as capital cost and recurring cost as Rs. 35.35 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

<b>Year Wise Break Up</b>	
1st Year	6527559
2nd Year	3712337
3rd Year	3897954
4th Year	4092851
5th Year	4382994
6th Year	6098144
7th Year	4907051
8th Year	5152403
9th Year	5410023
10th Year	5766025
<b>Total</b>	<b>499 Lakhs</b>

### 10.11 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.

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## CHAPTER – 11: SUMMARY AND CONCLUSIONS

Gopanapalli Rough Stone cluster Quarries (Extent 17.50.0 ha) falls under “B” category as per MoEF & CC Notification (S.O. 3977 (E)).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

A detailed Draft EIA/ EMP Report is prepared for public and other stakeholders' suggestions and a Final EIA/ EMP Report will be prepared based on the outcome of Public Consultation.

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months March 2023 to May 2023 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed.

Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone quarry & Gravel as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 36 people directly in the cluster and indirectly around 100 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Gopanapalli Rough Stone Cluster quarries (Extent: 17.50.0 ha).



## CHAPTER 12: DISCLOSURE OF CONSULTANTS

The Project Proponent's –

**1. M/s. Natural stone Industry**

**2. M/s.Sree Krish Roughstone**

have engaged M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued.

Name and address of the consultancy:

**GEO EXPLORATION AND MINING SOLUTIONS**

No 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004

Tamil Nadu, India

Email: infogeoexploration@gmail.com

Web: **www.gemssalem.com**

Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below –

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	<b>Dr. M. Ifthikhar Ahmed</b>	<b>In-house</b>	<b>1</b>	<b>A</b>	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

Abbreviations	
EC	EIA Coordinator
AEC	Associate EIA Coordinator
FAE	Functional Area Expert
FAA	Functional Area Associates
TM	Team Member
GEO	Geology
WP	Water pollution monitoring, prevention and control
AP	Air pollution monitoring, prevention and control
LU	Land Use
AQ	Meteorology, air quality modeling, and prediction
EB	Ecology and bio-diversity
NV	Noise and vibration
SE	Socio economics
HG	Hydrology, ground water and water conservation
SC	Soil conservation
RH	Risk assessment and hazard management
SHW	Solid and hazardous wastes
MSW	Municipal Solid Wastes
ISW	Industrial Solid Wastes
HW	Hazardous Wastes

### DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Rough Stone quarry Cluster Quarries over an Extent of 17.50.0ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the EIA/EMP Report.

Name: **Dr. M. Ifthikhar Ahmed**

Designation: **EIA Coordinator**

Date & Signature:




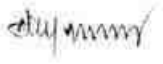

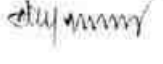




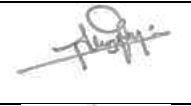

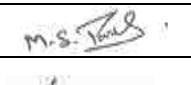

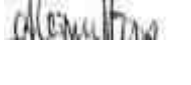




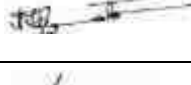
Period of Involvement: **January 2022 to till date**

Associated Team Member with EIA Coordinator:



1. **Mr. S. Nagamani**
2. **Mr. Viswanathan**
3. **Mr. Santhoshkumar**
4. **Mr. S. Ilavarasan**

#### FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT




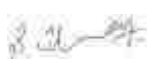
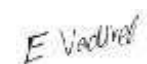


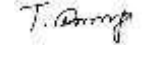
Sl. No.	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	<ul style="list-style-type: none"> <li>▪ Identification of different sources of air pollution due to the proposed mine activity</li> <li>▪ Prediction of air pollution and propose mitigation measures / control measures</li> </ul>	Mr. A. Jagannathan	
2	WP	<ul style="list-style-type: none"> <li>▪ Suggesting water treatment systems, drainage facilities</li> <li>▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.</li> </ul>	Dr. M. Ifthikhar Ahmed	
			Mr. N. Senthilkumar	
3	HG	<ul style="list-style-type: none"> <li>▪ Interpretation of ground water table and predict impact and propose mitigation measures.</li> <li>▪ Analysis and description of aquifer Characteristics</li> </ul>	Dr. P. Thangaraju	
4	GEO	<ul style="list-style-type: none"> <li>▪ Field Survey for assessing the regional and local geology of the area.</li> <li>▪ Preparation of mineral and geological maps.</li> <li>▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.</li> </ul>	Dr. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	<ul style="list-style-type: none"> <li>▪ Revision in secondary data as per Census of India, 2011.</li> <li>▪ Impact Assessment &amp; Preventive Management Plan</li> <li>▪ Corporate Environment Responsibility.</li> </ul>	Mrs. K. Anitha	

6	EB	<ul style="list-style-type: none"> <li>▪ Collection of Baseline data of Flora and Fauna.</li> <li>▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list.</li> <li>▪ Impact of the project on flora and fauna.</li> <li>▪ Suggesting species for greenbelt development.</li> </ul>	Mrs. Amirtham	
			Mr. Alagappa Moses	
7	RH	<ul style="list-style-type: none"> <li>▪ Identification of hazards and hazardous substances</li> <li>▪ Risks and consequences analysis</li> <li>▪ Vulnerability assessment</li> <li>▪ Preparation of Emergency Preparedness Plan</li> <li>▪ Management plan for safety.</li> </ul>	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			Mr. J. R. Vikram Krishna	
8	LU	<ul style="list-style-type: none"> <li>▪ Construction of Land use Map</li> <li>▪ Impact of project on surrounding land use</li> <li>▪ Suggesting post closure sustainable land use and mitigative measures.</li> </ul>	Mr. A. Allimuthu	
9	NV	<ul style="list-style-type: none"> <li>▪ Identify impacts due to noise and vibrations</li> <li>▪ Suggesting appropriate mitigation measures for EMP.</li> </ul>	Mr. A. Jagannathan	
10	AQ	<ul style="list-style-type: none"> <li>▪ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD.</li> <li>▪ Recommending mitigations measures for EMP</li> </ul>	Mr. N. Senthilkumar	
11	SC	<ul style="list-style-type: none"> <li>▪ Assessing the impact on soil environment and proposed mitigation measures for soil conservation</li> </ul>	Dr. M. Ifthikhar Ahmed	
12	SHW	<ul style="list-style-type: none"> <li>▪ Identify source of generation of non-hazardous solid waste and hazardous waste.</li> <li>▪ Suggesting measures for minimization of generation of waste and how it can be reused or recycled.</li> </ul>	Mr. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

**LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT**

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Provide inputs &amp; Assisting FAE with sources of Air Pollution, its impact and suggest control measures</li> <li>▪ Provide inputs on Geological Aspects</li> <li>▪ Analyse &amp; provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures</li> </ul>	
2	Mr. Viswanathan	AP; WP; LU	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Provide inputs &amp; Assisting FAE with sources of Air Pollution, its impact and suggest control measures</li> <li>▪ Assisting FAE on sources of water pollution, its impacts and suggest control measures</li> <li>▪ Assisting FAE in preparation of land use maps</li> </ul>	



3	Mr. Santhoshkumar	GEO; SC	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Provide inputs on Geological Aspects</li> <li>▪ Assist in Resources &amp; Reserve Calculation and preparation of Production Plan &amp; Conceptual Plan</li> <li>▪ Provide inputs &amp; Assisting FAE with soil conservation methods and identifying impacts</li> </ul>	
4	Mr. Umamahesvaran	GEO	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Provide inputs on Geological Aspects</li> <li>▪ Assist in Resources &amp; Reserve Calculation and preparation of Production Plan &amp; Conceptual Plan</li> </ul>	
5	Mr. A. Allimuthu	SE	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of data's</li> <li>▪ Provide inputs by analysing primary and secondary data</li> </ul>	
6	Mr. S. Ilavarasan	LU; SC	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assisting FAE in preparation of land use maps</li> <li>▪ Provide inputs &amp; Assisting FAE with soil conservation methods and identifying impacts</li> </ul>	
7	Mr. E. Vadivel	HG	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE &amp; provide inputs on aquifer characteristics, ground water level/table</li> <li>▪ Assist with methods of ground water recharge and conduct pump test, flow rate</li> </ul>	
8	Mr. D. Dinesh	NV	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures</li> <li>▪ Assist FAE with prediction modelling</li> </ul>	
9	Mr. Panneer Selvam	EB	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of baseline data</li> <li>▪ Provide inputs and assist with labelling of Flora and Fauna</li> </ul>	
10	Mrs. Nathiya	EB	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of baseline data</li> <li>▪ Provide inputs and assist with labelling of Flora and Fauna</li> </ul>	

**DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION**

I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the above-mentioned Functional Area Experts and Team Members prepared the EIA/EMP for Rough Stone quarry Cluster Quarries over an Extent of 17.50.0 ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date:



Name:

**Dr. M. Ifthikhar Ahmed**

Designation:

**Managing Partner**

Name of the EIA Consultant Organization:

**M/s. Geo Exploration and Mining Solutions**

NABET Certificate No & Issue Date:

**NABET/EIA/2225/RA 0276 Dated: 20-02-2023**

Validity:

**Valid till 06.8.2025**

**ANNEXURE**  
**GOPANAPALLI ROUGH STONE**  
**QUARRIES**

Gopanapalli Village,  
Hosur Taluk,  
Krishnagiri District,  
Tamil Nadu State

**CLUSTER EXTENT = 17.50.0 Ha**

**Project Proponents**

Code	Name of the Proponent	S.F. Nos, Village & Taluk	Extent in (ha)	ToR Letter No
P1	M/s. Natural stone Industry	220/1 (P-1) of Gopanapalli Village, Hosur Taluk	3.00.0	Obtained ToR vide, Lr No.SEIAA-TN/F.No.9943/SEAC/ToR-1494/2023 Dated:22.06.2023.
P2	M/s. Sree Krish Roughstone	220/1 (P-3) of Gopanapalli Village, Hosur Taluk	3.00.0	Obtained ToR vide, Lr No. SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023.

## LIST OF ANNEXURES

CODE	DESCRIPTION	PAGE NO
<b>PROPOSED QUARRIES</b>		
P1	COPY OF TERMS OF REFERENCE	1A – 23A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	24A –26A
	COPY OF MINE PLAN APPROVED LETTER	27A – 30A
	COPY OF APPROVED MINING PLAN WITH PLATES	31A – 112A
	ADDITIONAL DOCUMENT	113A – 116A
P2	COPY OF TERMS OF REFERENCE	117A – 139A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	140A – 142A
	COPY OF MINE PLAN APPROVED LETTER	143A – 146A
	COPY OF APPROVED MINING PLAN WITH PLATES	147A – 227A
	ADDITIONAL DOCUMENT	228A – 229A
<b>EXISTING QUARRY</b>		
E1	COPY OF PREFEASIBILITY REPORT	230A - 244A
	COPY OF BASE LINE MONITORING DATA	245A – 274A
	COPY OF NABET CERTIFICATE	275A



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.9943/SEAC/ToR- 1494/2023 Dated:22.06.2023.**

To

M/s Natural Stone Industry  
D.No: 1/518, Senthil Nagar,  
Vth Cross, Pudhupettai,  
Agasipalli  
Krishnagiri District-635002

Sir / Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Proposed Rough stone Quarry over an extent of 3.00.0Ha in SF.No. 220/1 (Part-1) at Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Natural Stone Industry - 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/418191/2023, dated:15.02.2023.  
2. Your application submitted for Terms of Reference dated:29.03.2023.  
4. Minutes of the 382<sup>nd</sup> SEAC meeting held on 09.06.2023.  
5.Minutes of the 632<sup>nd</sup> SEIAA meeting held on 21.06.2023 & 22.06.2023.

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Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

The proponent, M/s. Natural Stone Industry has submitted application for Terms of Reference (ToR) in Form-I, Pre- Feasibility report for Proposed Rough stone Quarry over an extent of 3.00.0Ha in SF.No. 220/1 (Part-1) at Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.

  
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**Discussion by SEAC and the Remarks:-**

Proposed Rough stone Quarry over an extent of 3.00.0Ha in SF.No. 220/1 (Part-1) at Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Natural Stone Industry - For Terms of Reference.

(SIA/TN/MIN/418191/2023, Dt. 15.02.2023)

The proposal was placed in the 382<sup>nd</sup> SEAC Meeting held on 09.06.2023. 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, M/s.Natural Stone Industry has applied for Terms of Reference for the Proposed Rough stone Quarry over an extent of 3.00.0Ha in SF.No. 220/1 (Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri 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 10 years. The mining plan is for the period of ten years & the production should not exceed 9,04,638m<sup>3</sup> of rough stone & 75,438m<sup>3</sup> of Topsoil (Gravel) with an ultimate depth of mining is 66m (12m AGL + 54m BGL) (3m Topsoil + 63m Rough Stone). The annual peak production is 1,60,440m<sup>3</sup> of rough stone (2<sup>nd</sup> Year) & 75,438m<sup>3</sup> of Topsoil (Gravel) (1<sup>st</sup> Year).

Based on the presentation made by the proponent, **SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing**, 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 proponent is requested to carry out a survey and enumerate on the structures located within 50m, 100m, 150m, 200m, 250m, 300m and 500m from the boundary of the mine lease area.
2. The PP shall restrict the depth of mining up to 50m, and shall discuss the production quantity to be mined out in the EIA report.
3. The PP shall furnish the details of the manufacturing unit shed located at a distance of 320m.
4. The proponent shall discuss the funds for mitigation measures to be included in the EMP.

  
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5. The proponent shall adhere to the bench height - 5m as stated in the approved mining plan.
6. The proponent shall obtain Anna University Star rating system.
7. The PP shall frame Environmental policy and shall appoint Environmental Manger etc.,
8. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Necessary data and documentation in this regard may be provided.
9. The proponent shall submit the details regarding the nature of blasting activity which will be carried out.
10. The PP shall furnish DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., upto a radius of 25 km from the proposed site.
11. The PP shall provide individual notice regarding the Public Hearing to the nearby house owners located in the vicinity of the project site.
12. In the case of proposed lease in an existing (or old) quarry where the benches are non-existent (or) partially formed critical of the bench geometry approved in the Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the 'highwall' benches to ensure slope stability in the proposed quarry lease which shall be vetted by the concerned Asst. Director of Geology and Mining, during the time of appraisal for obtaining the EC.
6. 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.
7. **Since the quarry lies in a cluster situation, the PP shall furnish a Standard Operating Procedure for carrying out the safe blasting operation while considering the adjacent quarries lies in a radial distance of 500 m from their quarry.**
9. Details of Green belt & fencing shall be included in the EIA Report.

10. 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.
11. 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,
  - a. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
  - b. Quantity of minerals mined out.
  - c. Highest production achieved in any one year
  - d. Detail of approved depth of mining.
  - e. Actual depth of the mining achieved earlier.
  - f. Name of the person already mined in that leases area.
  - g. If EC and CTO already obtained, the copy of the same shall be submitted.
  - h. Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
12. 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).
13. The PP shall carry out Drone video survey covering the cluster, Green belt , fencing etc.,
14. 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.
15. 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.
16. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act 1952 and the MMR, 1961 for carrying out the quarrying operations

  
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- scientifically and systematically in order to ensure safety and to protect the environment.
17. 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.
  18. 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.
  19. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
  20. 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.
  21. 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.
  22. 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.
  23. 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.
  24. Impact on local transport infrastructure due to the Project should be indicated.
  25. 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.

  
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26. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
27. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
28. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
29. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
30. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
31. 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-1 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.
32. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the 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
33. 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.
34. 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.

  
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35. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
36. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
37. 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.
38. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
39. 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.
40. 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.
41. 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.
42. 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	வில்வம்
2	<i>Adenanthera pavonina</i>	Manjadi	மஞ்சளம் ஆனைக்குன்றிமணி
3	<i>Albizia lebbek</i>	Vaagai	வாளை
4	<i>Albizia amara</i>	Usil	உசில்
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathi	ஆத்தி
7	<i>Bauhinia tomentosa</i>	Iruvathu	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuna	காட்டுமர
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax ceiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum inophyllum</i>	Purnai	புனை
13	<i>Cassia fistula</i>	Sarakondrai	சரக்கொன்றை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொன்றை
15	<i>Chloroxylon sweetenia</i>	Purasamaram	புரசு மரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Manjallavu	கோங்கு, மஞ்சள் இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நருவுளி
18	<i>Creteva adansonii</i>	Mavaingum	மாவிளங்கம்
19	<i>Dillema indica</i>	Uva, Uzha	உசா
20	<i>Dillema pentagyna</i>	SiruUva, Sitruzha	சிறு உசா
21	<i>Diospyro sebenium</i>	Karungali	கருங்காலை
22	<i>Diospyro schloroxylon</i>	Vaganai	வாகளை
23	<i>Ficus amplissima</i>	Kallitchi	கல் இச்சி
24	<i>Hibiscus tiliaceou</i>	Aatrupoovarasu	ஆற்றுப்புலக
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயா மரம், ஆயிலி
27	<i>Lansea coromandelica</i>	Odhuam	ஓதியம்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetraphylla</i>	Neikottaimaram	நெய் கோட்டை மரம்
30	<i>Limoua acidissima</i>	Vila maram	வில்லா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	பிளிம்பட்டை
32	<i>Madhuca longifolia</i>	Illuppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Minusops elengi</i>	Magizhamaram	மகிழ்மரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	ஏச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்

  
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40	<i>Premna mollissima</i>	Murunai	முல்லை
41	<i>Premna serratifolia</i>	Narumunurai	நறு முல்லை
42	<i>Premna tomentosa</i>	Malaipoovarasu	மலை பூவரசு
43	<i>Prosopis cinerosa</i>	Vanru maram	வள்ளி மரம்
44	<i>Pterocarpus marsipium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேண்ணாங்கு
46	<i>Pterospermum xylocarpum</i>	Poiavu	பூவு
47	<i>Putranjiva roxburghii</i>	Karpala	கற்பலா
48	<i>Salvadora persica</i>	Ugaa Maram	ஊகா மரம்
49	<i>Sapindus emarginatus</i>	Marupungan, Soapukai	மணிப்புங்கு சோபுகாய்
50	<i>Saraca asoca</i>	Asoca	அசோகா
51	<i>Strobilus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	எட்டி
53	<i>Strychnos potatorum</i>	Theerthang Kottai	தேத்தாள் கொட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia belleric</i>	Thandri	தாண்டி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Thespesia populnea</i>	Puvarasu	பூவரசு
59	<i>Walsuratrifoliata</i>	valsura	வாலசுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பாலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கொடுக்காபுளி

#### Discussion by SEIAA and the Remarks:-

The proposal was placed in the 632<sup>nd</sup> Authority meeting held on 21.06.2023 & 22.06.2023. The authority noted that this proposal was placed for appraisal in 382<sup>nd</sup> meeting of SEAC held on 09.06.2023, 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.

  
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2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk 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.

  
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- e) Agriculture, Forestry & Traditional practices.
- f) Hydrothermal/Geothermal effect due to destruction in the Environment.
- g) Bio-geochemical processes and its foot prints including environmental stress.
- h) Sediment geochemistry in the surface streams.

#### **Agriculture & Agro-Biodiversity**

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

  
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**Mine Closure Plan**

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

**EMP**

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.

36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

**Risk Assessment**

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

**Disaster Management Plan**

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

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

  
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- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out

  
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whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be



undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may

  
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- be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
  - 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
  - 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
  - 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
  - 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
  - 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
  - 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
  - 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
  - 44) Besides the above, the below mentioned general points are also to be followed:-
    - a) Executive Summary of the EIA/EMP Report
    - b) All documents to be properly referenced with index and continuous page numbering.
    - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
    - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
    - e) Where the documents provided are in a language other than English, an English translation should be provided.

- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.

  
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7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan

  
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26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2<sup>nd</sup> December, 2009, 18<sup>th</sup> March 2010,

  
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28<sup>th</sup> May 2010, 28<sup>th</sup> June 2010, 31<sup>st</sup> December 2010 & 30<sup>th</sup> 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 29<sup>th</sup> 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, 1<sup>st</sup> & 2<sup>nd</sup> 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, Krishnagiri District.
7. Stock File.

**From**  
Dr. S.Vediappan, M.Sc.,Ph.d.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**  
M/s. Natural Stone Industry,  
D.No. 1/518, Senthil Nagar,  
Vth Cross, Pudhupettai,  
Agasipalli, Krishnagiri - 635 002.

**Roc.No.535/2022/Mines Dated:18.07.2022**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli Village- Govt Poramboke land in S.F.No. 220/1(Part-1) Over an extent of 3.00.0 Hects - Tender Cum Auction conducted - M/s. Natural Stone Industry declared as highest bidder - Mining Plan approved - Other quarry situated in 500 mtrs radial distance - Details furnished - reg.

**Ref:**

1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.
2. This Office Letter No.535/2022/Mines dated: 22.04.2022.
3. Draft Mining plan submitted by M/s. Natural Stone Industry, dated:11.07.2022
4. This Office Letter No.535/2022/Mines dated: 18.07.2022

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 220/1(Part-1) over an extent of 3.00.0 Hects of Gopanapalli Village, Hosur Taluk.

3. M/s. Natural Stone Industry has quoted highest lease amount and hence he has been declared as highest bidder for the grant of quarry lease for quarrying Rough stone over an extent of 3.00.0 Hects of government lands in S.F.No. 220/1(Part-1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 year under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, precise area communication has been issued to the applicant vide letter dated: 22.04.2022 with a

direction to submit approved mining plan and Environment Clearance.

4. Accordingly, M/s. Natural Stone Industry had submitted 03 copies of draft Mining Plan vide letter dated:11.07.2022 and the same has been approved vide this office letter dated:18.07.2022. In addition to that the details of other quarries situated within 500 mts radial distance from the subject quarry is furnished as follows.

**I. Details of Existing quarries.**

Sl No	Name of the lessee	Village & Taluk	Mineral	S.F No.	Extent in Het	GO No.& Date	Lease period.
1	P.Venkata reddy,S/o. Pedha Obul Reddy, 3/213, Periya Kodipalli Village, Kempat, Muttur,Denkanikottai, Krishnagiri.	Hosapuram Village, Denkanikottai Taluk	Rough Stone	457 (Part-2)	3.70.0	Rc.No. 112/2016/Mines Dated: 26.02.2020	26.02.2020 to 25.02.2030

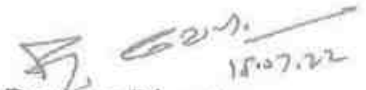
**II. Details of abandoned/Old quarries.**

Sl. No.	Name of the lessee	Village	S.F No.	Extent in Het	GO No.& Date	Lease period.
----- Nil -----						


**III. Details of Proposed quarries**

Sl No	Name of the lessee	Village & Taluk	Mineral	S.F No.	Extent in Het	GO No.& Date	Lease period.
1.	M/s. Natural Stone Industry	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -1)	3.00.0	Rc.No. 535/2022/Mines Dated: 21.04.2022	Instant Proposal
2.	Thiru.Vijaya Kumar	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -4)	2.00.0	Rc.No. 538/2022/Mines Dated: 26.04.2022	Precise area given
3.	Thiru.S.Raghu	Gopanapalli Village, Hosur Taluk	Rough Stone	381 (Part-1)	1.30.0	Rc.No. 539/2022/Mines dated: 04.05.2022	Precise area given

4.	Thiru.Nithin Reddy	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -2)	3.00.0	Rc.No. 536/2022/ Mines Dated: 05.05.2022	Precise area given
5.	M/s. Srre Krish Rough Stone	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 ( part -3)	3.00.0	Rc.No. 537/2022/ Mines Dated: 21.04.2022	Precise area given
6.	Thiru. Dhivakar	Gopanapalli Village, Hosur Taluk	Rough Stone	381/1 (part -2)	1.50.0	Rc.No. 540/2022/ Mines Dated: 22.04.2022	Precise area given

  
 Deputy Director,  
 Dept of Geology and Mining,  
 Krishnagiri.

**Copy to :-**

  
 The Chairman,  
 Tamil Nadu State Environment  
 Impact Assessment Authority,  
 3<sup>rd</sup> Floor, Panakal Maligai,  
 No. 1 Jeenes Road, Saidapet, Chennai -15.

  
 18/7/22

**From**

Dr.S.Vediappan,M.Sc.,Ph.D.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**

M/s. Natural Stone Industry,  
D.No. 1/518, Senthil Nagar,  
Vth Cross, Pudhupettai,  
Agasipalli, Krishnagiri - 635 002.

**Rc.No.535/2022/Mines Dated:18.07.2022.**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli Village- Govt Poramboke land in S.F.No. 220/1(Part-1) Over an extent of 3.00.0 Hects - Tender Cum Auction conducted - M/s. Natural Stone Industry declared as highest bidder - Precise area communicated - Draft Mining Plan submitted for approval - Approved - reg.

**Ref:** 1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.  
2. This Office Letter No.535/2022/Mines dated: 22.04.2022.  
3. Draft Mining plan submitted by M/s. Natural Stone Industry, dated:11.07.2022.

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 220/1(Part-1) Over an extent of 3.00.0 Hects of Gopanapalli Village, Hosur Taluk, M/s. Natural Stone Industry has quoted highest lease amount and hence he has been declared as successful bidder.

3. Accordingly, M/s. Natural Stone Industry has been directed to submit the mining plan for approval and to obtain Environmental Clearance for quarrying Rough stone over an extent of 3.00.0 Hects of Government Poramboke land in S.F.No. 220/1(Part-1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 (Ten) years



under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

4. In this regard, the bidder M/s. Natural Stone Industry had submitted 03 copies of draft Mining Plan vide letter dated:11.07.2022 and the same has been examined in detail and it is found correct.

5. As per the mining plan the year wise production for the proposed first and second five years are as follows.

<b>First Five Years</b>	<b>Year</b>	<b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b>	<b>Top Soil (Gravel)in (m<sup>3</sup>)</b>
	1 <sup>st</sup> Year	132678	75438
	2 <sup>nd</sup> year	160440	0
	3 <sup>rd</sup> year	139370	0
	4 <sup>th</sup> year	119700	0
	5 <sup>th</sup> year	50400	0
	<b>Total</b>	<b>602588</b>	<b>75438</b>

<b>Second Five Years</b>	<b>Year</b>	<b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b>	<b>Top Soil (Gravel)in (m<sup>3</sup>)</b>
	1 <sup>st</sup> Year	51030	0
	2 <sup>nd</sup> year	84560	0
	3 <sup>rd</sup> year	69090	0
	4 <sup>th</sup> year	55020	0
	5 <sup>th</sup> year	42350	0
	<b>Total</b>	<b>302050</b>	<b>0</b>

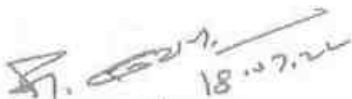
6. Hence, as per the powers delegated under Rule 42 of TNMMCR, 1959 and also as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated:19.11.2012, the said mining plan submitted by the M/s. Natural Stone Industry is here by approved subject 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 Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.
- iii. That the mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.
- iv. All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.
- v. The applicant should get prior Environmental clearance from the appropriate authority and should submit it to the District Collector, Krishnagiri.
- vi. Provisions of the Mines Act 1952 and the rules and regulation made there under including submission of notice of opening, appointment of manager and other statutory officials has required under Mines Act 1952 shall be complied with.
- vii. Provisions made under the Mines and Minerals (Development and Regulation) Acts 1957, amended Act 2015 made there under shall be complied with.
- viii. This approval of Mining Plan is restricted to the mining lease area only as shown in the plan.
- ix. The earlier instances of irregular / illegal quarrying, if any shall not be regularized through the approval of this document.
- x. The applicant shall remit penalty /cost of the mineral /other dues if any.

- xi. Every Mining Plan duly approved under rule 41(9) of TNMMCR, 1959 shall be valid for a period of five years. Further, the applicant shall submit modification in the mining plan if any, review the mining plan and submit scheme of mining plan for the next five years of the lease if any as per TNMMCR 1959.
- ii. Non adherence to any condition set out above, the approval shall be deemed to have been withdrawn with immediate effect.

  
18.07.22  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

  
18/7/22  
  
BGM  
**Submitted to** : 1. The Commissioner,  
Dept of Geology and Mining,  
Guindy, Chennai -32.

# MINING PLAN

FOR

GRANT OF ROUGH STONE QUARRY LEASE

GOVERNMENT PORAMBOKE LAND

**TOTAL LEASE GRANTED PERIOD 10 YEARS**

**PERIOD OF MINING 10 YEARS**

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As Per Amendment Under Rule 41 & 42)

## LOCATION OF THE APPLIED AREA

EXTENT : 3.00.0 HA.

S. F. No. : 220/1(PART-1).

VILLAGE : GOPANAPALLI.

TALUK : HOSUR.

DISTRICT : KRISHNAGIRI.

STATE : TAMIL NADU.

## APPLICANT

**M/s. NATURAL STONE INDUSTRY,**

D.No.1/518, SENTHIL NAGAR, V<sup>th</sup> CROSS,

PUDHUPETTAI,

AGASIPALLI,

KRISHNAGIRI DISTRICT - 635 002.

## PREPARED BY

**S.MATHAN PRAKASH,M.Sc.,M.PHIL.,**

RQP/CNN/270/2016/A,

No.2/274, EAST STREET,

KULASEKARANALLUR POST,

OTTAPIDARAM TALUK,

THOOTHUKUDI DISTRICT - 628 401.

Email: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)

CELL : 8668020217.





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## ANNEXURES

Sl. No.	Description	Annexure No.
1.	Precise Area Communication letter	I
2.	Copy of Krishnagiri District Gazette	II
3.	Copy of DFO letter	III
4.	Copy of FMB & Combined Sketch	IV-A & B
5.	Copy of Adangal & 'A' Register	V
6.	Copy of Firm Registration	VI
7.	Copy of Partnership Deed	VII
8.	Copy of Managing Partner ID Proof	VIII
9.	Copy of RQP Certificate	IX
10.	Copy of Applied Lease Area Photos	X



## LIST OF PLATES

Sl. No.	Description	Plate No.	Scale
1.	Location Plan	I	Not to Scale
2.	Route Map	IA	Not to Scale
3.	Topo Sheet Map	IB	1:50,000
4.	Satellite Image (500m Radius)	IC	1:5000
5.	Mine Lease Plan	II	1:1000
6.	Surface & Geological Plan	III	1:1000
7.	Geological Sections	III-A	1:1000
8.	Year Wise Development and Production Plan	IV-A, A1	1:1000
9.	Year Wise Development and Production Sections	IV- B, B1	1:1000
10.	Mine Layout, Land Use Pattern and Afforestation Plan	V	1:1000
11.	Environment Plan	VI	1:5000
12.	Conceptual/Final Mine Closure Plan	VII	1:1000
13.	Conceptual/Final Mine Closure Sections	VII- A	1:1000
14.	Conceptual Plan Common Boundary	VIII	1:1000
15.	Conceptual Sections Common Boundary	VIII- A	1:1000
16.	Progressive Mine Closure Plan	IX	1:1000

M/s. Natural Stone Industry,  
D.No.1/518, Senthil Nagar, V<sup>th</sup> Cross,  
Pudhupettai,  
Agasipalli,  
Krishnagiri District - 635 002.



**CONSENT LETTER FROM THE APPLICANT**

I hereby give my consent for preparing the Mining Plan in respect of **Rough Stone** quarry over an extent of **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-1)** of **Gopanapalli** Village, **Hosur** Taluk, **Krishnagiri** District, Tamil Nadu State has been prepared by **Shri. S. Mathan Prakash, M.Sc., M.Phil.,** Recognized Qualified Person.

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

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**

RQP/CNN/270/2016/A

No.2/274, East Street,

Kulasekaranallur Post,

Ottapidaram Taluk,

Thoothukudi District - 628 401.

E-Mail: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)

Cell: 86680-20217

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

For **M/s. Natural Stone Industry,**

**(B.Basappan)**

**Managing Partner**

Signature of the Applicant

Place: KRISHNAGIRI

Date:

M/s. Natural Stone Industry,  
D.No.1/518, Senthil Nagar, V<sup>th</sup> Cross,  
Pudhupettai,  
Agasipalli,  
Krishnagiri District - 635 002.



**DECLARATION**

I hereby declare that the Mining Plan in respect of **Rough Stone** quarry over an extent of **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-1)** of **Gopanapalli** Village, **Hosur** Taluk, **Krishnagiri** District, and 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.

For **M/s. Natural Stone Industry,**



**(B.Basappa)**

**Managing Partner**

**Signature of the Applicant**

Place: KRISHNAGIRI

Date:



S.MATHAN PRAKASH, M.Sc.,M.Phil.,  
RQP/CNN/270/2016/A



**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 **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District** District, Tamil Nadu State obtained by **M/s. NATURAL STONE INDUSTRY** for applied 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 Recognized Qualified Person.

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**

Place: Thoothukudi

Date:

S.MATHAN PRAKASH, M.Sc.,M.Phil.,  
RQP/CNN/270/2016/A

No 274, East Street, 2022  
Kulasekaranallur Post,  
Ottapalam Taluk,  
Thoothukudi - 628 101.  
Cell: 86680-20217

**CERTIFICATE**

This is to certify that during preparation of Mining Plan for **Rough Stone** quarry over an extent **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District,** Tamil Nadu State for **M/s. NATURAL STONE INDUSTRY** 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 Recognized Qualified Person.

**S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A**

Place: Thoothukudi

Date:

**MINING PLAN FOR MINOR MINERALS**  
**ROUGH STONE QUARRY**  
**TOTAL LEASE GRANTED PERIOD 10 YEARS**  
**PROPOSED PERIOD OF MINING 10 YEARS**



Over an extent of 3.00.0 Hectares of Government Poramboke Land in  
S.F.No.220/1(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District,  
Tamilnadu State.

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 &  
As Per Amendment Under Rule 41 & 42)

**1.0 INTRODUCTION AND EXECUTIVE SUMMARY:**

1. M/s. NATURAL STONE INDUSTRY, registered office at D.No.1/518, Senthil Nagar, V<sup>th</sup>Cross, Pudhupettai, Agasipalli, Krishnagiri- 635 002 has applied for the grant of quarry lease to quarry **Rough Stone** over an extent of **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri** District of Tamil Nadu State for a period of Ten Years under Tender cum Auction.
2. The Applicant has been the Successful **HIGHEST BIDDER** for an **Amount Rs.4,10,00,000/-** in a tender cum Auction conducted by the Government of Tamilnadu Notified vide Gazette No.15 dated 14.03.2022 and Precise area had been given for the proposed grant of Rough Stone quarry lease to **M/s. Natural Stone Industry** over an extent of 3.00.0 hectares in Government Poramboke land in S.F.No.220/1(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District of Tamil Nadu State for a period of **Ten Years** Vide Letter **Re. No.535/2022/Mines dated 22.04.2022** and directed to submit the approved Mining Plan and Environmental Clearance certificate from the State Environment Impact Assessment Authority (SEIAA) for the grant of quarry lease for the applied area.
3. Accordingly, Mining Plan is prepared under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain Environmental clearance from State Environment Impact Assessment Authority.

  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/1**



4. In the above circumstances, the mining plan has been prepared for the Applicant **M/s. NATURAL STONE INDUSTRY** for approval and subsequent submission of Form-I and pre Feasibility report to obtain environmental clearance from the SEIAA of Tamil Nadu.
5. This Mining Plan is prepared for the applied Rough Stone Quarry for the period of Ten years by considering the TNMMCR 1959 and as per the EIA Notification 2006 and subsequent amendments and judgements.
6. The Geological Reserves is estimated as **1880592M<sup>3</sup>** and Mineable & recoverable Reserves is estimated as **904638M<sup>3</sup>** of **Rough Stone** after leaving necessary safety distance from the lease boundary as indicated in the precise area communication letter and relevant mining laws in force.
7. The proposed production scheduled for the Ten years is estimated as **904638M<sup>3</sup>** (for the First five (1-5)years- **602588M<sup>3</sup>** & for the Next five (6-10)years- **302050M<sup>3</sup>** ) of **Rough Stone**.

Proposed average annual production of Rough stone **90464M<sup>3</sup>**.

8. Estimated Life of the Quarry

Total Mineable ROM	= 904638 M <sup>3</sup> ✓
Recoverable Reserves @ 100%	= 904638 M <sup>3</sup> ✓
Average production per year	= 90464 M <sup>3</sup>
Estimated Life of the Quarry	= 904638 / 90464 = 10.0 years

**Life = 10.0 years**

The Life of mine may change depend upon the prospecting results, rate of production and the extent of mechanization done by the applicant in near future.

9. Environmental measures to be adopted shall be,
  - i) Dust Control at source while drilling and Proposed Control Blasting,
  - ii) Dust suppression at loading point and transport haul roads,
  - iii) Noise Control in Proposed Control Blasting, control of fly rock missiles and vibration by doing peak particle velocity within 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 fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in stack to maintain minimum emission level 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 adhered to.
- x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.



## 2.0 EXECUTIVE SUMMARY:

a.	Name of the Village	: Gopaanapalli
b.	Name of the Panchayat / Union	: Gopanapalli / Hosur
c.	The proposed total Mineable Reserves	: 904638M <sup>3</sup> /
d.	The proposed quantity of reserves (level of production) for Ten Years to be mined is (Recoverable reserves)	: 904638M <sup>3</sup> (for the First five (I-V)years- 602588M <sup>3</sup> & for the Next five (VI-X)years- 302050M <sup>3</sup> ) /
e.	Total extent of the area	: 3.00.0 Ha. /
f.	Proposed Period of mining	: Ten years
g.	Proposed Depth of mining	: Mining Reserves Calculated upto 66m - Top Soil 3.0m + Rough stone 63m. (Surface Ground Level Above height is 12m and Surface Ground Level Below Depth is 54m).
h.	Existing Pit Dimension	Nil
i.	Average production per year	: 90464M <sup>3</sup> /
j.	Method of mining / level of mechanization	: Opencast, Semi-mechanized Mining with a bench height of 7m and bench width of 5m is proposed.
k.	Types of Machineries used in the quarry	: i) Compressor with jack hammer. ii) Excavator of 0.90Cbm bucket Capacity.

1.	Cost of the Project	
	a. Fixed Cost	: Rs.4,12,90,000/-
	b. Operational Cost	: Rs.30,00,000/-
	c. EMP Cost	: Rs.3,50,000/-
m.	The area applied for lease is bounded by four corners and the coordinates are	: Toposheet No. 57 – H/14
	Latitude	: 12° 37' 59.2819"N to 12° 37' 56.7500"N
	Longitude	: 77° 48' 41.4624"E to 77° 48' 33.7498"E
	North East	: 12° 37' 59.2819" N 77° 48' 41.4624"E
	South East	: 12° 37' 54.3668" N 77° 48' 40.8039"E
	North West	: 12° 38' 00.5729" N 77° 48' 34.6758"E
	South West	: 12° 37' 56.7500" N 77° 48' 33.7498"E



### **3.0 GENERAL INFORMATION:**

3.1	a.	Name of the Applicant	: M/s. Natural Stone Industry
	b.	Address of the Applicant with phone No and e-mail id if any	: M/s. Natural Stone Industry D.No.1/518, Senthil Nagar, V <sup>th</sup> Cross, Pudhupettai Agasipalli, Krishnagiri District - 635 002.
	c.	Status of the Applicant	: Partnership Firm
3.2	a.	Mineral Which the applicant intends to mine	: Rough Stone
	b.	Precise area communication letter No.	: <b>Rc. No.535/2022/Mines dated 22.04.2022</b>
	c.	Period of permission	: 10 Years
	d.	Name and Address of the Recognized Qualified Person preparing the Mining Plan	: <b>S.Mathan Prakash, M.Sc., M.Phil.,</b> RQP/CNN/270/2016/A No.2/274, East Street, Kulasekaranallur Post, Ottapidaram Taluk, Thoothukudi District - 628 401. Email: geomathanraj@gmail.com
	e.	RQP Regn. No.	: RQP/CNN/270/2016/A Valid up to 09.02.2026.



#### 4.0 LOCATION:

##### a. Details of the Area:

State	District	Panchayat / Union	Taluk	Village	S.F.No.	Extent
Tamilnadu	Krishnagiri	Gopanapalli/ /Hosur	Hosur	Gopanapalli	220/1 (P.S.)	3.00.0
<b>TOTAL =</b>						<b>3.00.0</b>



b.	Classification of the Area (Ryotwari / poramboke /others)	:	It is a Government Poramboke Land, which is not fit for vegetation/cultivation.
c.	Ownership / Occupancy of the Applied Lease area (Surface rights)	:	It is a Government Poramboke land. The applicant had been given precise area for the proposed grant of Rough Stone Quarry Lease.
d.	Toposheet No. with Latitude and Longitude	:	<b>Toposheet No. 57 – H/14</b> : <b>12° 37' 59.2819"N to 12° 37' 56.7500"N</b> : <b>77° 48' 41.4624"E to 77° 48' 33.7498"E</b>
e.	Existence of Public Road / Railway line if any nearby the area and approximate distance	:	Krishnagiri - Shoolagiri = 28.0 Kms Shoolagiri – Kelamangalam = 18.6 Kms Quarry site is located in Northwestern side at a distance of 5.4 km. from Kelamangalam village.

#### PART - A

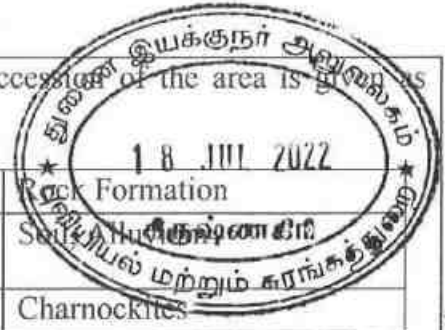
#### 5.0 GEOLOGY AND MINERAL RESERVES:

5.1	a.	Topography: 1. The area applied for quarry lease is almost hilly terrain area sloping towards North Eastern side covered with Rough Stone which does not sustain any type of vegetation. The altitude of the area is Maximum 870m and Minimum 858m above MSL. 2. No major river is found nearby the lease area. 3. Water table is noticed at a depth of 88m from the below surface in the adjacent open wells and bore wells of the area. 4. Temperature of the area is reported to be 18 <sup>0</sup> C to a maximum of 38 <sup>0</sup> C during summer. 5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.
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	<p>b. Infrastructures nearby the applied Lease area.</p> <p>1. Post Office : Mugalur – 1.7 Kms</p> <p>2. Police Station : Kelamangalam – 7.5 Kms</p> <p>3. G.H : Hosur – 15.0 Kms</p> <p>4. Fire service : Hosur – 21.0 Kms</p> <p>5. Railway Station : Hosur – 18.0 Kms</p> <p>6. School : Nagondapalli – 4.5 Kms</p> <p>7. Airport : Bangalore – 51.0 Kms</p> <p>8. Seaport : Chennai – 317.0 Kms</p>										
	<p>c. Regional Geology :</p>	<p><b>KRISHNAGIRI</b> District is underlined 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, Charnockite basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The generalized stratigraphic succession of the geological formations met within this District is as follows.</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Soil, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites</td> </tr> </tbody> </table>		Age	Rock Formation	1.	Recent to Sub recent	Soil, Alluvium	2.	Archaean	Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites
	Age	Rock Formation									
1.	Recent to Sub recent	Soil, Alluvium									
2.	Archaean	Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites									
	<p>d. Geology of the Lease Area</p>	<ol style="list-style-type: none"> <li>The area is mainly composed of Archaean crystalline metamorphic complex.</li> <li>The rock type noticed in the area for lease is <b>Granite Gneiss</b> which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Granite Gneiss is part of peninsular Gneisses, a high grade metamorphic rock.</li> <li>The general trend of formation is N25°W – S25°E and dip towards NE-70°</li> </ol>									





		The general geological succession of the area is as follows under.	
	Age	Rock Formation	
1.	Recent to Sub recent	Semi-consolidated	
2.	Archaean	Charnockites	
3.	Archaean	Peninsular Gneiss, and Calc Gneiss	

5.2 Details of Exploration already carried out if any : Since the **Rough Stone** is seen from the Surface itself, no exploration is needed. However, the area was personally examined by the Geologist who prepared the Mining Plan.

5.3 a. Already excavated pit dimensions Nil

b. **GEOLOGICAL RESERVES:**  
**Top Soil (Gravel):**  
 The Thickness of Top soil in this area is 3.0m and the total volume of topsoil (gravel) will be **92442m<sup>3</sup>**.  
**Rough Stone :**  
 The Geological Reserve is estimated as **1880592m<sup>3</sup>** respectively, at the rate of 100% Recovery upto the permissible depth. The Geological reserve of Rough stone and Top soil(Gravel) is calculated upto **66m (3m top soil + 63m Rough Stone)**. Surface Ground Level Above is 12m and Surface Ground Level Below is 54m.

GEOLOGICAL RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume (Cu.m.)	Geological Reserve Cu.m(100%)	Topsoil (Gravel) Cu.m.
XY-AB	I	217	142	3			92442
	II	173	128	7	155008	155008	
	III	217	142	7	215698	215698	
	IV	217	142	7	215698	215698	
	V	217	142	7	215698	215698	
	VI	217	142	7	215698	215698	
	VII	217	142	7	215698	215698	
	VIII	217	142	7	215698	215698	
	IX	217	142	7	215698	215698	
	X	217	142	7	215698	215698	
<b>Total=</b>					<b>1880592</b>	<b>1880592</b>	<b>92442</b>

c. **MINEABLE RESERVES:**

The Mineable reserves are calculated by deducting 7.5m and 10.0m safety distance and Bench Loss. In this regard, since the adjacent area also be under new lease area, necessary action will be taken to get permission from MMS in future to comply regulation under (111)3 of MMR. 1961.

**Top Soil (Gravel):** The Thickness of Top soil in this area is 3.0m and the total volume of topsoil(gravel) will be 75438m<sup>3</sup>.

**Rough Stone :**

The mineable reserves and the recoverable reserves are 904638m<sup>3</sup> respectively, at the rate of 100% Recovery upto the permissible depth. The Mineable reserve of Rough stone and Top soil(Gravel) is calculated upto 66m (3m top soil + 63m Rough Stone). Surface Ground Level Above is 12m and Surface Ground Level Below is 54m.

**MINABLE RESERVES**

Section	Bench	L (m)	W (m)	D (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)	Topsoil (Gravel) in Cu.m.
XY-AB	I	198	127	3			75438
	II	162	117	7	132678	132678	
	III	191	120	7	160440	160440	
	IV	181	110	7	139370	139370	
	V	171	100	7	119700	119700	
	VI	161	90	7	101430	101430	
	VII	151	80	7	84560	84560	
	VIII	141	70	7	69090	69090	
	IX	131	60	7	55020	55020	
	X	121	50	7	42350	42350	
<b>Total=</b>					<b>904638</b>	<b>904638</b>	<b>75438</b>

**6.0 MINING:**

6.1	Method of Mining	<ol style="list-style-type: none"> <li>1. Opencast method of semi mechanized mining is adopted to extract Rough Stone.</li> <li>2. Machineries like Tractor mounted compressor attached with Jack hammers is being used to drilling and Proposed Control Blasting. Excavators are operated for quarrying of Rough Stone and Tippers / Lorries are used for transportation of Rough Stone to the destination.</li> </ol>
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6.2	Mode of Working	:	It is a semi mechanized quarrying operation using smooth hole drilling with the help of compressor and jack hammers, smooth blasting. Rough Stone are removed using hydraulic excavators and loaded directly to the tippers and transported to the nearby end users.
6.3	Proposed bench height & Width	:	Bench height = 7mts. Bench width = 5mts.
6.4	Details of Overburden / Mineral Production proposed for Ten year	:	<b>Top Soil(Gravel)/ Overburden production details follows:</b> The entire lease area is covered 3.0m of Top Soil(Gravel) and the estimated quantity of Top soil(Gravel) is 75438m <sup>3</sup> . Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.

**Year wise reserves calculations :**

**Rough stone production First Five Years details as follows:**

The proposed rate of production of Rough Stone is estimated as 602588m<sup>3</sup> for First Five (I-V) years. The average proposed rate of production of **Rough Stone** is about 120518m<sup>3</sup> per year at the rate of 100% recovery upto the permissible depth. Reserve Calculated upto 38m (3m top soil + 35m Rough Stone). Surface Ground Level Above is 12m and Surface Ground Level Below is 26m. (Refer Drawing Plate No.IV-A1-Year wise Sections).

Proposed Production of Ten Years.

YEARWISE DEVELOPMENT AND PRODUCTION(First Five (I-V)Years)								
YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume in (m3)	Recoverable Reserve in m3 (100%)	Top Soil (Gravel) in m3
I-YEAR	XY-AB	I	198	127	3			75438
		II	162	117	7	132678	132678	
II-YEAR		III	191	120	7	160440	160440	
III-YEAR		IV	181	110	7	139370	139370	
IV-YEAR		V	171	100	7	119700	119700	
V-YEAR		VI	80	90	7	50400	50400	
<b>Total (I-V Years) =</b>						<b>602588</b>	<b>602588</b>	<b>75438</b>

**Rough stone production Second Five Years details as follows**

The proposed rate of production of **Rough Stone** is estimated as **302050m<sup>3</sup>** for Second Five (VI-X) years. The average proposed rate of production of **Rough Stone** is **60410m<sup>3</sup>** per year at the rate of 100% recovery upto the permissible depth. Reserves Calculated upto **35m** Rough Stone. (Refer Drawing Plate No.IV-B1-Year wise Sections).



**YEARWISE DEVELOPMENT AND PRODUCTION(Second Five (VI-X)Years)**

YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume in (m3)	Recoverable Reserve in m3 (100%)
VI-YEAR	XY-AB	VI	81	90	7	51030	51030
VII-YEAR		VII	151	80	7	84560	84560
VIII-YEAR		VIII	141	70	7	69090	69090
IX-YEAR		IX	131	60	7	55020	55020
X-YEAR		X	121	50	7	42350	42350
<b>TOTAL (VI-X Years) =</b>						<b>302050</b>	<b>302050</b>
<b>Grand Total (I-X Years) =</b>						<b>904638</b>	<b>904638</b>

6.5 a. Mining : Drilling of shot holes will be carried out using compressor and jack hammer. Depth of holes shall be 1 to 2m bench height and spacing shall be 0.75m and burden shall be 0.60m from the preface. Details of drilling equipments are given below.

Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P.
Jack Hammer	6	25.5 mm	Hand held	Atlas copco	Diesel	60

b Loading : Loading of waste and rough stone shall be carried out by 10 tonne capacity tippers from the working place periodically. Details of loading equipment are given as under.

Type	Nos	Bucket Capacity (MT)	Make	Motive power	H.P.
Hydraulic excavator	2	1.2 M <sup>3</sup>	L&T or Ex200	Diesel	120

c. Transportation : Transport of raw materials and waste shall be done by Tipper of 10 M.T. capacity

Type	Nos	Size / Capacity	Make	Motive power	H.P.
Tipper	2	10 M.T	Ashok Leyland	Diesel	110



**d Energy:**

Electricity for mines and lights only at nights (working is restricted on day time only between 9Am to 5Pm). Diesel (HSD) will be used for quarrying machines and 736285 litres of HSD will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the night will be taken from nearby electric poles after obtaining permission from concerned authorities.

**For Top soil(Gravel):**

Per hour excavator will consume = 10 litres / hour  
 Per hour excavator will excavate = 60m<sup>3</sup> of Top soil  
 For 75438m<sup>3</sup> = 75438/60  
 = 1257.3 hours

Diesel consumption 1257.3 working hours = 1257.3 x 10 litres

**Total diesel consumption = 12573 litres of HSD will be utilized for Top Soil(Gravel)**

**For Rough stone:**

Per hour excavator will consume = 16 litres / hour  
 Per hour excavator will excavate = 20m<sup>3</sup> of rough stone  
 For 904638m<sup>3</sup> = 904638/20  
 = 45232 hours

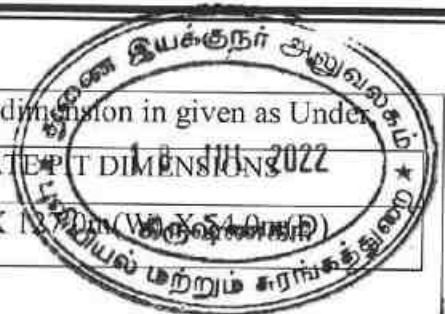
Diesel consume 45232 working hours = 45232 hours x 16 litres

**Total diesel consumption = 723712 litres of HSD will be utilized for Rough Stone.**

**Total diesel consumption is around (Top soil (Gravel) 12573 Litres + Rough Stone 723712 Litres) =736285 litres of HSD for the entire period of life**

6.6	Disposal of Overburden	: The estimated quantity of Top soil(Gravel) is 75438m <sup>3</sup> . Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.
6.7	Brief Note on Conceptual Mining Plan for the entire lease period	: Conceptual Mining Plan is prepared with an object of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, etc.,





Average Ultimate Pit dimension in given as Under

ULTIMATE PIT DIMENSIONS 2022
198.0m(L) X 137.0m(W) X 54.0m(D)

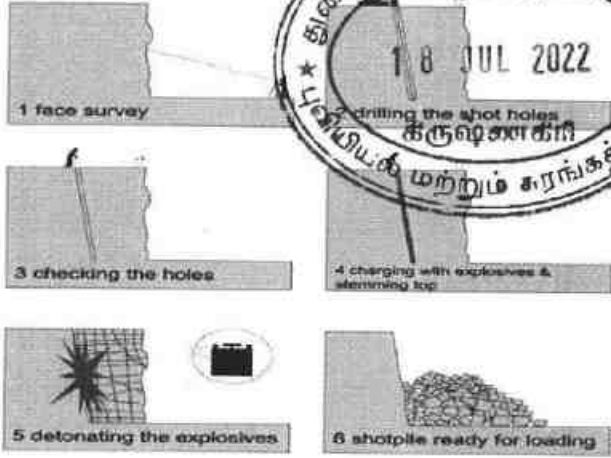
Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc.

Afforestation has been proposed on the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.

**7.0 BLASTING:**

7.1	Proposed Control Blasting Pattern	:	<p>The massive formation shall be broken into pieces of portable size by drilling and Proposed Control Blasting using jack hammers and shot hole Blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 tonnes per K.g of explosives.</p> <p><b>Proposed Control Blasting</b> parameters are as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Diameter of the hole</td> <td style="width: 5%;">:</td> <td style="width: 35%;">32-36 mm</td> </tr> <tr> <td>Spacing</td> <td>:</td> <td>60 Cms</td> </tr> <tr> <td>Depth</td> <td>:</td> <td>1 to 1.5m</td> </tr> <tr> <td>Charge / Hole</td> <td>:</td> <td>D.Cord with water or 70 gms of gun powder or Gelatine.</td> </tr> <tr> <td>Pattern of hole</td> <td>:</td> <td>Zig Zag</td> </tr> <tr> <td>Inclination of hole</td> <td>:</td> <td>70<sup>0</sup> from the horizontal.</td> </tr> <tr> <td>Quantity of rock broken</td> <td>:</td> <td>0.45 MT x 2.6 = 1.17 MT</td> </tr> <tr> <td>Control Blasting efficiency @ 90%</td> <td>:</td> <td>1.17 x 90% = 1.05MT / hole</td> </tr> <tr> <td>Charge per hole</td> <td>:</td> <td>140 gms of 25mm dia cartridge</td> </tr> <tr> <td>Quantity of rock broken per day</td> <td>:</td> <td>301.55M<sup>3</sup>.</td> </tr> </table>	Diameter of the hole	:	32-36 mm	Spacing	:	60 Cms	Depth	:	1 to 1.5m	Charge / Hole	:	D.Cord with water or 70 gms of gun powder or Gelatine.	Pattern of hole	:	Zig Zag	Inclination of hole	:	70 <sup>0</sup> from the horizontal.	Quantity of rock broken	:	0.45 MT x 2.6 = 1.17 MT	Control Blasting efficiency @ 90%	:	1.17 x 90% = 1.05MT / hole	Charge per hole	:	140 gms of 25mm dia cartridge	Quantity of rock broken per day	:	301.55M <sup>3</sup> .
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Quantity of rock broken per day	:	301.55M <sup>3</sup> .																															

**ROCK BLASTING**



7.2 Types of Explosives

: Following explosives are recommended for efficient Proposed Control Blasting with safe practice.

S. No	Description	Class / Division	Type	Size
1.	Slurry	Class - 3	Nitro Compound	25 x 200
2.	Detonators	Class - 3	Ordinary and elec (OD & ED)	6.5 x 32
3.	Safety fuse	Class - 6	Blue sump fuse coils of 10mts each	

7.3 Measures proposed to minimize ground vibration due to Proposed Control Blasting

: The following steps shall be adopted to control ground vibration due to Proposed Control Blasting.

1. The minimum recommended delay time of 8ms was introduced to minimize ground vibration to avoid constructive interference of blast vibration waves and hence its impact or amplitude.
2. In case of electronic detonators, which are inherently much more accurate delays (+/- 0.2 milliseconds delay) to minimizes the ground vibration.
3. Use of Ammonium nitrate fuel oil mixture for shot holes may be avoided because which cause for high fly of rocks in view critical diameter problem. Only high strength explosives like slurry will be used in the form of cartridge.

		4. Charge per hole should not exceed the powder factor designed for each hole based on the quantum of Proposed Control Blasting, strength of rocks, fracture pattern etc.
7.4	Storage of Explosives and safety measures to be taken while Proposed Control Blasting.	<ol style="list-style-type: none"> <li>1. The Applicant stores the explosives per the Indian Explosives Act, 1958.</li> <li>2. The explosives to be used in mines being a small quantity, the District collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S &amp; B types.</li> <li>3. An authorized explosive agency is engaged to carry out blasting.</li> <li>4. The blasting time in a day is between 5 PM to 6 PM.</li> <li>5. First Aid Box is kept ready at all the time.</li> <li>6. Necessary precautionary announcement is being carried out before the blasting operation.</li> </ol>

### 8.0 MINE DRAINAGE:

8.1	Depth of Water table	: The ground water table is reported as <b>88m</b> below ground level in nearby open wells and bore wells of this area. Mining reserves depth is calculated upto <b>66m</b> (Surface Ground Level Above Height 12m & Surface Ground Level Below Depth 54m). Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.
8.2	Arrangement and Places where the mine water is finally proposed to be discharged	: The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 lpm and it shall be pumped out periodically by a stand by diesel



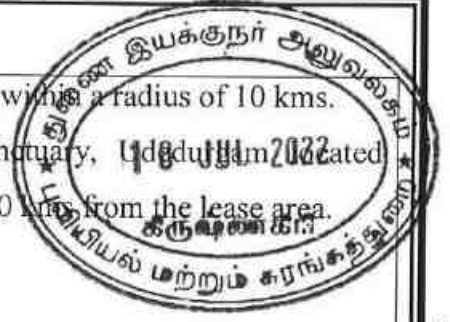
		powered Centrifugal Pump motor with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.
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**9.0 OTHER PERMANENT STRUCTURES:**

9.1	Habitations / Village	:	There are no villages within a radius of 500m. The nearest habitations with the population is given as under,																				
			<table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in Kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Goolisandram</td> <td>1.0kms</td> <td>185</td> </tr> <tr> <td>East</td> <td>Pothasandhira</td> <td>2.5kms</td> <td>250</td> </tr> <tr> <td>South</td> <td>Nagappan Agraharam</td> <td>1.5kms</td> <td>370</td> </tr> <tr> <td>West</td> <td>Agraharam</td> <td>3.0kms</td> <td>310</td> </tr> </tbody> </table>	Direction	Village	Distance in Kms	Population	North	Goolisandram	1.0kms	185	East	Pothasandhira	2.5kms	250	South	Nagappan Agraharam	1.5kms	370	West	Agraharam	3.0kms	310
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South	Nagappan Agraharam	1.5kms	370																				
West	Agraharam	3.0kms	310																				
9.2	Power lines (HT/LT)	:	No power line is located in the lease area.																				
9.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There is No Water bodies (River, Pond, Lake, Odai, Channel etc) located within a radius of 500m.																				
9.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 500m.																				
9.5	Road (NH, SH, Village Road etc)	:	Krishnagiri - Shoolagiri = 28.0 Kms Shoolagiri – Kelamangalam = 18.6 Kms Quarry site is located in Northwestern side at a distance of 5.4 km. from Kelamangalam village.																				
9.6	Places of Worship	:	There are no Places of Worship within a radius of 500m.																				
9.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	Distance between Reserve Forest Sanamavu and the applied area = 6.4kms Distance from Cauvery North Wild life Sanctuary, Udedurgam = 13.0kms.																				

9.8	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 interstate borders within a radius of 10 kms. Cauvery North Wild life Sanctuary, Ududupeta is situated within the distance of about 13.0 kms from the lease area.
9.9	Any Other Structures	:	Nil



**10.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES:**

10.1	Employment Potential (Management & Supervisory personal)	:	<p>1. As per Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the workers directly under his control and supervision.</p> <p>2. The following man power is proposed for quarrying Rough Stone during the Ten years period to achieve the proposed production to the provisions of the Government norms.</p> <table border="1"> <tr> <td>1.</td> <td>Skilled</td> <td>Operator</td> <td>2 No.</td> </tr> <tr> <td></td> <td></td> <td>Mechanic</td> <td>1 No.</td> </tr> <tr> <td></td> <td></td> <td>Blaster/Mat</td> <td>1 No.</td> </tr> <tr> <td>2.</td> <td>Semi – skilled</td> <td>Driver</td> <td>2 Nos</td> </tr> <tr> <td>3.</td> <td>Unskilled</td> <td>Musdoor / Labours</td> <td>5 Nos</td> </tr> <tr> <td></td> <td></td> <td>Cleaners</td> <td>3Nos</td> </tr> <tr> <td></td> <td></td> <td>Office Boy</td> <td>1No</td> </tr> <tr> <td>4.</td> <td>Management &amp; Supervisory staff</td> <td></td> <td>3No.</td> </tr> <tr> <td></td> <td>Total =</td> <td></td> <td>18Nos</td> </tr> </table>	1.	Skilled	Operator	2 No.			Mechanic	1 No.			Blaster/Mat	1 No.	2.	Semi – skilled	Driver	2 Nos	3.	Unskilled	Musdoor / Labours	5 Nos			Cleaners	3Nos			Office Boy	1No	4.	Management & Supervisory staff		3No.		Total =		18Nos
1.	Skilled	Operator	2 No.																																				
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		Cleaners	3Nos																																				
		Office Boy	1No																																				
4.	Management & Supervisory staff		3No.																																				
	Total =		18Nos																																				
10.2	Welfare Measures	:																																					
	a. Drinking Water	:	Drinking water at the rate of 2Ltrs per person shall be provided as per the Mines Rules, 1960. It is proposed to make a borehole for providing uninterrupted supply of drinking water and other utilities.																																				

b.	Sanitary facilities	:	Semi permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960, separately for males and females. Washing facilities are also arranged as per rule (36) of the Mines Rules, 1960.
c.	First Aid Facility	:	Being a small mine First Aid station as per provisions under Rule (44) of the Mines Rules 1960 will be provided with facilities as per the third schedule as prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.
d.	Labour Health	:	As per Mines Rule, Periodic medical examination has been arranged for occupational health once in a year in addition to attending medical treatment of occupational injuries under the Rule 45 (A), MR, 1960.
e.	Precautionary safety measures to the Laborers	:	Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have been provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a semi-mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and system at quarrying operation.

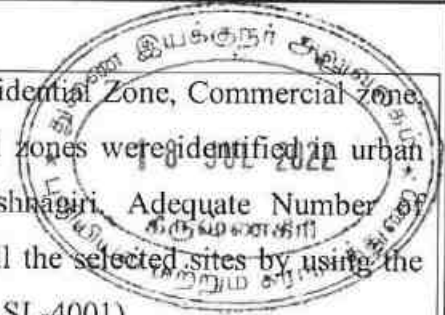
**PART - B**

**11.0 ENVIRONMENTAL MANAGEMENT PLAN:**

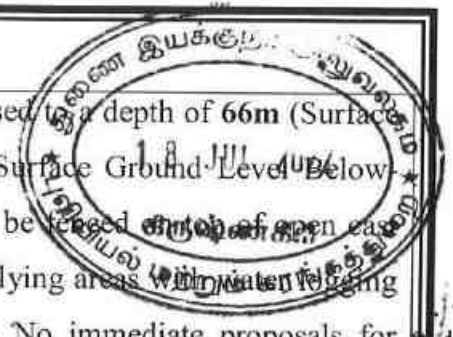
11.1	Existing Land Use Pattern	:	The existing land use pattern is given as under.																												
			<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Land Use</th> <th>Present Area (Hect)</th> <th>Area in use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Area under quarrying</td> <td>Nil</td> <td>2.43.0</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>3.</td> <td>Roads</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>4.</td> <td>Green Belt</td> <td>Nil</td> <td>0.55.0</td> </tr> <tr> <td>5.</td> <td>Unutilized Area</td> <td>3.00.0</td> <td>Nil</td> </tr> <tr> <td></td> <td><b>Total =</b></td> <td><b>3.00.0Ha</b></td> <td><b>3.00.0Ha</b></td> </tr> </tbody> </table>	Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)	1.	Area under quarrying	Nil	2.43.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	Nil	0.01.0	4.	Green Belt	Nil	0.55.0	5.	Unutilized Area	3.00.0	Nil		<b>Total =</b>	<b>3.00.0Ha</b>	<b>3.00.0Ha</b>
Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)																												
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3.	Roads	Nil	0.01.0																												
4.	Green Belt	Nil	0.55.0																												
5.	Unutilized Area	3.00.0	Nil																												
	<b>Total =</b>	<b>3.00.0Ha</b>	<b>3.00.0Ha</b>																												



11.2	Water Regime	: Water table in this area is noticed at a depth of 88m below the surface ground level and presently the quarrying of Rough Stone Mining reserves is calculated upto 66m (Surface Ground Level Above Height 12m Below Depth 54m). It will not affect the ground water depletion of this area.																				
11.3	Flora and Fauna	: Except acacia bushes, no other valuable trees are noticed in the applied lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.																				
11.4	Climatic conditions	: Generally sub tropical climatic condition prevails throughout the year and this District receives rain both in South west and North east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18 <sup>0</sup> C during winter and to a maximum of 38 <sup>0</sup> C during the summer.																				
11.5	Human Settlement	: The nearest habitations with the population is given . <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in Kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Goolisandram</td> <td>1.0kms</td> <td>185</td> </tr> <tr> <td>East</td> <td>Pothasandhira</td> <td>2.5kms</td> <td>250</td> </tr> <tr> <td>South</td> <td>Nagappan Agraharam</td> <td>1.5kms</td> <td>370</td> </tr> <tr> <td>West</td> <td>Agraharam</td> <td>3.0kms</td> <td>310</td> </tr> </tbody> </table>	Direction	Village	Distance in Kms	Population	North	Goolisandram	1.0kms	185	East	Pothasandhira	2.5kms	250	South	Nagappan Agraharam	1.5kms	370	West	Agraharam	3.0kms	310
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11.6	Plan for Air, Dust Suppression	: Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. For the sampling of air, high volume air sampler (Model VFC-PM10) was used (10 meter above and 5 meter away from road) and the particulates were collected on what man GFA glass fiber filters dried in a hot air oven at 105 <sup>0</sup> C for 1hr and weighed. The average flow rate was about 1.1 cubic meters.																				
11.7	Plan for Noise Control	: Quarrying of Rough Stone will be carried out by drilling and Proposed Control 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. In order to assess the extent of noise pollution due to vehicular traffic different																				



		zones viz., Silence zone, Residential Zone, Commercial zone, Traffic signals and Industrial zones were identified in urban and suburban areas of Krishnagiri. Adequate Number observations were made in all the selected sites by using the sound level meter (LT Lutron SL-4001).
11.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Ten years	: Factors to be considered for EIA are, <ol style="list-style-type: none"> <li>1. Dust generation,</li> <li>2. Land degradation</li> <li>3. Stabilization and vegetation of dumps</li> <li>4. Adverse effect on water regime</li> <li>5. Socio economic benefits arising out of Mining.</li> <li>6. Noise and Vibration.</li> </ol>
	a. Dust	: Dust is expected to be generated from drilling, hauling roads; place of excavation etc and it will be suppressed by periodical wetting of lands.
	b. Land degradation	: Land degradation is by means of cutting the trees and removal of fertile soil does not arise. Proposed usage of land for the Ten years shall be less than <b>3.00.0Ha</b> . Afforestation will be started during the first year of mining operation itself.
	c. Stabilization and vegetation of dumps	: The topsoil will be spread over the non-active dumps along the slope and edges to plant tree saplings to form vegetal cover over the dumps. Such vegetal cover will prevent erosion of dumps during rainy seasons.
	d. Socio economic benefits arising out of mining	: <ol style="list-style-type: none"> <li>1. To provide Employment opportunities of the nearby villagers.</li> <li>2. For the cultural development of the nearby villagers.</li> </ol>
	e. Noise and vibration	: Since, no deep hole blasting is proposed, small dia explosives are used for breaking the hard rock and boulders, the noise and vibration will be very minimum and are within the permissible limits.
11.9	Proposal for Waste Management	: There is no requirement for waste management as there is 100% recovery percentage.

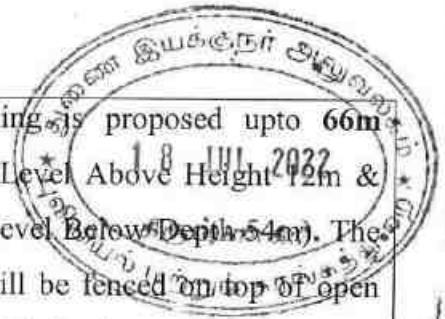


11.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	: The present mining is proposed to a depth of 66m (Surface Ground Level Above-12m & Surface Ground Level Below-54m). The mined out area will be fenced and open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
11.11	Program for Afforestation	: Trees like tamarind, casuarinas etc will be planted along the lease boundary and avenues as well as over non active dumps at a rate 60 trees per annum with an interval of 5m. The rate of survival expected to be 80% in this area.
11.12	Proposed Financial Estimate / Budget for (EMP) Environment Management <b>A. Fixed Asset Cost:</b> Land Cost Labour Shed Sanitary Facility Fencing cost Total=	: Rs. 4,10,00,000/- ( Leased tender amount for Government Poramboke Land ) : Rs. 1,40,000/- : Rs. 70,000/- : Rs. 80,000/- : <b>Rs.4,12,90,000/-</b>
	<b>B. Operational Cost:</b> <b>Machinery cost</b>	: <b>Rs.30,00,000/-</b>
	<b>C. EMP Cost:</b> 1. Drinking water facility 2. Safety kits 3. Water sprinkling 4. Afforestation 5. Water quality test 6. Air quality test 7. Noise/vibration test Total=	: Rs. 1,10,000/- : Rs. 75,000/- : Rs. 50,000/- : Rs. 25,000/- : Rs. 30,000/- : Rs. 30,000/- : Rs. 30,000/- : <b>Rs. 3,50,000/-</b>
	<b>Total Project cost(A+B+C)</b>	: <b>Rs.4,46,40,000/-</b>



## 12.0 MINE CLOSURE PLAN:

12.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	The present mining is proposed upto <b>66m</b> (Surface Ground Level Above Height <b>12m</b> & Surface Ground Level Below Depth <b>54m</b> ). The mined out area will be fenced on top of open cast working with S1 fencing to arrest the entry of cattle's and public in to the quarry site.
12.2	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. Green belt development at the rate of 60 trees per year will be proposed.
12.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	It is a fresh Rough stone quarry with a depth of <b>66m</b> for Ten years and hence, no need of mitigation and restoration / reclamation of the applied lease area.



**13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**



- (i) Permission will be obtained from the Director of Mines Safety for the extracting the Rough Stone from the Boundary barriers and from slope.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavour every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) Accordingly, Mining Plan is prepared under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain environment clearance from State Level Environmental Impact Assessment Authority.
- (v) This Mining Plan is prepared for the Applied Rough Stone Quarry for a period of Ten Years.

This Mining Plan is approved based on guidelines / instruction issued and in corporation of the particulars specified in the letter Roc. No. 535/2022 Dated 18.7.2022 of the Deputy Director of Geology and Mining, Krishnagiri and subject to further fulfilment of the conditions laid down under Tamil Nadu Minor Mineral Concession Rules, 1959 and Minor Mineral Conservation and Development Rule 2010.

*S. Mathan Prakash*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A

*S. Mathan Prakash*  
**DEPUTY DIRECTOR,**  
Geology and Mining,  
Collectorate, Krishnagiri.

*S. Mathan Prakash*  
18/7/22

This Mining Plan is approved subject to the conditions / Stipulation Indicated in the Mining Plan Approval

Letter Roc. No. 535/2022 Dated 18.7.2022



ந.க.எண்.535/2022/கனிமம் நாள்: 22.04.2022



குறிப்பாணை

**பொருள்**

கனிமங்களும் குவாரிகளும் - சிறுகனிமம் சாதாரண வகை கற்கள் - கிருஷ்ணகிரி மாவட்டம் - அரசு புறம்போக்கு புலங்களில் அமைந்துள்ள கற்குவாரிகள் - டெண்டர் / ஏலம் முறையில் குத்தகை வழங்குவது தொடர்பாக அரசிதழ் வெளியீடு - ஓசூர் வட்டம் - கோபணப்பள்ளி கிராமம் - புல எண்.220/1(பகுதி-1) 3.00.0 ஹெக்டேர் பரப்பில் 05.04.2022 அன்று டெண்டருடன் இணைந்த ஏலம் நடத்தப்பட்டது - ஏலத்தில் அதிகபட்ச குத்தகை தொகை குறிப்பிட்ட தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி என்கிற நிறுவனத்திற்கு ஏலம் உறுதி செய்யப்பட்டது - விதிகளின்படி குத்தகை தொகை முழுவதும் செலுத்தப்பட்டது - குத்தகை உரிமம் வழங்கி வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் ஆணைய முன் அனுமதி பெற்று சமர்ப்பிக்கக் கோருதல் - தொடர்பாக.

**பார்வை:**

1. வட்டாட்சியர், ஓசூர் கடிதம் ந.க.எண்.426/2022/அ2 நாள்:22.01.2022.
2. வருவாய் கோட்டாட்சியர் ஓசூர் அறிக்கை ந.க.எண்.103/2022/பி2 நாள்:04.02.2022.
3. வன உயிரின காப்பாளர், ஓசூர் கடிதம் ந.க.எண்.261/2022/எல் நாள்:10.02.2022.
4. கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) புலதணிக்கை அறிக்கை நாள்:11.02.2022.
5. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022.
6. தி இந்து செய்தி நாளிதழில் விளம்பரம் நாள்:17.03.2022.
7. தி இந்து, தினகரன், தினமலர் மற்றும் காலகைத்திர் ஆகிய செய்தி நாளிதழ்களில் 29.03.2022 அன்று வெளியிடப்பட்ட மாவட்ட ஆட்சியரின் அறிவிக்கை.
8. தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி மற்றும் இரண்டு நபர்கள் ஆகியோரது டெண்டர் விண்ணப்பம் நாள்:04.04.2022.
9. திரு.லோகேஷ் மற்றும் பத்து நபர்களின் ஏல விண்ணப்பங்கள் நாள்:05.04.2022.
10. தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி என்பவரது கடிதம் நாள்:19.04.2022.
11. தொடர்புடைய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புல எண்.220/1(பகுதி-1) விஸ்.3.00.0 ஹெக்டேர் பரப்பில் அமைந்துள்ள சாதாரண கற்குவாரியை டெண்டர் / பொது ஏலத்திற்கு கொண்டு வர உரிய நில இருப்பு அறிக்கை வருவாய் கோட்டாட்சியிடம் கோரப்பட்டதில், ஓசூர் வட்டாட்சியர், ஓசூர் வருவாய் கோட்டாட்சியர் மற்றும் கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவன், தனி வருவாய் ஆய்வுகள் மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோர் தணிக்கை மேற்கொண்டு கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புறம்போக்கு தீ.ஏ.த.தரிசு புல எண்.220/1(பகுதி-1) விஸ்.3.00.0 ஹெக்டேர் பரப்பு பூமியினை குத்தகை உரிமம் வழங்கிட விதிகளின்படி மேற்கண்ட புலம் தகுதிவாய்ந்தது என்பதால் டெண்டருடன் இணைந்த ஏலத்தின் மூலம் உரிமம் வழங்கிட பரிந்துரை செய்துள்ளனர். வன உயிரின காப்பாளர், ஓசூர் மேற்கண்ட புலங்கள் விதிகளின்படி அருகில் உள்ள காப்பு காடுகளுக்கு வரையறுக்கப்பட்ட பாதுகாப்பு தொலைவிற்கு அப்பால் அமைந்துள்ளதாக அறிக்கை அளித்துள்ளார்.

3. அதன் அடிப்படையில், கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்களை வெட்டியெடுத்துச் செல்ல உரிமம் வழங்க ஏதுவாக கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:26.03.2022-ன்படி பிசுபரம் செய்யப்பட்டது. அதன்படி 04.04.2022-ம் நாள் பிற்பகல் 05.00 மணிக்குள் மூடி முத்திரை இடப்பட்ட டெண்டர் மனுக்களை அளிக்க இறுதி நாளாக அறிவித்து, 05.04.2022 அன்று பொது ஏலம் நடத்தப்பட்டு டெண்டர் மனுக்கள் ஏலத்தில் கலந்து கொண்டவர்கள் முன்னிலையில் திறக்கப்பட்டன.

4. மேற்கண்ட அரசிதழில் விளம்பரம் செய்யப்பட்டிருந்த குவாரிப்பட்டியலில் வரிசை எண்.(07), ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.220/1(பகுதி-1)-ல் 3.00.0 ஹெக்டேர் பரப்பில் உள்ள கற்குவாரிக்கு டெண்டர் / பொது ஏலத்தில் கலந்து கொண்டவர்களில் தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி ஏலத்தில் கோரிய தொகை ரூ.4,10,00,000/- மாவட்ட ஆட்சித் தலைவர் அவர்களால் நிர்ணயம் செய்யப்பட்டிருந்த ஏலத் தொகையை விட அதிகமாக இருந்ததால் அவருக்கு ஏலம் ஊர்ஜிதம் செய்யப்பட்டது. மேற்கண்ட ஏலதாரர் மொத்த குத்தகை தொகையையும் விதிகளின்படி 19.04.2022-க்குள் செலுத்தியுள்ளார்.

5. எனவே, ஏலதாரர் குத்தகை தொகை முழுவதும் செலுத்திவிட்டபடியால், மேற்படி கற்குவாரி ஏலமானது விதிகளின்படி உயர்ந்தபட்ச ஏலம் கோரிய தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி நிறுவனத்திற்கு உறுதி செய்யப்படுகிறது. மேலும், மேற்படி நபருக்கு ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல



எண்.220/1(பகுதி-1)-ல் 3.00.0 ஹெக்டேர் பரப்பு புலத்தில் பத்து (10) ஆண்டுகளுக்கு குவாரி உரிமம் வழங்க ஏதுவாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.41-ன்படி கீழ்க்கண்ட நிபந்தனைகளுடன் ஏற்பளிக்கப்பட்ட கரங்கத் திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்கவும், அதன் தொடர்ச்சியாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.42-ன்படி மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவு பெற்று சமர்ப்பிக்கும் பட்சத்தில் சாதாரண கற்குவாரி உரிமம் வழங்கப்படும் என்ற விவரம் இதன் மூலம் தெரிவிக்கப்படுகிறது.

**நிபந்தனைகள்:**

- 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், அட்டவணை-II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.
- அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர், அரசு புறம்போக்கு புலங்களுக்கு 10 மீட்டர் மற்றும் இதர நிலையான அமைப்புகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப் பணி மேற்கொள்ள வேண்டும்.
- விதிகளின் படி ஏற்பளிக்கப்பட்ட கரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.
- குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் முன் அனுமதி பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

இணைப்பு: குத்தகை உரிமம் வழங்க பரிந்துரைக்கப்பட்ட புல வரைபடம்.

ஓம்/- விஜேய சந்திர பாணு ரெட்டி  
மாவட்ட ஆட்சித் தலைவர்,  
கிருஷ்ணகிரி.

// உண்மை நகல்// உத்தரவுபடி//

மாவட்ட ஆட்சியருக்காக,  
கிருஷ்ணகிரி

பெறுநர்:  
தி/ள்.நேச்சுரல் ஸ்டோன் இண்டஸ்ட்ரி,  
1/518, செந்தில் நகர்,  
5வது கிராஸ், புதுப்பேண்ட,  
அகசிப்பள்ளி,  
கிருஷ்ணகிரி மாவட்டம்.

நகல்: 1. இயக்குநர், புவியியல் மற்றும் கரங்கத் துறை, சென்னை  
2. தமிழ்நாடு மாநில சுற்றுச்சூழல் மதிப்பீட்டு ஆணையம், சென்னை.

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

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# கிருஷ்ணகிரி மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

கிருஷ்ணகிரி, மார்ச் 14, 2022  
[பிலவ, மாசி 30 - திருவள்ளூர் ஆண்டு 2053]

[எண் 15

## மாவட்ட ஆட்சியர் அறிவிக்கை

[ந. க. எண். 180/2022/(கனிமம்), நாள்: 10.03.2022]

சாதாரண கற்குவாரி ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏலம் குறித்த அறிவிப்பு

டெண்டர் விண்ணப்பங்கள் பெற கடைசி நாள்	:	30.03.2022
		பிற்பகல் 05.00 மணி வரை
பொது ஏலம் நடைபெறும் நாள்	:	31.03.2022
		முற்பகல் 10.30 மணி முதல்

1. கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து பொது உபயோக பயன்பாட்டிற்காக சாதாரண கற்களை வெட்டியெடுத்துச் செல்வதற்கு தனிநபர் மற்றும் தனியார் நிறுவனங்களுக்கு குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் வரவேற்கும் மற்றும் ஏல அறிவிப்பு.
2. 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் விதி 8 உள்விதி (1)-ன்படி கிருஷ்ணகிரி மாவட்டத்தில் இவ்வறிக்கையுடன் இணைக்கப்பட்ட அட்டவணையில் குறிப்பிடப்பட்டுள்ள அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து சாதாரணகற்களை குவாரி செய்து எடுத்துச் செல்ல டெண்டருடன் இணைந்த ஏல முறையில் குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட 03 பிரதிகள் கொண்ட டெண்டர் விண்ணப்பங்கள் கிருஷ்ணகிரி மாவட்ட ஆட்சியரால் வரவேற்கப்படுகின்றன.
3. இந்த அறிவிக்கையின்படி விண்ணப்பிக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் பின் இணைப்பு VI-ல் குறிப்பிடப்பட்டுள்ள படிவத்தில் இருக்க வேண்டும் மாதிரி விண்ணப்பப்படிவம் இந்த மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ளது. இணைப்பில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் ஏற்றுக் கொள்ளப்படமாட்டாது.
4. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களுடன் இணைத்து அனுப்பப்பட வேண்டிய இணைப்புகளின் விவரங்கள் மற்றும் குத்தகை நிபந்தனைகள் பற்றிய விவரங்கள் குறிப்பிடப்பட்டுள்ள அரசிதழ், கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி புலியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகம், கிருஷ்ணகிரி மாவட்டத்திலுள்ள அனைத்து சார் ஆட்சியர்/ வருவாய் கோட்டாட்சியர், வட்டாட்சியர் மற்றும் ஊராட்சி ஒன்றிய ஆணையர் அலுவலகங்களின் தகவல் பலகையில் விளம்பரம் செய்யப்படும்.



5. அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண கற்குவாரி இணங்குளுக்கு 05 ஆண்டுகளும், புதியதாக சேர்க்கப்பட்டுள்ள (virgin) ஏற்கனவே குவாரி பணி நடைபெறாத சாதாரண கற்குவாரி இணங்குளுக்கு 10 ஆண்டுகளும் ஆகும்.
6. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பதாரர் தனது விண்ணப்பத்தில் குவாரியின் மொத்த குத்தகை காலத்திற்குமான ஒரே தவணையில் செலுத்தத்தக்க குத்தகை தொகையை உரிய இடத்தில் எண்ணிலும் எழுத்திலும் தெளிவாக குறிப்பிட வேண்டும்.
7. மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின்படி அரசிதழில் கண்டுள்ள நிபந்தனைகளின்படி பூர்த்தி செய்யப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களை அனைத்து இணைப்புகளுடன் கவரில் வைத்து மூடி முத்திரையிட்டு துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி என்ற விலாசமிட்டு நேரிலோ அல்லது ஒப்புகை பெறத்தக்க பதிவஞ்சல் மூலமாகவோ மாவட்ட ஆட்சியர் அலுவலக வளாக தரைதளத்தில் அறை எண்-30ல் உள்ள புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அலுவலகத்தில் 2022ம் ஆண்டு மார்ச் திங்கள் 30-ம் நாள் மாலை 5.00 மணிக்குள் கிடைக்கும்படி அனுப்பப்பட வேண்டும். கவரின் மீது விண்ணப்பிக்கும் குவாரியின் விவரம் மற்றும் அட்டவணையில் குறிப்பிட்டுள்ள குவாரியின் வரிசை எண் போன்றவற்றை தவறாமல் குறிப்பிட வேண்டும்.
8. மேலே குறிப்பிட்ட காலக்கெடுவிற்குள் வரப்பெற்ற விண்ணப்பங்கள் மட்டும் ஏலம் நடைபெறும் நாளன்று ஆஜராகிவிருக்கும் சம்பந்தப்பட்ட குவாரிக்கு விண்ணப்பித்துள்ள விண்ணப்பதாரர்கள் மற்றும் பொது ஏலத்தில் கலந்து கொள்பவர்கள் முன்னிலையில் அட்டவணைகளில் உள்ள குவாரிகளின் வரிசைகளின் முறையே முதலில் பொது ஏலமும் பின்னர் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பும் மேற்கொள்ளப்படும்.
9. மேலே குறிப்பிட்ட நாளில் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பதற்கு முன்னர் ஒவ்வொரு குவாரிக்கும் தனித்தனியே பொது ஏலம் விடப்படும். ஏல நடவடிக்கை முடிவு பெற்ற பின்பு சம்பந்தப்பட்ட குவாரிக்கு வரப்பெற்ற டெண்டர் விண்ணப்பங்கள் பிரித்து பரிசீலிக்கப்படும். டெண்டர் விண்ணப்பம் மூலம் கோரப்பட்டுள்ள உயர்ந்தபட்ச டெண்டர் தொகை அல்லது ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச குத்தகை தொகை இதில் எது அதிகமோ அத்தொகையே சம்பந்தப்பட்ட குவாரிக்கான உயர்ந்தபட்ச குத்தகை தொகையாக எடுத்துக்கொள்ளப்பட்டு குவாரி குத்தகை உரிமம் வழங்குதல் சம்பந்தமாக நடவடிக்கைகள் மேற்கொள்ளப்படும்.
10. மேற்கண்டபடி வரப்பெறும் டெண்டர் / ஏல விண்ணப்பங்கள், 1959ஆம் ஆண்டு தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், சுரங்கங்கள் மற்றும் கனிமங்கள் (மேம்படுத்துதல் மற்றும் முறைப்படுத்துதல்) சட்டம் 1957 மற்றும் இந்த ஏல அறிவிப்பில் குறிப்பிட்டுள்ள முக்கிய நிபந்தனைகளின்படி பரிசீலிக்கப்பட்டு அவற்றின்மீது தக்க ஆணைகள் பிறப்பிக்கப்படும்.
11. இந்த மாவட்ட அரசிதழ் அறிவிக்கை பிரசுரிக்கப்பட்ட பின்னரோ, குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ, நிபந்தனைகளை மாற்றுவோ அல்லது ரத்து செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளின் குத்தகை உரிமம் கோரும் ஒப்பந்தப்புள்ளி மனுக்களை எக்காரணமும் கூறாமல் ரத்து செய்யவோ அல்லது மேற்படி மனுக்களை மூடி முத்திரையிடப்பட்ட உறைகளை திறக்கும் நாள் நேரம் மற்றும் ஏலம் நடத்தும் நாள் மற்றும் நேரம் ஆகியவைகளை தள்ளிவைக்கவோ நிறுத்திவைக்கவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு. ஏதாவது காரணத்தினால் ஒத்திவைக்க நேர்ந்தால் அதற்கு மனுதாரர்கள் யாருக்கும் நஷ்டஈடு கோர உரிமை இல்லை.
12. விண்ணப்பதாரர் ஒவ்வொரு குவாரிக்கும் தனித்தனியே ஒரு ஒப்பந்தப்புள்ளி விண்ணப்பத்தை உரிய இணைப்புகளோடு அனுப்ப வேண்டும். ஒரே விண்ணப்பத்தில் ஒரு குவாரிக்கு மேல் பல குவாரிகளை குறிப்பிட்டு அனுப்பும் விண்ணப்பம் நிராகரிக்கப்படும்.



13. ஒப்பந்தப்புள்ளி விண்ணப்பம் அனுப்புவதற்கு முன்/ ஏலத்தில் கலந்து கொள்வதற்கு முன் இம்மாவட்ட அரசிதழ் அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள பட்டியலில் கண்ட சம்பந்தப்பட்ட குவாரியை / துறைமுகத்தை விண்ணப்பதாரர் தனது சொந்த செலவிலேயே நேரில் பார்வையிட்டு பாதை வசதி கனிமத்தின் தரம் மற்றும் கனிமத்தின் இருப்பு ஆகியவற்றை ஆராய்ந்து பின்னர் குத்தகை உரிமம் கோரி விண்ணப்பிக்க வேண்டும் மற்றும் ஏலத்தில் கலந்து கொள்ளவேண்டும். ஆணை வழங்கப்பட்ட பின் குவாரி அமைந்துள்ள புல எண், பரப்பு, குவாரிகளின் நான்கு எல்லைகள், பாதை வசதி, கனிமத்தின் தரம் கனிமத்தின் இருப்புக்குறித்து எவ்வித தாவரவும் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.
14. 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் கண்டுள்ள அனைத்து சாராம்சங்களையும் மாவட்ட அரசிதழில் உள்ள அனைத்து நிபந்தனைகளையும் நன்கு தெரிந்து கொண்டபின் ஒப்பந்தப்புள்ளி விண்ணப்பங்களை உரிய இணைப்புகளோடு அனுப்பவேண்டும். விண்ணப்பம் அனுப்பிய பிறகு விதிகள் மற்றும் குத்தகை நிபந்தனைகள் பற்றி சரியாக தெரியாது என மனுதாரர் வாதிட்டால் அது ஏற்றுக்கொள்ளப்பட மாட்டாது.
15. ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏல நிபந்தனைகள் :

- 1) ஒவ்வொரு குவாரிக்கும் இந்த அரசிதழின் பிற்சேர்க்கையில் பிரசுரிக்கப்பட்டுள்ள இணைப்பு VI-ல் காணும் மாதிரி விண்ணப்ப படிவத்தின்படி தனித்தனி விண்ணப்பங்களில் விண்ணப்பிக்க வேண்டும்.
- 2) நட்பில் மாநில அளவில் ஒரு நபருக்கு அதிகபட்சம் இரண்டு குவாரிகளுக்கு மட்டுமே குத்தகை உரிமம் வழங்கப்படும்.
- 3) இந்த அரசிதழின் அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது, குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண சுற்குவாரி இனங்களுக்கு 05 ஆண்டுகளும் புதியதாக சேர்க்கப்பட்டுள்ள சாதாரண சுற்குவாரி இனங்களுக்கு (Virgin quarry) 10 ஆண்டுகளும் ஆகும். குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிப்பிடப்படும் இறுதி நாளில் குத்தகை காலம் முடிவடையும், குத்தகை காலம் எக்காரணத்தைக்கொண்டும் நீட்டிக்கப்பட மாட்டாது.
- 4) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்துடன் கீழ்க்கண்டவற்றை இணைத்து அனுப்ப வேண்டும்.
  - (அ) திரும்ப வழங்க இயலாத விண்ணப்பக் கட்டணமாக ரூ.1500/-க்கான கேட்பு வரைவோலையை (டிமாண்ட் டிராப்ட்) ஏதேனும் ஒரு தேசிய மயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று அல்லது அரசு கருவூலத்தில் செலுத்திய அசல் சலான் இணைக்க வேண்டும்.
  - (ஆ) பிணை வைப்புத்தொகை (Earnest money deposit) ரூ.25000/- (ரூபாய் இருபத்தைந்தாயிரம் மட்டும்)க்கான கேட்பு வரைவோலை ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று இணைக்க வேண்டும். தனிநபர் பெயருக்கு எடுத்து கொடுக்கப்படும் வங்கி வரைவோலை ஏற்றுக்கொள்ளப்படமாட்டாது குத்தகை உரிமம் வழங்கப்படுபவர் செலுத்த வேண்டிய டெண்டர்/ ஏலத் தொகையில் இந்த தொகை பின்னர் சரி செய்து கொள்ளப்படும்.
  - (இ) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறித்துள்ள மொத்த குத்தகை தொகையில் 10 சதவீதத் தொகைக்கான கேட்பு வரைவோலை (டிமாண்ட் டிராப்ட்டை) துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று இணைக்க வேண்டும்.

(FF) மாவட்ட வாரியாக கனிம வாரியாக விண்ணப்பதாரர் / ஏலதாரர் நேரடியாகவோ அல்லது பங்குதாரராகவோ தொடர்புள்ள குவாரிகள் பற்றிய கீழ்க்கண்ட விவரங்கள் அல்லது ஆணையறுதி ஆவணம் (அபிட் விட்) மூலம் தெரிவிக்க வேண்டும்.

1. விண்ணப்பதாரருக்கு கனிம குத்தகையுள்ள மாவட்ட ஆட்சியரால் வழங்கப்பட்ட செல்லத்தக்க சுரங்கவரி நிலுவை இல்லா சான்றிதழ் அல்லது சுரங்கவரி நிலுவை இல்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்பட வேண்டும்.

2. வருமான வரி செலுத்திய சான்றிதழ் அல்லது வருமானவரி பாக்கியில்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்பட வேண்டும்.

3. மற்றும்,

i) அனுபவத்திலிருக்கும் குவாரி குத்தகை அனுமதி பற்றி விவரம்

ii) ஏற்கனவே விண்ணப்பித்து இதுவரை அனுமதி வழங்கப்படாத குவாரி குத்தகை அனுமதி பற்றி விவரம்.

iii) தற்போது உடனிகழ்வாக விண்ணப்பிக்கும் குவாரி குத்தகை அனுமதி விவரம்

4. மேற்கண்ட ஆணையறுதி ஆவணங்களை ரூ.20/- மதிப்புள்ள முத்திரைத்தாளில் சான்று உறுதி அலுவலரிடம் (Notary Public) கையொப்பம் பெற்று பூர்த்தி செய்யப்பட்ட விண்ணப்பத்துடன் இணைத்து சமர்ப்பிக்கப்பட வேண்டும்.

5) ஏலத்தில் நேரடியாக கலந்து கொள்பவர்கள் பூர்த்தி செய்யப்பட்ட விண்ணப்பப்படிவம், திருப்பித்தரப்படாத விண்ணப்பக்கட்டணம் ரூ.1500/- மற்றும் பிணை வைப்பத்தொகை ரூ.25000/- ஆகியவற்றிற்கான கேட்பு வரைவோலைகள் (டிமாண்ட் டிராப்ட்) துணை இயக்குநர், புலியேரி மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று ஏலத்தில் நேரடியாக கலந்து கொள்வதற்கு முன்னர் ஏலம் நடத்தும் அலுவலரிடம் சமர்ப்பிக்க வேண்டும். மேலும் ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச தொகை டெண்டர் மூலம் கோரப்பட்ட உயர்ந்த பட்ச தொகையைவிட அதிகமாக இருந்தால் ஏல முடிவு அறிவிப்பு செய்யப்பட்டவுடன் ஏலத்தொகையில் 10 சதவீதத் தொகையை உடன் ஏலம் நடத்தும் அலுவலரிடம் தேசிய மயமாக்கப்பட்ட ஏதேனும் ஒரு வங்கியில் பெறப்பட்ட கேட்பு வரைவோலையாகவோ அல்லது ரொக்க தொகையாகவோ செலுத்தி தக்க இரசீதுகள் பெற்றுக் கொள்ள வேண்டும்.

6) நேரில் விண்ணப்பங்கள் அளித்தால் அதைப்பெற்றுக் கொண்டதற்கான ஒப்புதல் கடிதம் அன்றைய தினமே வழங்கப்படும். தபால் மூலம் பெறப்படும் விண்ணப்பத்திற்கு ஒப்புதல் கடிதம் மூன்று தினங்களுக்குள் தபாலில் அனுப்பி வைக்கப்படும். டெண்டர் விண்ணப்பங்கள் மூடி முத்திரையிடப்பட்ட கவர்களில் மட்டுமே அனுப்பி வைக்கப்பட வேண்டும். கவரின் மேல்புறத்தில் விண்ணப்பதாரரின் பெயர் மற்றும் விலாசம் தெளிவாக குறிப்பிடப்பட வேண்டும். கவரின் இடது மூலையில் கனிமத்தின் பெயர், குவாரி அமைந்துள்ள கிராமம், புல எண், பரப்பு அரசிதழின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ள குவாரிகளின் பட்டியலில் உள்ள வரிசை எண் ஆகியவற்றை தவறாமல் குறிப்பிட வேண்டும்.



- 7) மாவட்ட ஆட்சியரால் அல்லது அவரால் அங்கீகாரம் வழங்கப்பட்ட அலுவலரிடம் உள்ள ஒரேயே பதினேட்டில் விண்ணப்பதாரர்கள் / ஏலதாரர்கள் கையொப்பமிட்ட பின்னரே ஏல ஆணைக்குள் அனுமதிக்கப்படுவார்கள்.
- 8) ஏலம் மற்றும் ஒப்பந்தப்புள்ளியில் (டெண்டர்) கலந்து கொள்பவர் செலுத்தும் விண்ணப்பத்தின் தொகை ரூ.1500/- திருப்பித்தரப்படமாட்டாது. ஏலத்தில் நேரிடையாக பங்குபெறுபவர்கள் கொடுக்கும் விண்ணப்பத்தில் குத்தகை தொகையை குறிப்பிட தேவையில்லை. ஏற்கனவே டெண்டர் விண்ணப்பம் கொடுத்தவர்கள் ஏலத்தில் கலந்துகொள்ள முடியாவிடில் அவருக்குப்பதிலாக அவரால் நியமிக்கப்பட்ட வேறு ஒரு நபர் மட்டுமே நோட்டரிபள்ளிக் முன்பு விண்ணப்பதாரர் மற்றும் நியமிக்கப்பட்ட நபர் கையெழுத்துக்கள் சான்றுபெறப்பட்ட உறுதிமொழி ஆவணம் (அபிடவிட்) தாக்கல் செய்வதின் பேரில் ஏலத்தில் கலந்து கொள்ள அனுமதிக்கப்படுவார்கள்.
- 9) ஒப்பந்தப்புள்ளி விண்ணப்பப்படிவத்தில் மனு செய்யும் நபர்கள் தாங்கள் மனு செய்யும் குவாரிக்கு குத்தகை தொகையாக செலுத்த விரும்பும் தொகையை விண்ணப்பத்தில் குறிப்பிடாமல் இருந்தாலோ அல்லது விண்ணப்ப கட்டணம், பிணைவைப்புத் தொகை, அதிகபட்சமாக குறிப்பிடும் குத்தகை தொகையின் 10% தொகை ஆகியவற்றிற்கான வங்கி வரைவோலைகளை விண்ணப்பத்துடன் இணைக்காமல் இருந்தாலோ, விண்ணப்பத்தாளரின் விண்ணப்பதாரர் தன் கையொப்பம் செய்யாமல் இருந்தாலோ 1959ஆம் வருடத்திய துயிர்நாடு சிறுகனிம சலுகை விதிகளில் கூறப்பட்ட சுரங்கவரி பாக்கியின்மை சான்றிதழ், வருமானவரி பாக்கியின்மை சான்றிதழ் அல்லது இவைகளுக்காக வழங்கப்படும் ஆணை உறுதி ஆவணம் மற்றும் ஏற்கனவே மனுதாரர் நேரடியாகவோ பங்குதாரராகவோ உள்ள குவாரிகள் தொடர்பான உறுதிமொழி ஆவணம் ஆகியவற்றை இணைக்கப்படாமல் இருந்தாலோ மேற்படி ஒப்பந்தப்புள்ளி விண்ணப்பம் விதிகளின்படி நிராகரிக்கப்படும். மேற்குறிப்பிட்டவாறு விண்ணப்பம் நிராகரிக்கப்பட்ட ஒப்பந்தப்புள்ளி விண்ணப்பதாரர்களுக்கு ஒப்பந்தப்புள்ளிகள் திறக்கும் சமயத்தில் விண்ணப்பதாரர் ஆஜரில் இருந்தால் மட்டும் விண்ணப்பதாரரிடம் தக்க ஒப்பதல் பெற்று வங்கிவரைவோலை திருப்பி வழங்கப்படும். ஒப்பந்தப்புள்ளி திறக்கும் சமயத்தில் ஆஜரில் இல்லாத நபருக்கு பதிவஞ்சல் மூலம் வங்கி வரைவோலைகள் தனியே அனுப்பி வைக்கப்படும்.
- 10) ஒவ்வொரு குவாரிக்கும் பொது ஏலம் நடத்தி முடித்த பின்னர் சம்பந்தப்பட்ட குவாரிக்கான டெண்டர் விண்ணப்பங்கள் வருணக் தந்திருக்கும் சம்பந்தப்பட்ட டெண்டர் விண்ணப்பதாரர்கள் மற்றும் ஏலதாரர்கள் அல்லது அவர்களது அதிகாரம் பெற்ற நபர்கள் முன்னிலையில் சம்பந்தப்பட்ட அதிகாரிகளால் திறக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) திறக்கும் நேரத்தில் விண்ணப்பதாரர் அல்லது ஏலதாரர் அல்லது அங்கீகாரம் பெற்ற நபர் ஆஜரில் இல்லாததற்கு மாவட்ட நிர்வாகம் பொறுப்பு அல்ல. இதன்பொருட்டு ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் திறப்பதோ ஏலம் நடத்துவதோ நிறுத்தி வைக்கப்படமாட்டாது.
- 11) அட்டவணையில் கண்ட ஒவ்வொரு குவாரிக்கும் வரப்பெற்ற மொத்த செல்லத்தக்க விண்ணப்பங்கள், விண்ணப்பதாரர்களின் பெயர்கள் ஒவ்வொரு விண்ணப்பதாரராலும் குறிப்பிடப்பட்ட அதிகபட்ச டெண்டர் தொகை ஆகியவற்றையும் அதிகபட்ச தொகைக்கு ஏலம் கேட்ட நபர் பெயர் மற்றும் அதிகபட்ச ஏலத்தொகை ஆகியவற்றையும் ஏலம் முடிவடைந்தவுடன் அறிவிக்கப்படும். ஏலத்தொகை, ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறிப்பிடப்பட்டுள்ள குத்தகை (டெண்டர்) தொகையை விடகுறைவாக இருந்து ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் மூலமாக கோரப்படும் குத்தகை தொகைகள் ஒன்றுக்கும் மேற்பட்ட விண்ணப்பதாரர்களால் ஒரே மாதிரியாக குறிப்பிடப்பட்டிருந்தால் சம்பந்தப்பட்ட விண்ணப்பதாரர்களை மட்டும் அழைத்து சம்பந்தப்பட்ட குவாரிக்கு மட்டும் மறுகேட்பு மூலம் உயர் குத்தகை தொகை பெற நடவடிக்கை எடுக்கப்படும். அதிகபட்ச குத்தகைத் தொகை கோரும் நபர் அதிகபட்ச ஏலத்தொகை கோரிய நபராக அறிவிக்கப்படுவார். ஒவ்வொரு குவாரிக்கும் பெறப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களில் குறிப்பிடப்பட்டுள்ள அதிகபட்ச குத்தகைத்தொகை அல்லது பொது ஏலத்தின் மூலம் கேட்கப்படும் அதிகபட்ச குத்தகைத் தொகை இவற்றில் எது அதிகமோ அந்த தொகை மேற்கண்ட குவாரிக்கு கோரப்பட்ட அதிகபட்ச குத்தகை தொகை என அறிவிக்கப்பட்டு அதிகபட்ச குத்தகைத் தொகை குறிப்பிடவராக அறிவிக்கப்படுவார். அதிகபட்சத் தொகைக்கு டெண்டர்/ஏலம் மூலம் கேட்ட நபர் என உறுதி செய்யப்பட்டவுடன், டெண்டர்/ ஏலம்



கேட்ட நபர் அவரால் அதிகபட்சமாக கோரப்பட்ட தொகையில் பத்து சதவிகித தொகையினை கேட்பு வரைவேலையாகவோ / பணமாகவோ உடனடியாக செலுத்திடவேண்டும். அவ்வாறு செலுத்தத் தவறும் பட்சத்தில் அவரது ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவருக்கு அடுத்தபடியாக அதிகபட்சத்தொகை கேட்ட நபருக்கு வாய்ப்பளிக்கப்படும். அவரும் பத்து சதவிகித தொகையினை செலுத்த தவறும் பட்சத்தில் இதே நடைமுறையை தொடர்ந்து நடத்துவது அல்லது மறு ஏலம் விட ஆணையிடுவது போன்றவை மாவட்ட ஆட்சியரின் இறுதி முடிவு மற்றும் அதிகார வரம்பிற்கு உட்பட்டதாகும். அதிகபட்ச ஏலம் / டெண்டர் கேட்ட நபரை தவிர மற்றவர்களுக்கு அவர் தாம் செலுத்திய பிணைவைப்பத்தொகை திரும்ப தரப்படும். ஏலம் / டெண்டர் உறுதி செய்யப்பட்ட நபர் மீதமுள்ள 90 சதவிகித தொகையினை பதினைந்து (15) தினங்களுக்குள் செலுத்திவிட வேண்டும், தவறும் பட்சத்தில் ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவர் செலுத்திய அனைத்து தொகைகளும் பறிமுதல் செய்து அரசு கணக்கில் சேர்க்கப்படும்.

12) (அ) சிறப்பு நிபந்தனைகள்:

- (i) இந்த டெண்டர் மற்றும் ஏலமுறையில் கலந்து கொள்ளும் விண்ணப்பதாரர்கள் அனைவரும் இந்திய அரசின் வருமான வரித்துறையினரால் வழங்கப்படும் நிரந்தர கணக்கு எண் (PAN - CARD) அட்டையை பெற்றிருக்க வேண்டும் அல்லது வருமான வரி துறையினரிடமிருந்து பெற்று சமர்ப்பிக்க வேண்டும்.
- (ii) இந்த நிரந்தர கணக்கு எண்ணை சமர்ப்பித்து டெண்டர் மற்றும் ஏலம் கோரும் தொகைக்கு 2% வருமான வரியை கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அவர்களுக்கு வருமான வரித்துறையினரால் அளிக்கப்பட்டுள்ள TAN.No.CHED05905E-ன் கீழ் உரிய வருமானவரித்துறை செலுத்துச்சீட்டின் மூலம் செலுத்த வேண்டும்.
- (iii) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொரு முறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 2% வருமான வரி தொகை செலுத்தவேண்டும்.
- (iv) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டு பெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவிகித தொகையை கிருஷ்ணகிரி மாவட்ட கனிம அறக்கட்டளை நிதியாக கிருஷ்ணகிரி பாரத மாநில வங்கி (State Bank of India) கணக்கு எண்.37243080996-ல் செலவான மூலம் செலுத்த வேண்டும்.
- (v) அரசாணை எண்.23 தொழில் (எம்.எம்.சி.1) துறை நாள்:23.02.2022-ன்படி பசுமை வரியாக உள்மாநிலங்களில் கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 10 சதவிகிதம் அல்லது வெளி மாநிலங்களுக்கு கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 20 சதவிகிதம் உரிய அரசு கணக்கில் செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

13). குவாரி குத்தகை கோரி ஒரே ஒரு மறைமுக டெண்டர் மனு கொடுக்கப்பட்டு திறந்த முறை பொது ஏலத்தில் கலந்து கொள்ள யாரும் முன்வரவில்லையெனில், டெண்டர் தொகை அரசுக்கு ஆதாயமானது என்று உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) கருதினால், அந்த டெண்டர் மனுதாரருக்கு குவாரி குத்தகை வழங்க உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) ஒப்புதல் அளிக்கலாம். டெண்டர் தொகை அரசுக்கு ஆதாயமானதல்ல என்று உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) கருதும் பட்சத்தில், மனுவைத் தள்ளுபடி செய்து ஆணையிடப்பட்டு மறு ஏலத்தின் மூலம் குவாரி குத்தகை வழங்க மேல்நடவடிக்கை எடுக்க மாவட்ட ஆட்சியர்க்கு அதிகாரம் உண்டு.



- 14) மாண்புமிகு இந்திய உச்சநீதிமன்றம் வழக்கு எண் ஐ.ஏ 12-13/2012 எஸ்.எஸ்.பி. (சி) எண் 19628 கிரி 19829/2009 ஆகியவற்றின் மீது 27.02.2012 அன்று வழங்கியுள்ள ஆணைகளின்படி, இந்திய அரசு சுற்றுச்சூழல் மற்றும் வனத்துறை குறிப்பாணை எண். எல்.11011/47/2011 - IA. II(M) நாள்: 18.05.2012ன்படி, அரசாணை எண். (எம்எஸ்)எண். 79, தொழில் (எம்எம்சி1) துறை நாள்: 06.04.2015ன்படி 1959ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் திருத்தம் செய்யப்பட்டு சேர்க்கப்பட்ட விதிகள் எண். 41 மற்றும் 42-ன் படி அனைத்து சிறுகனிம குவாரிகளுக்கும் குவாரி குத்தகை வழங்கும் முன்பு புவியியல் மற்றும் சுரங்கத் துறை துணை இயக்குநரால் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் இந்திய அரசின் சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தால் வழங்கப்படும், மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் / இசைவு ஆகியவற்றை பெற்று சமர்ப்பித்த பின்பு மட்டுமே குவாரி குத்தகை வழங்க முடியும். குவாரி பணி தொடங்குவதற்கு முன்பாக தமிழ்நாடு மாசு கட்டுப்பாட்டு வாரியத்தின் இசைவினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி பணி தொடங்க அனுமதிக்கப்படும்.
- 15) அதிகபட்சத் தொகை கேட்ட நபருக்கு குவாரி குத்தகை உரிமம் உறுதி செய்யப்படுமாயின் அவருக்கு குவாரி குத்தகை உரிமம் வழங்கப்படவுள்ள குவாரியின் புல எண், பரப்பளவு, ஆகிய விவரங்கள் அடங்கிய அறிவிக்கை வழங்கப்பட்டு அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல் மற்றும் வனத்துறையின் தடையின்மை சான்று ஆகியவற்றை விதிகளின்படி உரிய காலத்திற்குள் சமர்ப்பிக்குமாறு தெரிவிக்கப்படும்.
- (அ) மேற்கண்ட அறிவிக்கை பெற்றுக்கொண்ட மனுதாரர் சுரங்கத்திட்டத்தை தகுதி வாய்ந்த நபர் (QP) மூலம் அரசு தெரிவித்துள்ள விதிகள் மற்றும் வழிகாட்டுதலின்படி தயாரித்து அறிவிக்கை பெறப்பட்ட நாளிலிருந்து மூன்று மாத காலத்திற்குள் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரிடம் அங்கீகாரம் பெற சமர்ப்பிக்க வேண்டும்.
- (ஆ) மேற்கண்ட மனுதாரர் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரால் அங்கீகாரம் வழங்கப்பட்ட சுரங்கத்திட்டத்தை இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் முன்பு சமர்ப்பித்து தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்றினை பெற்று சமர்ப்பிக்க வேண்டும்.
- (இ) காவேரி வடக்கு வனவிலங்கு சரணாலயம், தேசிய பூங்கா, யானைகளின் வலசை பாதை மற்றும் காப்பு காடுகளிலிருந்து பாதுகாப்பு இடைவெளி தூரத்திற்கு அப்பால் மட்டுமே குத்தகை உரிமம் வழங்க நடவடிக்கை எடுக்கப்பட்டுள்ளது. எனினும், அரசால் மாற்றி அமைக்கப்படும் பாதுகாப்பு இடைவெளி தூரத்திற்குள் குவாரி பகுதி வருவதாக பிற்காலத்தில் தெரியவந்தால் குத்தகை உரிமம் ரத்து செய்ய மேல்நடவடிக்கை தொடரப்படும்.
- (ஈ) அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் முதல் ஐந்து ஆண்டு காலத்திற்கு மட்டுமே செல்லத்தக்கதாகும்.
- (உ) மேற்கண்ட ஆவணங்களை சமர்ப்பித்த பின்பு விதிகளின்படி மனுதாரருக்கு குவாரி குத்தகை வழங்கி ஆணையிடப்படும். அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் தடையின்மை சான்று ஆகியவற்றை குறிப்பிட்ட காலக்கெடுவிற்குள் சமர்ப்பிக்க தவறினால் மனுதாரருக்கு மாவட்ட ஆட்சியர் முன்பு விசாரணைக்கு ஆஜராக வாய்ப்பளித்து விசாரணை நடத்தப்பட்டு ஏற்கனவே வழங்கப்பட்ட உத்தரவு ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- 16) மேற்கூறிய உத்தரவு கிடைக்கப் பெற்றவுடன் விண்ணப்பதாரர், ஆணையில் குறிப்பிடப்பட்ட காலக்கெடுவிற்குள் கீழ்க்கண்ட ஆவணங்களை குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றுவது தொடர்பாக துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களிடம் சமர்ப்பிக்க வேண்டும்.
- (அ) விண்ணப்பதாரரின் கையொப்பமிட்ட வரைவு குத்தகை ஒப்பந்தப்பத்திரம் மற்றும் வரைபடம்.

- (ஆ) அசல் குத்தகை ஒப்பந்தப்பத்திரம் தயார் செய்வதற்கு தேவையான நீதித்துறை சாரா முத்திரைத்தாள்.
- (இ) காப்புத் தொகைக்கான ஏலம் / டெண்டர் தொகையில் இருபது சதவீதம் (20%) அல்லது ரூ.10,000/-ம் இதில் எது அதிகமோ அதை செலுத்தியதற்கான அசல் செலுத்துச்சீட்டு (சலான்).
- (ஈ) மொத்த குத்தகை பரப்பிற்கான பரப்புலரி செலுத்தியதற்கான அசல் சலான்.
- 17) அவ்வாறு குறிப்பிட்ட காலத்திற்குள் மேற்கண்ட ஆவணங்களை சமர்ப்பிக்க தவறினால் வழங்கப்பட்ட குத்தகை உரிமம் ரத்து செய்யப்பட்டு அவர் செலுத்திய அனைத்து தொகைகளும் விதிகளின்படி அரசுக்கு ஆதாயம் செய்து அரசு கணக்கில் சேர்க்கப்படும்.
- 18) மேற்கண்ட ஆவணங்களை ஒப்படைத்து குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றிய பின்பே குவாரிப்பணியை தொடங்க வேண்டும். குவாரி குத்தகை ஆவணம் நிறைவேற்றுமுன் குவாரிப்பணி செய்வது கண்டறியப்பட்டால் அது அனுமதியின்றி கனிமம் வெட்டியெடுத்ததாக கருதப்பட்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி 36-அ -ன்படி உரிய நடவடிக்கை எடுக்கப்படுவதுடன் குற்றவியல் நடவடிக்கையும் எடுக்கப்படும்.
- 19) குவாரி குத்தகைக்காக கோரப்பட்ட மொத்த குத்தகை காலத்திற்குமான ஒரே தடவையில் மொத்தமாக செலுத்தப்படும் குத்தகைத் தொகை நீங்கலாக குத்தகைதாரர் மேற்படி குவாரியில் இருந்து எடுத்துச்செல்ல உத்தேசிக்கும் சிறுகனிமத்திற்கு 1959ம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் அட்டவணை 2ல் குறிப்பிடப்பட்டுள்ள விகிதாச்சாரப்படி சீனியரேஜ் கட்டணத்தை செலுத்தி மொத்த இசைவாணைச்சீட்டு மற்றும் அனுப்புகைச் சீட்டு பெற்றுநான் சிறுகனிமத்தினை எடுத்துச் செல்ல வேண்டும். மேலும் அரசால் அல்லப்போது திருத்தி நிர்ணயிக்கப்படும் சீனியரேஜ் தொகையை செலுத்தி அனுமதிச்சீட்டுப்பெற வேண்டும். மேலும் கனிமங்களை வெளியில் எடுத்துச் செல்ல போக்குவரத்து அனுமதிச்சீட்டு பெற ஒவ்வொரு முறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவீத தொகையை கிருஷ்ணகிரி மாவட்ட கனிம அறக்கட்டளை நிதியாக கிருஷ்ணகிரி பாரத மாநில வங்கி (State Bank of India) கணக்கு எண்.37243080996-ல் செலவான மூலம் செலுத்த வேண்டும். மேலும் கூடுதலாக அரசால் நிர்ணயிக்கப்பட்ட பசுமை வரியை உரிய அரசு கணக்கில் செலுத்தி அசல் சலான் சமர்ப்பிக்க வேண்டும்.
- 20) குத்தகைதாரர் ஒவ்வொரு மாதமும் குவாரிப்பணி செய்த தொழிலாளர்கள், குவாரி செய்த கனிமத்தின் அளவிற்குரிய கணக்குகளை பிரதி மாதம் ஐந்தாம் நாளுக்குள் துணை இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களுக்கு தணிக்கைக்கு ஆஜர் செய்ய வேண்டும்.
- 21) குவாரிகளுக்கு அருகில் உள்ள போக்குவரத்து சாலைகள், கிராம சாலைகள் குடியிருப்பு பகுதிகள் வீடுகள், வண்டிப்பாதைகள், மின் மற்றும் தொலைபேசி கம்பிகள், டிரான்ஸ்பார்மர்கள், ரயில்பாதைகள் பொதுப்பணித்துறை, வாய்க்கால், மதசம்பந்தமான வழிபாட்டுத்தலங்கள் மற்றும் இதர நிலையான அமைப்புகள் இவற்றிலிருந்து 1959ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின்படி பாதுகாப்பு இடைவெளி விட்டு மீதமுள்ள இடத்திற்குள் தான் குவாரிப்பணி செய்யவேண்டும். பொதுமக்கள் உபயோகிக்கும் இடங்கள் குடியிருப்புக்கள் பட்டா நிலங்கள் அல்லது பொதுச் சொத்துக்கள் ஆகியவற்றிற்கு சேதம் ஏதும் ஏற்படாமல் குவாரிப்பணி செய்ய வேண்டும். குவாரி பணியால் சேதம் ஏதும் ஏற்பட்டால் அதற்கு குத்தகைதாரரே முழு பொறுப்பேற்று அதில் ஏற்படும் நட்டத்தை ஈடு செய்து தரவேண்டும்.
- 22) குத்தகைதாரரை மேற்குறிப்பிட்ட நிபந்தனைகள் அல்லாமல் 1959ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், கனிமங்கள் மற்றும் சுரங்கங்கள் (மேம்படுத்துதல் மற்றும் முறைப்படுத்துதல்) சட்டம் 1957 மற்றும் இந்த அரசிதழில் குறிப்பிடப்பட்டுள்ள சிறப்பு நிபந்தனைகள் மற்றும் அரசால் அல்லப்போது கொண்டுவரப்படும் ஆணைகளும் விதிகளும் கட்டுப்படுத்தும்.





- 23) இவ்விதிகளின்கீழ் வழங்கப்படும் குவாரிகளின் குத்தகை காலம் எக்காரணத்தைக் கொண்டும் குத்தகை வழங்கப்பட்ட காலத்திற்கு மேல் நீட்டிக்கப்படவோ அல்லது குத்தகை காலம் பூர்த்திக்கப்படவோ மாட்டாது. குத்தகை காலம் முடிந்தபின் குத்தகைதாரர்கள் குத்தகைக்கு விடப்பட்ட பகுதிகளில் எவ்விதமான உரிமையும் கொண்டாடக் கூடாது. மேலும், குத்தகை காலம் முடிந்தபின் மேற்கண்ட புலத்தை அரசுக்கு திரும்ப ஒப்படைத்து அதற்கான சான்றிதழை கிராம நிர்வாக அலுவலரிடம் பெற்று வட்டாட்சியர் வாயிலாக மாவட்ட ஆட்சியருக்கு தெரிவிக்க வேண்டும்.
- 24) 14 வயதுக்குட்பட்ட குழந்தை தொழிலாளர்களை குவாரிப்பணியில் ஈடுபடுத்தக்கூடாது.
- 25) இந்த அரசிதழில் குவாரி குத்தகை உரிமத்திற்காக அறிவிக்கப்பட்டிருக்கும் பட்டியலில் உள்ள குத்தகை விடப்படும் குவாரிகளை டெண்டர் / ஏலம் நடைபெறுவதற்கு முன்பாக நிறுத்தி வைக்கவோ, நீக்கவோ, புதியதாக சேர்க்கவோ குவாரி பரப்பளவை மாற்றவோ, மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.
- 26) நிர்வாக சூழல் காரணமாக டெண்டர் மற்றும் ஏலத்தை ரத்து செய்ய மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.
- 27) செய்தித்தாள் மூலமாகவோ, மாவட்ட அரசிதழ் மூலமாகவோ, அறிவிப்பு செய்யப்படாத குவாரிகளுக்கு ஏதாவது ஒப்பந்தப்புள்ளி விண்ணப்பங்கள் கிடைக்கப் பெற்றால் அவையாவும் முதிர்ச்சி அடையாத விண்ணப்பமாக கருதப்பட்டு உடனடியாக நிராகரிக்கப்படும். குறித்த காலக்கெடுவிற்குள் வந்து சேராத விண்ணப்பங்கள் காலவரையறை கடந்த விண்ணப்பமாக கருதப்பட்டு அவையாவும் நிராகரிக்கப்படும், நிராகரிக்கப்பட்ட விண்ணப்பங்களின் விண்ணப்ப கட்டணம் தவிர பிற வங்கி வரைவோலைகள் மட்டும் விண்ணப்பதாரருக்கு திரும்ப அனுப்பி வைக்கப்படும்.
- 28) 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் அட்டவணைப் படிவம்-1ல் கண்ட ஒப்பந்தப்பத்திரத்தில் தேவையான அளவிற்கு நிபந்தனைகளை புதியதாக சேர்க்கவோ, நீக்கவோ மாற்றி அமைக்கவோ அரசுக்கு அதிகாரம் உண்டு, குத்தகை பத்திரம் ஏற்படுத்தியபின்பு புல எண் மற்றும் குவாரி செய்ய ஒதுக்கப்பட்ட பரப்புக்குறித்து எவ்வித தரவாவும் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.
- 29) குத்தகை ஒப்பந்தப்பத்திரத்தை புலவரைபடத்துடன் சொத்து மாற்றுரைசு சட்டம் 1882-ன் பிரிவு 107ன் கீழ் குத்தகைதாரர் தனது சொந்த செலவில் பதிவுசெய்து பதிவு செய்த ஒப்பந்தப்பத்திரத்தினை கிருஷ்ணகிரி புலியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகத்தில் உடன் ஒப்படைக்க வேண்டும்.
- 30) தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதி 36(1)ல் வரையறுக்கப்பட்டுள்ளவாறு அருகிலுள்ள குடியிருப்புகளுக்கு பாதுகாப்பு இடைவெளியாக 300 மீட்டரும் கிராம சாலைகளுக்கு 10 மீட்டரும் இதர சாலைகள் கட்டிடங்கள், வழிபாட்டு தலங்கள், மின்கம்பி பாதைகள், தொலைபேசி பாதைகள், புகைவண்டிப்பாதைகள், டிரான்ஸ்மார்மர்கள், ஆறு, ஏரி, குளம், குட்டை மற்றும் இதர பொது சொத்துக்கள் ஆகியவற்றிற்கு பாதுகாப்பு இடைவெளியாக 50 மீட்டரும் விட்டு மீதமுள்ள இடத்திற்குள்ள்தான் குவாரிப்பணி செய்யப்பட வேண்டும். புராதன சின்னங்களுக்கு தொல்லியல் துறையால் வரையறுக்கப்பட்டுள்ள பாதுகாப்பு இடைவெளி விட்டும் குவாரிப்பணி செய்ய வேண்டும். விதிகளின்படி தொல்லியல் சிள்களங்களுக்கு 500 மீட்டர் பாதுகாப்பு இடைவெளி விட்டும், வனவிலங்கு சரணாலயம், தேசிய பூங்கா, யானைகளின் வலசை பாதை மற்றும் காப்புக்காடுகளுக்கு ஒரு கிலோ மீட்டர் பாதுகாப்பு இடைவெளிவிட்டும் குவாரி பணி செய்ய வேண்டும். பொதுமக்கள் உபயோகிக்கும் இடங்களான குடியிருப்புகள் பட்டா நிலங்கள் மற்றும் இதர பொதுசொத்துக்கள் ஆகியவற்றிற்கு சேதம் ஏதும் நேரிட்டால் அதற்கு குத்தகைதாரரே முழுபொறுப்பேற்று அதில் ஏற்படும் நட்டத்தை ஈடுசெய்து தரவேண்டும்.
- 31) நிர்வாக காரணம் மற்றும் பொது நலனை கருத்தில் கொண்டு குத்தகைக்கு விடப்பட்ட பரப்பினை பின்னர் குறைத்து நிர்ணயிக்கவும், குவாரி குத்தகையை ரத்து செய்யவும் அரசுக்கு அதிகாரம் உண்டு.

- 32) குத்தகைதாரர் 1959ஆம் வருடத்திய தமிழ்நாடு சிறுகணிய சலுகை விதிகளின்படியும் மாவட்ட அரசிதழில் கண்டுள்ள நிபந்தனைகளின்படியும் ஒப்பந்தப்பத்திர நிபந்தனைகளின்படியும் நடந்து கொள்ள கடமைப்பட்டவராவார். குத்தகைகாலத்தில் சட்டதிட்டங்கள் மற்றும் குவாரி குத்தகை நிபந்தனைகளுக்கு ஒப்பந்த விதிகளுக்கு முரண்பட்டு குத்தகைதாரர் நடந்து கொண்டால் குத்தகை ரத்துச் செய்யப்படுவதுடன் காப்புத்தொகை மற்றும் அவர் செலுத்திய அனைத்து தொகைகளும் அரசுக்கு பறிமுதல் செய்யப்படும். அக்குவாரிக்கு மீண்டும் குவாரி குத்தகை வழங்க நடவடிக்கை மேற்கொள்ளப்படும்.
- 33) குவாரி குத்தகை வழங்கப்பட்ட இடத்தில் சாதாரண கற்களை குவாரி செய்வதில் ஏற்படக்கூடிய நஷ்டங்களுக்கு அரசால் எவ்வித நஷ்டஈடும் வழங்கப்பட மாட்டாது.
- 34) வழங்கப்பட்ட குத்தகை உரிமத்திற்கு பொதுமக்கள் மற்றும் அரசு துறை மூலம் கடுமையான ஆட்சேபம் இருப்பின் பொது நன்மையை கருதி குத்தகையை ரத்துச் செய்ய நேரிட்டால் அதனால் ஏற்படும் இழப்பிற்கு ஈடுகோர குத்தகைதாரருக்கு உரிமை இல்லை.
- 35) குத்தகைதாரர் குவாரியை வேறு யாருக்கும் மாற்றவோ உள் குத்தகைக்கு விடவோ கூடாது. அப்படி ஏதாவது செய்திருப்பது தெரிய வந்தால் மேற்படி குத்தகை ரத்துச் செய்யப்படுவதுடன் குத்தகைதாரர் செலுத்திய தொகையும் அரசுக்கு ஆதாயம் செய்யப்படும்.
- 36) குத்தகைதாரர், புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அலுவலகத்தில் அரசு குறிப்பிட்ட படிவத்தில் அனுப்புபுகைச் சீட்டுக்களை அச்சிட்டு சமர்ப்பிக்க வேண்டும். குத்தகைதாரர் சிறுகணியம் எடுத்து செல்லும் வாகனத்துடன் அனுப்புபுகைச் சீட்டு கொடுத்து அனுப்ப வேண்டும். இந்நடைச்சீட்டை இரு பிரதிகள் அச்சிட்டு வரிசை எண்ணிட்டு தாங்கள் உத்தேசமாக எடுக்க இருக்கும் லோடுகளுக்கு லோடு ஒன்றுக்கு ஒரு சீட்டு வீதம் கணக்கிட்டு அதற்குரிய சீரியரேஜ் தொகையினை செலுத்திய பின்னர், கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநரிடம் அனுப்புபுகைச்சீட்டு மற்றும் மொத்த இசைவாணைச் சீட்டு ஆகியவற்றில் உரிய முத்திரையும் கையொப்பமும் பெற்றபின்வே பயன்படுத்த வேண்டும்.
- 37) ஒப்புதல் பெறப்படாத அனுப்புபுகைச்சீட்டுடன் கணியம் கொண்டு செல்லும் வாகனங்கள் அதிலுள்ள சிறுகணியத்தை முறையற்ற வகையில் எடுத்துச்செல்வதாக கருதப்பட்டு உரிய சட்டத்தின்படி உரிய அலுவலர்களால் கைப்பற்றப்பட்டு அபராதம் விதிக்கப்படும்.
- 38) புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்கள், காவல் துறையினர் அல்லது வருவாய்த்துறை அலுவலர்கள் முதலானோர் தணிக்கை செய்யும்போது உரிய கணக்குகள் மற்றும் அனுப்புபுகைச் சீட்டு முதலானவைகளை குவாரி குத்தகை உரிமம் பெற்ற குத்தகைதாரர் காண்பிக்க வேண்டும்.
- 39) அரசு அலுவலர்கள் தணிக்கை செய்யும் போது சிறுகணியங்கள் கொண்டு செல்லும் வாகனங்களை தணிக்கைக்கு உட்படுத்த வாகன ஓட்டுனர்களை குத்தகைதாரர்கள் அறிவுறுத்த வேண்டும்.
- 40) அனுப்புபுகைச்சீட்டில் உள்ள கலங்கள் பூர்த்தி செய்யப்படாமலோ அல்லது தவறாக எழுதப்பட்டு வாகனங்களுக்கு கொடுக்கப்பட்டிருந்தாலோ சிறுகணியம் கொண்டு செல்லும் வாகன உரிமையாளருக்கு அபராதம் மற்றும் குற்றவியல் நடவடிக்கை எடுக்கப்படும். மேலும், குவாரி குத்தகையை ரத்து செய்ய நடவடிக்கை மேற்கொள்ளப்படும்.
- 41) குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் எவ்வளவு சிறுகணியங்கள் வெட்டி எடுக்கப்பட்டது என்பதையும் எந்த அளவு கணியங்கள் வளி, வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விவரத்தையும் காட்டும் பதிவேடு பராமரிக்க வேண்டும். குவாரி குத்தகை சம்பந்தமான இतर பதிவேடுகளை பராமரிக்க வேண்டும்.



- 42) அரசு மற்றும் மாவட்ட ஆட்சியரால் குவாரி குத்தகை உரிமம் சம்பந்தமாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்ட திட்டங்களுக்கும், நிபந்தனைகளுக்கும் குத்தகைதாரர்கள் கட்டுப்பாட்டு நடக்க வேண்டும். குத்தகை காலத்திலே அல்லது அதற்குப்பின்னரே கிராமம் தவறி குத்தகையை உடையிருக்கின்றவர்களை ஏற்படும் சகல நடவடிக்கைகளுக்கும் குத்தகைதாரர்கள் பொறுப்பேற்க வேண்டும். இதற்காக விதிக்கப்படும் அபராதம் மற்றும் குற்றவியல் நடவடிக்கைக்கு கட்டுப்பாட்டு நடக்க வேண்டும்.
- 43) குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகையை ரத்துச் செய்யவோ செய்யப்பட்ட தவறுகளுக்கு குத்தகைதாரருக்கு தண்டனை விதிக்கவோ கிரிமினல் வழக்குதொடரவோ அரசுக்கு அதிகாரம் உண்டு. குத்தகை ரத்துச் செய்யப்பட்டால் காப்புத் தொகை உள்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயம் செய்யப்படும். வழங்கப்பட்ட குத்தகை உரிமத்தை எக்காரணத்திற்காவது ரத்துச்செய்யும் பட்சத்தில் அதனால் ஏற்படும் எவ்விட நடவடிக்கைகளுக்கும் அரசு பொறுப்பல்ல. குத்தகை எடுத்தவர் எந்த காரணத்தை முன்னிட்டும் தனக்கு இழப்பு ஏற்பட்டால் நஷ்டஈடு கேட்கக்கூடாது.
- 44) குத்தகை எடுத்தவர் குத்தகையை அனுபவிக்காமல் விட்டாலும், செலுத்தப்பட்ட குத்தகை தொகை எக்காரணத்தை முன்னிட்டும் திரும்ப வழங்கப்படமாட்டாது.
- 45) குவாரிகளின் எல்லைகள் பற்றி பிரச்சினைகள் ஏற்பட்டால் மாவட்ட ஆட்சியரின் தீர்ப்பே இறுதியானது.
- 46) கற்குவாரி குத்தகை உரிமம் வழங்கப்பட்ட பின்னர் அக்கற்குவாரியின் ஏதாவது ஒரு பகுதியில் வரலாற்று முக்கியத்துவம் வாய்ந்த புரதானக்கால கல்வெட்டுக்கள், சிற்ப வடிவமைப்புகள் போன்றவைகள் காணப்பட்டால் அது குறித்து அரசுக்கு தகவல் தரவேண்டும். மேலும், அப்பகுதியில் கற்கள் உடைப்பது நிறுத்தப்பட்டு அப்பராதன சின்னங்கள் பாதுகாக்கப்பட வேண்டும்.
- 47) டெண்டரில் கோரப்படும் புல எண்களின் பேரில் எவையேனும் நீதிமன்றத்தின் ஆணை / தடையாணை முதலானவை நீதிமன்றத்தில் பெறப்பட்டதாக தெரியவந்தால் அவைகள் மீது குத்தகை உரிமம் வழங்குவதில் மாவட்ட ஆட்சியரின் முடிவே இறுதியானது.
- 48) குத்தகைதாரர் குத்தகை வழங்கப்பட்ட குவாரி முகப்பில் குவாரியின் புல எண் பரப்பு குத்தகைதாரர் பெயர் குத்தகை வழங்கப்பட்ட செயல்முறை ஆணை எண் குத்தகை தொகை, குத்தகை காலம் போன்ற விவரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தனது சொந்த செலவில் வைத்து குத்தகை காலம் முழுதும் பராமரிக்க வேண்டும்.
- 49) குத்தகைதாரர் குவாரியின் எல்லைகளை தெளிவாக தெரியும்படி வண்ணமிட்ட எல்லைக் கற்களை (DGPS) முறையில் அளவிட்டு செய்து ஊன்றி அடையாளமிட்ட பின்பே குவாரி செய்ய வேண்டும். எல்லை கற்களை குத்தகை காலம் முழுவதும் தனது சொந்த செலவில் நன்கு பராமரிக்க வேண்டும்.
- 50) குத்தகைக்கு வழங்கப்பட்ட கற்குவாரிகளில் சாதாரண கற்கள், கட்டுக்கல், சக்கை கற்கள், ஐல்வி கற்கள் ஆகியவைகளை மட்டுமே குவாரி செய்ய வேண்டும். அயல் நாட்டிற்கு ஏற்றுமதி செய்வதற்கும் மெருகு ஏற்றுமதிக்கும் பயன்படும் வடிவமைக்கப்பட்ட கற்களை உற்பத்தி செய்யக் கூடாது.
- 51) குவாரியில் வெடி வைத்து கற்களை உடைக்க அங்கீகாரம் பெற்ற வெடிபொருள் விற்பனையாளரிடம் (Licenced Explosive Dealer) வெடிபொருட்களை கொள்முதல் செய்து சான்று பெற்ற வெடி வெடிப்பவரைக் (Licenced shot Firer) கொண்டு அனைத்து பாதுகாப்பு நிபந்தனைகளையும் கடைபிடித்து வெடிகளை வெடிக்க வைக்க வேண்டும்.
- 52) குவாரியில் சாதாரண ஏர் கம்பர்சர்களை கொண்டு துளையிட்டு வெடிவைக்க வேண்டும். ஆழ்துளை கிணறு உபகரணங்களை (Rig Bore) கொண்டு துளையிட்டு வெடிவைக்கக்கூடாது. அருகிலுள்ள விவசாய நிலங்கள், பொதுச்சொத்துக்கள் மற்றும் பொதுமக்கள் ஆகியோருக்கு எவ்வித பாதிப்பும் ஏற்படாமல் குவாரி பணி செய்ய வேண்டும்.

- 53) அரசு / ஆணையர் புவியியல் மற்றும் சுரங்கத்துறை மற்றும் மாவட்ட ஆட்சியரால் இது தொடர்பாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்டதிட்டங்களுக்கும் நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பட்டு நடக்க வேண்டும்.
- 54) 1961 ஆம் ஆண்டின் மெட்டாலிபெரஸ் மைன்ஸ் ரெகுலேஷன்ஸ், 1936 ஆம் ஆண்டின் சம்பளம் வழங்குதல் சட்டம், 1884 ஆம் ஆண்டின் இந்திய வெடிபொருட்கள் சட்டம், 1864 ஆம் ஆண்டு குறைந்தபட்ச ஊதியச்சட்டம் ஆகியவற்றிற்கு உட்பட்டு குத்தகைதாரர் கனிமங்கள் வெட்டி எடுத்து வெளியேற்ற வேண்டும்.
- 55) குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இதர நபர்களுக்கு விபத்து ஏற்படின் அதற்கான முழுப் பொறுப்பையும் குத்தகைதாரரே ஏற்க வேண்டும். அதற்கு எவ்வகையிலும் அரசு பொறுப்பாகாது. மேலும், குவாரி தொழிலாளர்களை அரசின் கார்பீட்டு திட்டத்திலும் தொழிலாளர் நல வாரியத்தில் பதிவு செய்திடல் வேண்டும்.
- 56) குவாரி தொடர்பான அனைத்து பணிகளும் சுற்றுச்சூழல் இசைவாணையில் தெரிவிக்கப்பட்ட காலத்தில் மட்டுமே செயல்படுத்தப்பட வேண்டும்.
- 57) சாதாரண கற்குவாரி உரிமம் தொடர்பான டெண்டர் / ஏலம் உறுதி செய்யப்பட்ட விண்ணப்பதாரர் உரிய குவாரி குத்தகை பகுதிக்கு மாவட்ட வன அலுவலர், கிருஷ்ணகிரி / ஓசூர் அவர்களிடமிருந்து தடையின்மை சான்று பெற்று சமர்ப்பிக்க வேண்டும்.
- 58) அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தின்படி குவாரி பணி செய்யப்பட வேண்டும் குத்தகை காலத்தில் அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தில் குறிப்பிட்ட அளவை விட அதிகமான கனிமத்தை குவாரி செய்ய வேண்டியிருப்பின், திருத்தப்பட்ட சுரங்க திட்டம் சமர்ப்பித்து அங்கீகாரம் பெற்று அதற்கான சுற்றுச் சூழல் தடையின்மை சான்று சமர்ப்பித்த பின்பே அதனை செய்ய வேண்டும்.
- 59) குவாரி ஆரம்பிப்பது தொடர்பான அறிவிப்பை (Notice of opening) இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கு சமர்ப்பிக்க வேண்டும்.
- 60) குவாரியில் அங்கீகாரம் பெற்ற மைன்ஸ் மேனேஜர்/மைன்ஸ் மேட்/பிளாண்டர் ஆகியோர்களை பணியமர்த்திய பின்பே குவாரிப் பணியை தொடங்க வேண்டும்.
- 61) குவாரிப் பகுதியில் மைன்ஸ் மேட் கண்காணிப்பிலேயே வெடிவைத்து வெடிக்கும் பணியை செய்ய வேண்டும்.
- 62) குவாரிப் பகுதியில் விபத்து ஏதும் ஏற்பட்டால் அதனை உடனடியாக இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கும் கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அவர்களுக்கும் தெரிவிக்க வேண்டும்.

அட்டவணை - சாதாரண கற்குவாரி பட்டியல்

(i.) கிருஷ்ணகிரி வருவாய் கோட்டம்

கிருஷ்ணகிரி வட்டம்

வ. எண்	கிராமம்	புல எண்கள்	மொத்த பரப்பு	குவாரி குத்தகை வழங்கும் பரப்பு	வகைப்பாடு	குத்தகை உரிமம் காலம்
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			(ஹெக்டேர்)	(ஹெக்டேர்)		
1	ஜீஞ்சப்பள்ளி	169(பகுதி)	8.56.00	2.00.00	தீ.ஏ.த.பாறை	10
2	ஜீஞ்சப்பள்ளி	197/2(பகுதி)	1.77.00	1.20.00	தீ.ஏ.த தரிசு	10





(1)	(2)	(3)	13 (4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	(6)	(7)
3	பில்லனகூப்பம்	278	2.08.50	2.08.50	தீ.ஏ.த பாறை	10
பர்கூர் வட்டம்						
4	குலாமலை	54 (பகுதி-3)	16.45.0	1.40.00	தீ.ஏ.த பாறை	10
(ii) ஓசூர் வருவாய் கோட்டம்.						
ஓசூர் வட்டம்						
5	பஞ்சாட்சிபுரம்	603/1 (பகுதி-சி)	21.20.50	1.30.00	தீ.ஏ.த தரிசு	5
6	பஞ்சாட்சிபுரம்	603/1 (பகுதி-டி)	21.20.50	2.00.00	தீ.ஏ.த தரிசு	5
7	கோபனப்பள்ளி	220/1 (பகுதி-1)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
8	கோபனப்பள்ளி	220/1 (பகுதி-2)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
9	கோபனப்பள்ளி	220/1 (பகுதி-3)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
10	கோபனப்பள்ளி	220/1 (பகுதி-4)	16.76.00	2.00.00	தீ.ஏ.த தரிசு	10
11	கோபனப்பள்ளி	381 (பகுதி-1)	4.61.50	1.30.00	தீ.ஏ.த தரிசு	10
12	கோபனப்பள்ளி	381 (பகுதி-2)	4.61.50	1.50.00	தீ.ஏ.த தரிசு	10
சூளகிரி வட்டம்						
13	காமன்தொட்டி	616/3 (பகுதி-2)	7.66.50	2.75.00	தீ.ஏ.த தரிசு	5
14	காமன்தொட்டி	653/1(பகுதி)	7.56.00	3.35.00	தீ.ஏ.த தரிசு	5
15	காமன்தொட்டி	754 & 760 (பகுதி-6)	36.46.50	4.00.00	தீ.ஏ.த மலை	10
16	வெங்கடேசபுரம்	86-(பகுதி-1)	60.80.00	2.50.00	தீ.ஏ.த கரடு	5
17	வெங்கடேசபுரம்	86-(பகுதி-2)	60.80.00	2.00.00	தீ.ஏ.த கரடு	10
18	வெங்கடேசபுரம்	86-(பகுதி-3)	60.80.00	2.00.00	தீ.ஏ.த கரடு	5
19	பிளஸ்திம்பசந்திரம்	88/1 (பகுதி-3)	12.79.00	4.50.00	தீ.ஏ.த பாறை	10



(1)	(2)	(3)	(4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	(6)	(7)
20	தோரிப்பள்ளி	72(பகுதி) 87/1(பகுதி)	9.71.00 8.77.00	0.65.00 0.95.00	தீ.ஏ.த பாறை தீ.ஏ.த பாறை	10
			பொத்தம்	1.60.00		
21	துப்புகாணப்பள்ளி	420-(பகுதி-1)	46.61.00	4.00.00	தீ.ஏ.த கரடு	10
22	துப்புகாணப்பள்ளி	420-(பகுதி-3)	46.61.00	4.60.00	தீ.ஏ.த கரடு	10
23	துப்புகாணப்பள்ளி	420-(பகுதி-4)	46.61.00	4.50.00	தீ.ஏ.த கரடு	10
24	சென்னப்பள்ளி	327/1 (பகுதி-1)	38.78.00	2.45.00	தீ.ஏ.த கரடு	10
25	சென்னப்பள்ளி	327/1 (பகுதி-2)	38.78.00	2.45.00	தீ.ஏ.த கரடு	10
<b>தேன்கணிக்கோட்டை வட்டம்</b>						
26	தாரவேந்திரம்	320/1 (பகுதி)	2.23.00	1.70.50	தீ.ஏ.த தரிசு	10
27	நாகமங்கலம்	629 (பகுதி)	188.50.00	3.20.50	தீ.ஏ.த கல்லாங் குத்து	10

கிருஷ்ணகிரி,  
10-03-2022.

வி. ஜெய சந்திர பாணுரெட்டி,  
மாவட்ட ஆட்சியர்,  
கிருஷ்ணகிரி மாவட்டம்.

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S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

தமிழ்நாடு எழுதுபொருள் மற்றும் அச்சத்துறை ஆணையரால் சேலம் அரசினர் கிளை அச்சகத்தில் அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.



வனம் காப்போம்

**தமிழ்நாடு வனத்துறை**

**அனுப்புதல்**

செல்வி. க. கார்த்திகேயனி, இ.வ.ப.,  
வனஉயிரினகாப்பாளர்,  
ஒசூர் வனக்கோட்டம்,  
மத்திகிரி, ஒசூர் - 635 110.  
தொலைபேசி எண். 04344 296600.

**பெறுதல்**

மாவட்ட ஆட்சித் தலைவர்,  
கிருஷ்ணகிரி மாவட்டம்,  
கிருஷ்ணகிரி.

**ந.க.எண். 261/2022/எல் நாள். 10.02.2022**

(ஸ்ரீ பிலை வருடம், தை மாதம் 28, திருவள்ளூர் ஆண்டு 2052)

**அய்யா,**

**பொருள் :** கனிமங்களும் குவாரிகளும் - கிருஷ்ணகிரி மாவட்டம் - அரசு புலங்களில் உரிமம் முடிவடைந்த குவாரிகள் மற்றும் புதிய குவாரிகளை டெண்டர் மற்றும் பொது ஏலத்தில் கொண்டுவர வனப்பகுதி மற்றும் சரணாலயத்திற்கு உள்ள தொலைவு விவரம் மற்றும் இதர விவரங்கள் கோரியது - தொடர்பாக.

- பார்வை :**
1. அரசு ஆணை (நிலை) எண். 295 தொழிற் (எம்எம்சி.1) துறை நாள். 03.11.2021.
  2. துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி மாவட்டம் ந.க.எண்.817/2020/கனிமம் நாள். 31.12.2021 மற்றும் 04.02.2022.
  3. மாவட்ட ஆட்சித் தலைவர், கிருஷ்ணகிரி ந.க.எண்.817/2020/கனிமம் நாள். 04.02.2022.
  4. இவ்வலுவலக ந.க.எண். 261/2022/எல், நாள்.10.02.2022

\*\*\*\*\*

பார்வையின் கடிதங்களில் தெரிவிக்கப்பட்ட அரசு புலங்களில் உரிமம் முடிவற்ற குவாரிகள் மற்றும் புதிய குவாரிகளுக்கு டெண்டர் மற்றும் பொது ஏலத்தில் கொண்டுவர, வனப்பகுதி மற்றும் சரணாலயப் பகுதியிலிருந்து உள்ள தொலைவு விவரம் கோரப்பட்டுள்ளது. இது தொடர்பான விவரம் பின்வருமாறு தெரிவிக்கப்படுகிறது.

குவாரி அனுமதிக்கான வனத்துறையின் குறிப்புரையை முறையே வனப்பாதுகாவலர் மற்றும் முதன்மை தலைமை வனப்பாதுகாவலர் அவர்களின் அங்கீகாரத்தின்படியே, வனஉயிரின காப்பாளரால் வழங்கப்படுகிறது. எனவே, இவ்வரைவு வனத்துறையின் தடையின்மை ஆவணமாக கருதலாகாது. மேலும், பார்வையின் கடிதத்தில் கேட்டவாறு வனத்துறையின் குறிப்புரையளிப்பது குறித்து முன்மொழிவு / பரிந்துரை கடிதம் பார்வை 4ல் கண்ட இவ்வலுவலக கடிதத்தில் வனப்பாதுகாவலர், தருமபுரி மூலமாக முதன்மை தலைமை வனப்பாதுகாவலர் அவர்களுக்கு சமர்ப்பிக்கப்பட்டுள்ளது. அதன்படி, அரசு புலங்களில் குவாரி அமைக்க அனுமதி கோரப்பட்ட இடத்தின் தூரம் தகவலின்பொருட்டு பின்வருமாறு தெரிவிக்கப்படுகிறது.

**அட்டவணை 1**

**சென்டர் / பொது எலம் விடுவதற்கு பரிந்துரை செய்யப்படும் குவாரி பகுதிகள் விவரம்**

Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F. No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWLS (km)
					Latitude	Longitude		
<b>Krishnagiri Taluk</b>								
1	Jinjupalli	Un-assessed waste - Parai	169 (Part)	2.00.00	12.54916	78.15410	3.4 Pethathalapalli	20 Udedurgam
2	Jinjupalli	Un-assessed waste - Tharisu	197/2 (Part)	1.20.00	12.55956	78.15585	4 Pethathalapalli	20.4 Udedurgam
3	Billanakuppam	Un-assessed waste - Parai	278	2.08.50	12.59999	78.16812	3.2 Naralapalli Extn.	23 Udedurgam
<b>Bargur Taluk</b>								
4	Shoolamalai	Un-assessed waste - Parai	54-Part-3	1.40.00	12.51168	78.25921	7.4 Pethathalapalli	31.2 Udedurgam
<b>Shoolagiri Taluk</b>								
5	Kamandoddi	Un-assessed waste - Tharisu	616/3 (Part-2)	2.75.00	12.66910	77.94928	2.4 Settipalli	14.2 Udedurgam
6	Kamandoddi	Un-assessed waste - Tharisu	653/1 (Part)	3.35.00	12.66448	77.94973	2.8 Settipalli	13.7 Udedurgam
7	Kamandoddi	Un-assessed waste-Malai	754 & 760 (Part-VI)	4.00.00	12.65973	77.96080	2.7 Settipalli	13.3 Udedurgam
8	Kamandoddi	Un-assessed waste - Tharisu	1276 (Part)	2.00.00	12.66421	77.96741	2.2 Settipalli	13.9 Udedurgam
9	Venkatesapuram	Un-assessed waste-Karadu	86-Part-1	2.50.00	12.75552	77.94513	1.05 Athimugam II	24 Udedurgam
10	Venkatesapuram	Un-assessed waste-Karadu	86-Part-2	2.00.00	12.75586	77.94660	1.05 Athimugam II	24.1 Udedurgam
11	Venkatesapuram	Un-assessed waste-Karadu	86-Part-3	2.00.00	12.75397	77.94352	1.04 Athimugam II	23.8 Udedurgam
12	B.S. Thimmasandiram	Un-assessed waste-Parai	88/1 (Part-3)	4.50.00	12.84070	77.95736	1.01 Amuthugondapalli	33.5 Udedurgam
13	Doripalli	Un-assessed waste-Parai	72(Part)	0.65.00	12.71262	77.95474	2.2 Settipalli	19.3 Udedurgam
			87/1(Part)	0.95.00				
			<b>Total</b>	<b>1.60.00</b>				
14	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-1	4.00.00	12.62856	77.95266	4.5 Sanamavu	9.9 Udedurgam
15	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-3	4.60.00	12.62604	77.95370	4.8 Sanamavu	9.7 Udedurgam
16	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-4	4.50.00	12.62499	77.95265	4.7 Sanamavu	9.6 Udedurgam



Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F. No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWLS (km)
					Latitude	Longitude		
17	Chennapalli	Un-assessed waste - Karadu	327/1 - Part-1	2.45.00	12.62504	78.05404	2 Errandapalli	14.3 Udedurgam
18	Chennapalli	Un-assessed waste - Karadu	327/1 - Part-2	2.45.00	12.62400	78.05477	2 Errandapalli	14.3 Udedurgam
<b>Hosur Taluk</b>								
19	Mugalur	Un-assessed waste	232/2 (Part-2)	4.85.00	12.62273	77.81719	5.6 Sanamavu	11.6 Udedurgam
20	Panchakshipuram	Un-assessed waste	603/1 (Part-C)	1.30.00	12.59781	77.79278	8.6 Sanamavu	11.6 Udedurgam
21	Panchakshipuram	Un-assessed waste	603/1 (Part-D)	2.00.00	12.59668	77.79277	8.6 Sanamavu	11.5 Udedurgam
22	Gobanapalli	Un-assessed waste	220/1 (Part-1)	3.00.00	12.63255	77.81140	6.4 Sanamavu	13 Udedurgam
23	Gobanapalli	Un-assessed waste	220/1 (Part-2)	3.00.00	12.63169	77.81128	6.4 Sanamavu	12.8 Udedurgam
24	Gobanapalli	Un-assessed waste	220/1 (Part-3)	3.00.00	12.63221	77.81357	6.2 Sanamavu	12.8 Udedurgam
25	Gobanapalli	Un-assessed waste	220/1 (Part-4)	2.00.00	12.63109	77.81268	6.3 Sanamavu	12.7 Udedurgam
26	Gobanapalli	Un-assessed waste	381 (Part-1)	1.30.00	12.63489	77.81198	6.4 Sanamavu	13.2 Udedurgam
27	Gobanapalli	Un-assessed waste	381 (Part-2)	1.50.00	12.63391	77.81214	6.4 Sanamavu	13.1 Udedurgam
<b>Denkanikottai Taluk</b>								
28	Hosapuram	Un-assessed waste	346 (Part), 353, 354/2	1.97.50	12.64563	77.81959	6.1 Sanamavu	13.8 Udedurgam
29	Daravendiram	Un-assessed waste - Podu	320/1 (Part)	1.70.50	12.56214	77.68326	6.5 Jawalagiri	6.5 Jawalagiri
			320/2	0.29.50				
			<b>Total</b>	<b>2.00.00</b>				
30	Nagamangalam	Un-assessed waste - Kallankuthu	629 (Part)	3.20.50	12.57400	77.91418	3.9 Udedurgam	3.9 Udedurgam

மேற்கண்ட அட்டவணை 1ல் உள்ள குவாரி பகுதிகள், காவேரி வடக்கு வனஉயிரின சரணாலயத்திற்கான சூழல் உயர்தரன் மண்டலத்திற்குள் (Eco-Sensitive Zone) வருவதில்லை.

**அட்டவணை 2**

**டெண்டர் / பொது ஏலம் மூலம் குத்தகை அனுமதி வழங்குவதை தற்காலிகமாக நிறுத்திவைக்க பரிந்துரை செய்யப்படும் குவாரிகளின் விவரப்பட்டியல்**

Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F.No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWLS (km)
					Latitude	Longitude		
<b>Krishnagiri Taluk</b>								
1	Kallukurukki	Govt. Poramboke - Ko Malai	701 (Part-II)	1.00.00	12.55536	78.22426	3.2 Kundarapalli II	27.7 Udedurgam
2	Kallukurukki	Govt. Poramboke - Ko Malai	701 (Part-III)	1.00.00	12.55541	78.22483	3.2 Kundarapalli II	27.8 Udedurgam
3	Kallukurukki	Govt. Poramboke - Ko Malai	701 (Part-IV)	0.90.00	12.55463	78.22316	3.2 Kundarapalli II	27.6 Udedurgam
4	Kallukurukki	Govt. Poramboke - Ko Malai	701 (Part-V)	3.50.00	12.55034	78.22850	3.9 Kundarapalli II	28.05 Udedurgam
5	Kallukurukki	Govt. Poramboke - Ko Malai	701 (Part-VI)	1.00.00	12.54704	78.22598	3.7 Pethathalapalli	27.8 Udedurgam
<b>Uthangarai Taluk</b>								
6	Katteri	Govt. Punjai - Podugal	17/1	1.25.00	12.19712	78.53751	1.6 Onnakarai	65.4 Marandahalli
7	Thathanur		10//2	1.61.00	12.21405	78.53499	0.5 Onnakarai	64.6 Marandahalli
<b>Shoolagiri Taluk</b>								
8	Mattampalli	Un-assessed waste-Karadu	53/1 (Part-1)	3.00.00	12.69400	78.06509	0.53 Kumbalam I	21 Udedurgam
9	Mattampalli	Un-assessed waste-Karadu	53/1 (Part-2)	1.90.00	12.69279	78.06464	0.64 Kumbalam I	20.9 Udedurgam
10	Marandapalli	Un-assessed waste-Parai	71/2	1.15.0	12.67734	78.05708	1.4 Thekkalapalli	19.1 Udedurgam

மேற்கண்ட அட்டவணை 2ல் குறிப்பிட்டுள்ள இடங்கள் குறித்து வனம் மற்றும் வனஉயிரின பாதுகாப்பு தொடர்பான கூடுதல் கள ஆய்வு மேற்கொள்ள வேண்டி உள்ளதாலும், மேலும் கால அவகாசம் தேவைப்படுவதால் அப்பகுதியை ஒட்டி அமைந்துள்ள இடங்களில் காப்பு நிலம் தொடர்பான முன்மொழிவுகள், பரிசீலனையில் உள்ளதாலும் இதுகுறித்த மேல் நடவடிக்கையினை துரிதப்படுத்தி இயலாத சூழ்நிலையில் உள்ளது. எனவே, அட்டவணை 2ல் உள்ள இவ்விடங்களின் டெண்டர் மற்றும் பொது ஏலத்தில் விடுவதை தற்சமயம் நிறுத்தி வைக்க பரிந்துரைக்கப்படுவதுடன், இவ்விவரம் துரத்ததை கணக்கிடும் பொருட்டே அனுப்பப்படுகிறது. குவாரி பணிகள் மேற்கொள்ள தனியாக துறைத்தலைவரிடமிருந்து வனத்துறையின் தடைகுறித்த குறிப்புரை வழங்கப்படும் என அன்புடன் தெரிவித்துக்கொள்கிறேன்.

தங்கள் அன்புள்ள,  
ஓம்/- க. கார்த்திகேயனி,  
வனஉயிரினகாப்பாளர்,  
ஓசூர் வனக்கோட்டம்.

//உ.ந.உ.ப//

  
கண்காணிப்பாளர்

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A

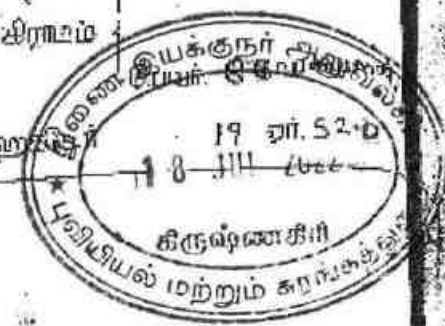



மாவட்டம். தர்மபுரி

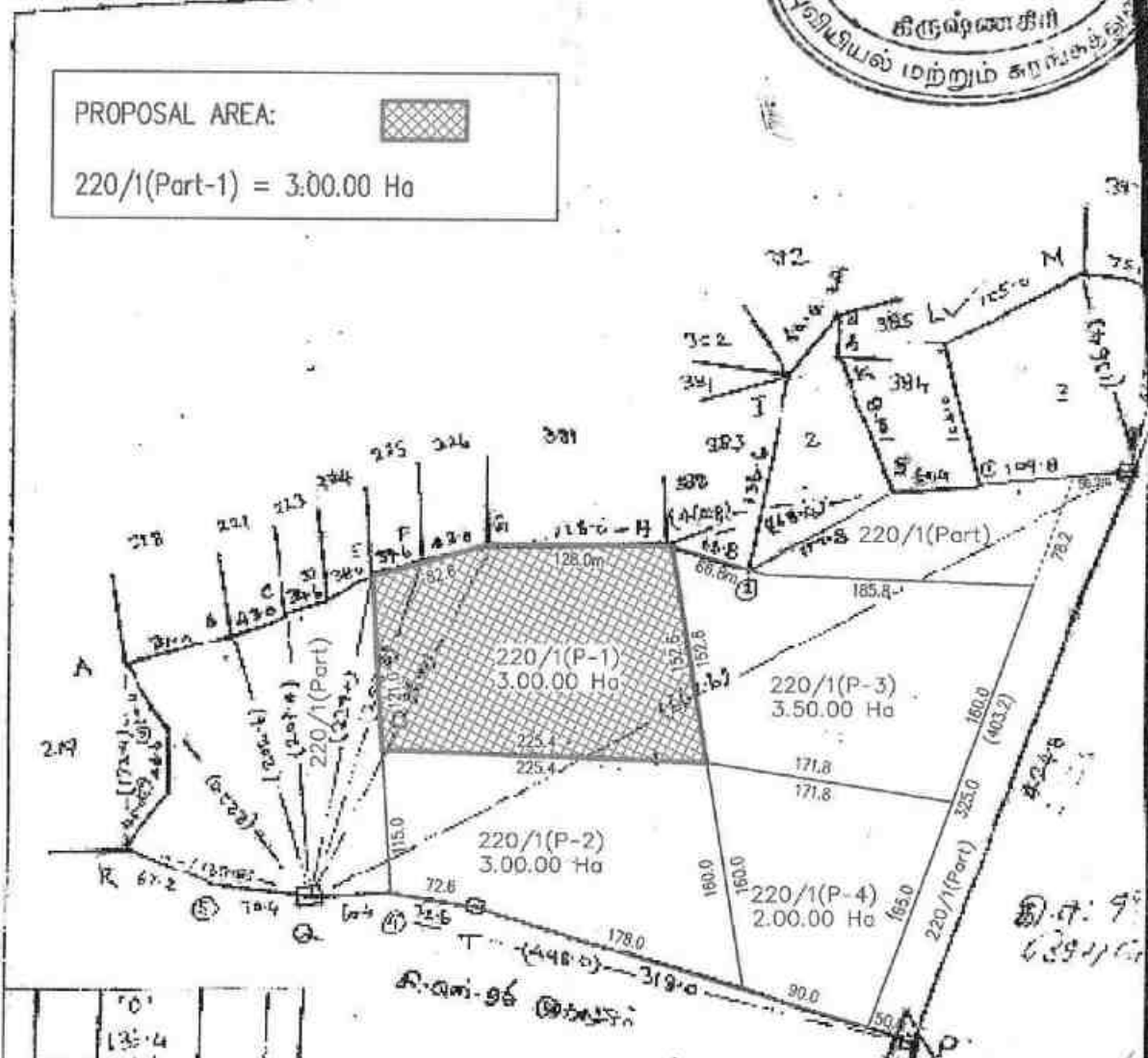
வட்டம். சிவசபை

புள்ளி. 220

எண் 97



PROPOSAL AREA:   
 220/1(Part-1) = 3.00.00 Ha



N	71-2	135.4			
		23.6			
		M			
		S			
		162.4			
		56.6	35.0	2	
		H			
		O			
		464.8			
M	133.8	436.4			
		355.0	1.6		
L	102.2	325.2			
S	6.3	294.0			
J	133.0	261.2			
K	102.8	267.2			
I	90.0	233.6			
		128.0	14.2	H	3
		G			

A	131.4		
B-L	36.6	7	
36.0	31.8	6	
R	138.6		
72.0			
41.8			
399.68			
329.06			
P	10		
37.4			
72.2			
N			

வட்டியாளர்  
 சுகம்.

DEPUTY TAHSILDAR  
 HOSUR.

S. MATHAN PRAKASH, M.Sc., M.Phil  
 RQP/CNN/270/2016/A

ச.ம.பு.  
 2.13.16



பகுதி 2 கிராமத்தில் வருடவாரி புறணி வைப்பை கட்டுவது சம்பந்தம்

பகுதி 2 கிராமத்தில் வருடவாரி புறணி வைப்பை கட்டுவது சம்பந்தம்

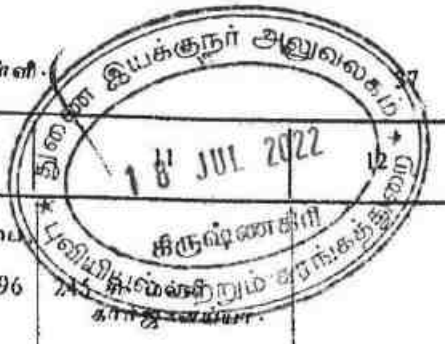
பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி	பகுதி									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

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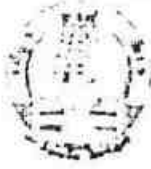
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216	...	216	அ	புற	...	...	...	...	0 90.0	...	மாத்தாப்பு.
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224	...	224	அ	புற	...	...	...	...	0 32.0	...	மேய்ச்சல்தரை.
225	...	225	ர	பு	...	8-3	7	2 77	0 28.0	0 75	507 ம. சுரத்தப்பா (1), ம. மல்லப்பா (2), க. சித்தப்பா (3), ஜெ. சின்ன மல்லேகவுடு (4).

*Handwritten signature and name: S. MATHAN PRAKASH*  
 Village Administration Officer

ZONAL DEPUTY TAHSILDAR  
 HOSUR.

85..GOPANAPALLI  
 Hosur-Tk, Krishnagiri Dt.

S. MATHAN PRAKASH, M.Sc., M.Phil.  
 RQP/CNN/270/2016/A



**FORM C**

[See rule 9(a)]

*Acknowledgement of Registration of Firms*

The Registrar of Firms, TamilNadu, hereby acknowledges the receipt of the statement prescribed by Section 58(1) of the Indian Partnership Act 1932 The statement has been filed and the name of the firm **NATURAL STONE INDUSTRY** has been entered in the Register of Firms as No FR/Krishnagiri/91/2022



Date : 31-Mar-2022  
Station : Krishnagiri

Digitally Signed by Thiru: Tmt: Selvi  
Kavitha K  
Registrar of Firms

*Handwritten signature and date 31/3/22*

*Handwritten signature*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**



புகள சரீ சகரரீ

ர. 100

INDIA  
INDIA NOV

தமிழ்நாடு TAMILNADU ரs 100/-  
31/03/2022 Natural Stone Industry  
Krishnagiri

CP 934507

K.P. MURUGHERISHNAN  
S.V.L. NO. 2008/KGI  
KRISHNAGIRI DISTRICT, TAMILNADU

"PARTNERSHIP DEED OF "NATURAL STONE INDUSTRY"

This deed of partnership is executed at Krishnagiri on this 31<sup>st</sup> day of March 2022 between,

1. Sri.B.Basappan, S o Sri Basappan, aged about 68 years, residing at 1/518, Senthil Nagar, V Cross, Puthupetta, Agasipatti, Krishnagiri District Pin 635002 herein after called the party of the first part

2. Sri.Kuppusamy Govindhan S o Sri Govindhan, aged about 53 years, residing at No 1/48, Koranampatti, Edappadi, Koranampatti, Salem District Pin 637102 herein after called the party of the second part



01 *[Signature]*  
02 *[Signature]*



ச. 100  
HUNDRED RUPEES  
INDIA



தமிழ்நாடு தமிழ்நாடு TAMILNADU 15000  
31/03/2022 Natural Stone Industry  
Krishnagiri

CP 934109  
K.P. MURALIKRISHNAN  
S.V.L. ... KRISHNAGIRI

Whereas the partners has mutually agreed to carry on the business in partnership under the name and style of "NATURAL STONE INDUSTRY" with effect from 31<sup>st</sup> March 2022 onwards and the parties here to desire to have all the terms and conditions of the partnership reduced to in writing and to have the same duly evidenced by this deed of partnership

on 15/3/2022  
[Signature]



[Signature]  
V. PARTHIBAN, B.A., B.L.,  
Advocate & Notary Public,  
KRISHNAGIRI



ரூ. 100

RUPEES

INDIA



தமிழ்நாடு TAMILNADU

31/02/2022 Natural Stone Industry  
Krishnagiri

K.P. MURALIKRISHNAN  
S.V. 12/2008/KGI  
KRISHNAGIRI, TAMILNADU

NOW THIS DEED WITNESSETH AS FOLLOWS:

1. Name and Style

The name and style of the firm shall be "NATURAL STONE INDUSTRY"

2. Constitution of the firm:

The partnership firm as constituted under the deed of partnership shall carry on its business in partnership, as per the terms and conditions set out as below in this deed

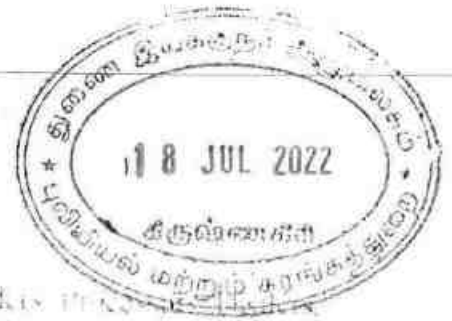
3. Place of Business

The firm shall continue to have its principal place of business at 1518, Senthil Nagar, V Cross, Puthupettai, Agasipalli, Krishnagiri District Pin- 635002, and the same may be shifted to any other place as the partners may decide from time to time. And also by mutual consent of the partners, the firm can open branches for its business activities as decided by the partners from time to time



V. PARTHIBAN, B.A., B.L.,  
Advocate & Notary Public

Handwritten signatures and dates.



#### 4. Nature of Business

The firm shall carry on the business of Manufacturers, Traders, Importers, Exporters, Merchants, Consultants, Commission Agents of various kinds of Products and such other activities as mutually agreed by the partners of the firm from time to time for the benefit of the firm.

#### 5. Capital Contribution

The total capital of the firm is Rs.5,00,000/- (Rupees Five Lacs only) contributed by the partners as detailed below:

<u>Sl no</u>	<u>Name</u>	<u>Capital in Rs.</u>
1	Sri B.Basappan	2,50,000/-
2	Sri Kuppusamy Govindhan	2,50,000/-
		<u>5,00,000/-</u>

The same may be increased or decreased as decided by the partners from time to time after considering the business requirements. The share of profit if any shall be credited to the partner's capital account and loss if any shall be carried forward under the head profit and loss account. The partners are entitled for an interest on capital and current accounts on the fund outstanding at the end of the month at 1% per month, shall be charged each month or such other rate of interest as agreed by the partners from time to time for the benefit of the firm and the same shall be credited in the partners capital account.

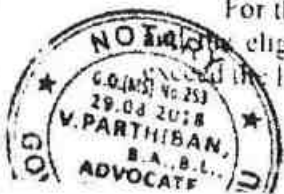
#### 6. Loans and Borrowings

The firm can borrow the required amount over and above the capital contribution by the partners from financial institutions, Banks, and partners from such other sources at the rate and condition as decided by the partners from time to time. The loan documents have to be signed by the party of the first part on behalf of the firm.

#### 7. Management of the firm

The party of the First part Sri. B.Basappan shall be the managing partner of the firm and the Managing partner will manage the day to day affairs of the firm. Any one partner has to represent on behalf of the firm to Government departments, taxation matters etc on behalf of the firm. All the partners of the firm will manage the overall business activities.

For the above services rendered to the firm, the partners are eligible for remuneration eligible salary and remuneration to the partners shall be calculated and shall not exceed the limit prescribed u/s 40(b) of the Income-tax act, 1961.



*[Handwritten signature]*

*[Handwritten signature: Sri B. Basappan]*



The remuneration to the partners has to be shared by the partners in the following ratio after reducing the salary paid to the partners:



<u>Sl.No.</u>	<u>Name</u>	<u>% of share</u>
1.	Sri B.Basappan	50%
2.	Sri. Kuppusamy Govindhan	50%

#### **8. Accounts and Profit and Loss sharing ratio equally**

Proper books of accounts shall be maintained in the usual course of business and the same shall be closed on 31<sup>st</sup> March in each year to ascertain the net profit or loss of the firm for that year. The interest and remuneration payable to the partners and the taxes due and payable on the taxable income of the firm for the year shall be treated as common item of expenditure. Balance Sheet shall be prepared as on 31<sup>st</sup> March every year and the net profit or loss of the firm so arrived at shall be divided between the partners and the share be credited or debited as the case may be in the respective current accounts of such partners in the following sharing ratio.

<u>Sl.No.</u>	<u>Name</u>	<u>% of share</u>
1.	Sri. B.Basappan	50%
2.	Sri. Kuppusamy Govindhan	50%

#### **9. Duration of the Firm:**

The duration of the firm will be at will. On death, retirement expulsion or admission of the partners shall not have the effect of dissolution of the firm.

#### **10. ADMISSION, RETIREMENT, EXPULSION OF PARTNERS AND DISSOLUTION OF THE FIRM:**

- Admission:** New partner shall be admitted to the firm except with the written consent of all the partners. However in the case of a nominee of a deceased partner the other partner shall be bound to admit such nominee as a partner of the firm, in the manner mentioned therein.
- Retirement:** Any partner, desiring to retire from the firm shall do so by giving a notice in writing to the other partners.
- Dissolution:** Death, Retirement or expulsion of a partner shall not have the effect of dissolving the firm. In particular, no partner has the right to demand dissolution of the firm.



*Represented*  
*V. Parthiban*  
5  
V. PARTHIBAN, B.A., B.L.,

01 B. Basappa  
02 *[Signature]*



## 11 SETTLEMENT OF ACCOUNTS

In the event of admission and retirement of partners and for the purpose of settlement of rights and accounts between the partners of the business shall be re-valued taking into account the life of such assets, the prevailing market prices for the same and all other relevant factors. Provision for bad and doubtful debts shall also be made. Any surplus or deficit arising out of the aforesaid exercises shall be divided in proportion to the profit sharing ratio and credited or debited as the case may be, to the respective current accounts of partner.

## 12. Bank Operation:

The bank accounts shall be opened in the firm name and operated in any Scheduled banks and such bank account shall be operated by any one of the partner signing the banking documents and instruments on behalf of the firm individually for the benefit of the firm.

## 13. ARBITRATION:

All matters in difference in relation to the partnership affairs shall be referred to arbitration to be appointed by each partner and their umpires or to single arbitrator according to the provisions of the Arbitration Act in force in India.

## 14. APPLICATION OF INDIAN PARTNERSHIP ACT, 1932:

Except Provision mentioned above in this deed to the contrary, all the other provisions of the Indian Partnership Act, 1932 shall be applicable to the firm.

In witness, the parties hereto affix their signatures to this deed on the day, month and year, herein above first mentioned.

### WITNESS :-

1. V. Rajasekar  
2/37F, Thavallam (Vill)  
Itthikal Agaram (PO)  
Krishnagiri. 635122.

2. A. C. MANIKANDAN

No. 2 ANNA NAGAR,  
TANK ROAD,  
KELIKANAMPALAYAM  
COIMBATORE. 641048

01. B. B. S. S. S.

02. A. C. M.

V. P.  
31/3/2022

V. PARTHIBAN, B.A., B.L.,  
Advocate & Notary Public,  
KRISHNAGIRI-635 001,  
Mobile: 94430 58694.

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016





சென்னை இயக்குநர் அலுவலகம்  
Government of India

சென்னை இயக்குநர் அலுவலகம்  
Unique Identification Authority of India

பதிவு (A) எண் / Enrolment No.: 2193/1

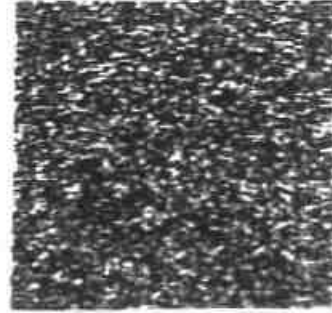
Download Date: 03/03/2020

To  
பாப்பன் பி  
Basappan B  
S/O: Basappan  
1/51B  
SENTHIL NAGAR  
V CROSS PUTHUPETTAI  
Agasipalli  
Krishnagin Indl. Estate  
Krishnagin Tamil Nadu - 635002  
9442137482

Issue Date: 18/12/2019

Signature valid

UNIQUE IDENTIFICATION  
AUTHORITY OF INDIA



உங்கள் ஆதார் எண் / Your Aadhaar No. :

4002 6409 9529

VID : 9177 0142 5767 2026

எனது ஆதார், எனது அடையாளம்



சென்னை இயக்குநர் அலுவலகம்  
Government of India



Download Date: 03/03/2020



பாப்பன் பி  
Basappan B  
பிறந்த நாள்/DOB: 15/07/1964  
பால் / MALE

Issue Date: 18/12/2019

4002 6409 9529

VID : 9177 0142 5767 2026

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

எனது ஆதார், எனது அடையாளம்



अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र  
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)  
**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**  
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री एस. माथन प्रकाश, 2/274, ईस्ट स्ट्रीट, कुलरोकरनल्लूर पोस्ट, ओटपिडारम तालुक, तूतुकुडी डस्ट्रीक्ट - 628 401, तमिलनाडू, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है।

Shri S. Mathan Prakash, 2/274, East Street, Kulasekaranallur Post, Ottapidaram Taluk, Thoothukudi District - 628 401, Tamilnadu, whose **Photograph and signature** is affixed herein above, having given satisfactory evidence of his qualifications & experience hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उनकी पंजीयन संख्या है  
His registration number is

RQP /CNN/270/2016/A

यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 09.02.2026 को समाप्त होगी।  
This recognition is valid for a period of 10 years ending on 09.02.2026.

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज भ्रष्ट होने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।

This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai  
दिनांक/ Date : 10.02.2016

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-1



PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-2



  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**






77° 48' 33.7498" E

77° 48' 41.4624" E

<b>PLATE NO.:</b>	
<b>DATE OF SURVEY:</b>	25-04-2022
<b>APPLICANT ADDRESS:</b>	M/s. NATURAL STONE INDUSTRY, D.No.1/518, SENTHIL NAGAR, Vth CROSS, PUDHUPETTAI, AGASIPALLI, KRISHNAGIRI DISTRICT - 635 002.
<b>LOCATION OF QUARRY:</b>	<b>EXTENT :</b> 3.00.00 Ha, <b>S.F.NO :</b> 220/1 (Part-1) <b>VILLAGE :</b> GOPANAPALLI, <b>TALUK :</b> HOSUR, <b>DISTRICT :</b> KRISHNAGIRI.
<b>INDEX</b>	<b>QUARRY LEASE AREA :</b> ●
	<b>TOPO SHEET NO.:</b> 57-H/14, <b>LATITUDE :</b> 12° 37' 59.2819" N to 12° 37' 56.7500" N <b>LONGITUDE :</b> 77° 48' 41.4624" E to 77° 48' 33.7498" E
<b>LOCATION PLAN</b>	<b>NOT TO SCALE</b>
<b>PREPARED BY:</b>	I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE  <i>S. Mathan Prakash</i> <b>S.MATHAN PRAKASH, M.Sc., M.Phil.,</b> RECOGNIZED QUALIFIED PERSON RQP/CHN/270/2018/A



<b>PLATE NO:IA</b>
DATE OF SURVEY: 25-04-2022
<b>APPLICANT ADDRESS:</b> M/s. NATURAL STONE INDUSTRY, D.No.1/518, SENTHIL NAGAR, Vth CROSS, PUDHUPETTAI, AGASIPALLI, KRISHNAGIRI DISTRICT - 635 002.
<b>LOCATION OF QUARRY:</b> EXTENT : 3.00.00 Ha, S.F.NO : 220/1 (Part-1) VILLAGE : GOPANAPALLI, TALUK : HOSUR, DISTRICT : KRISHNAGIRI.
<b>INDEX</b> QUARRY LEASE AREA  ROAD 
<b>ROUTE MAP</b> NOT TO SCALE
Prepared By: I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE  S.MATHAN PRAKASH, M.Sc., M.Phil., RECOGNIZED QUALIFIED PERSON RQP/CHN/270/2016/A97 A





**PLATE NO:IB**  
 DATE OF SURVEY: 25-04-2022  
 APPLICANT ADDRESS: **ಮೈಸೂರು ಸ್ಟೇಟ್ ಇಂಡಸ್ಟ್ರೀಸ್ ಲಿಮಿಟೆಡ್**  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, 9th MILE NAGAR, 5th CROSS  
 PUDHUPETTA,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT  
 18 JUL 2022


**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**  
 QUARRY LEASE AREA :   
 5KM RADIUS :   
 TOPO SHEET NO.: 57-H/14,  
 LATITUDE :12° 37' 59.2819" N to 12° 37' 56.7500" N  
 LONGITUDE: 77° 48' 41.4624" E to 77° 48' 33.7498" E

**ಪಟ್ಟಿ**

ಸಂಖ್ಯೆ	ವಿವರಣೆ	ಸಂಕೇತ
1	ಕ್ವಾರಿ ಲೀಸ್ ಪ್ರದೇಶ	
2	5 ಕಿ.ಮೀ. ತ್ರಿಜ್ಯ	

**TOPO SHEET MAP OF THE LEASE AREA**  
 SCALE-1:50,000

**PREPARED BY:**  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE  
  
 S.MATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNN/270/2016/A98 A

12° 38' 00.5003" N  
77° 48' 37.4098" E

12° 37' 56.7500" N  
77° 48' 33.7498" E



12° 37' 54.3668" N  
77° 48' 40.8039" E

12° 37' 59.2819" N  
77° 48' 41.4624" E



PLATE NO:IC

DATE OF SURVEY: 25-04-2022




APPLICANT ADDRESS:

M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

LOCATION OF QUARRY:

EXTENT : 3.00.00-Ha,  
S:F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX


QUARRY LEASE BOUNDARY   
500M RADIUS   
300M RADIUS 

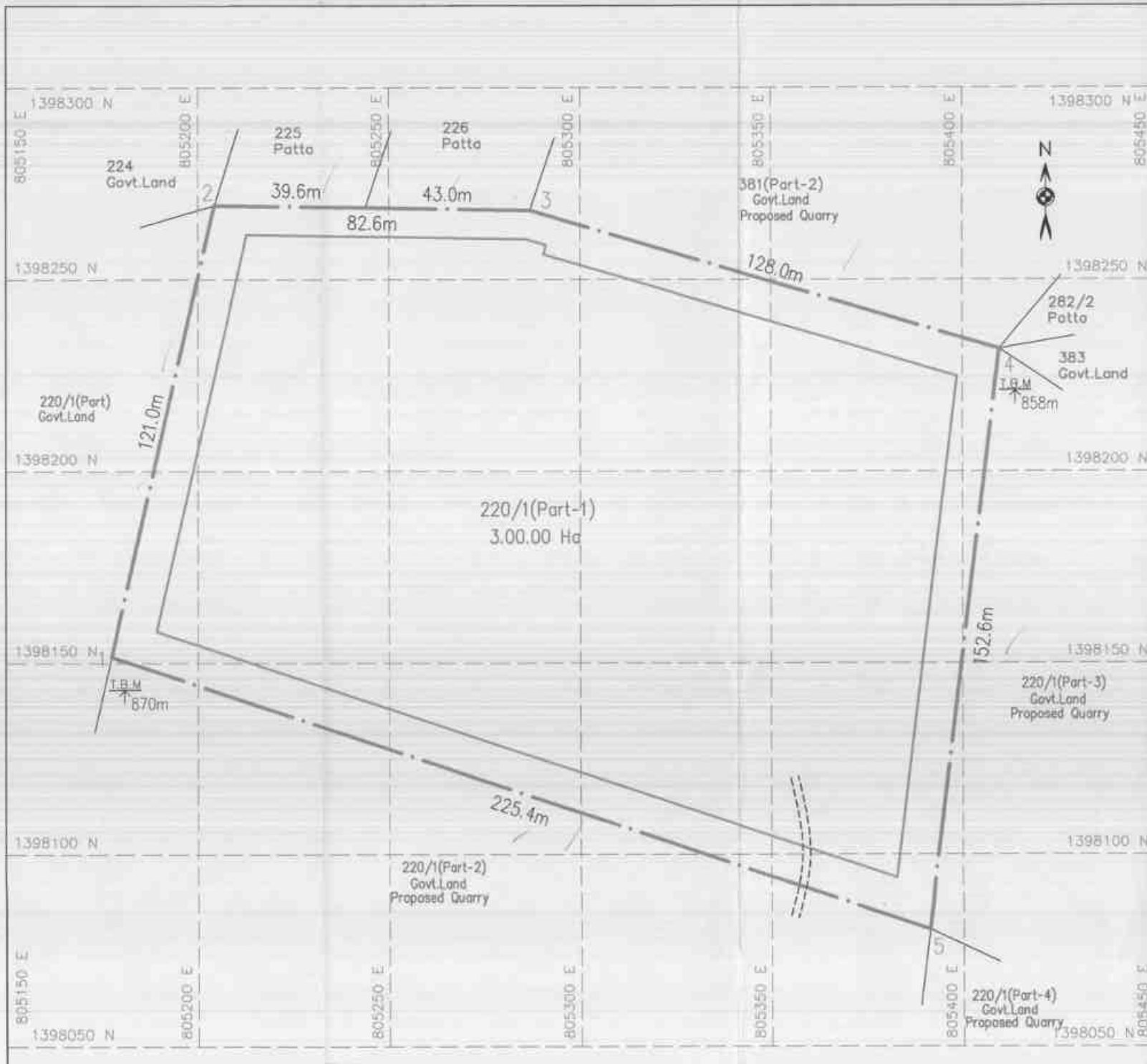
SATELLITE IMAGE  
(500m RADIUS)

SCALE 1:5000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

  
S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
AQP/CNV/270/2016/A 99 A



S.No. 220/1 Part-1 Page No. 2822

BOUNDARY CO-ORDINATES

LABEL	LATITUDE	LONGITUDE
1	12° 37' 58.7500" N	77° 48' 35.7888" E
2	12° 38' 00.5728" N	77° 48' 52.5258" E
3	12° 38' 00.5003" N	77° 48' 37.4098" E
4	12° 37' 59.2819" N	77° 48' 41.4624" E
5	12° 37' 54.3668" N	77° 48' 40.8039" E

**PLATE NO:II**

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	

**MINE LEASE PLAN**

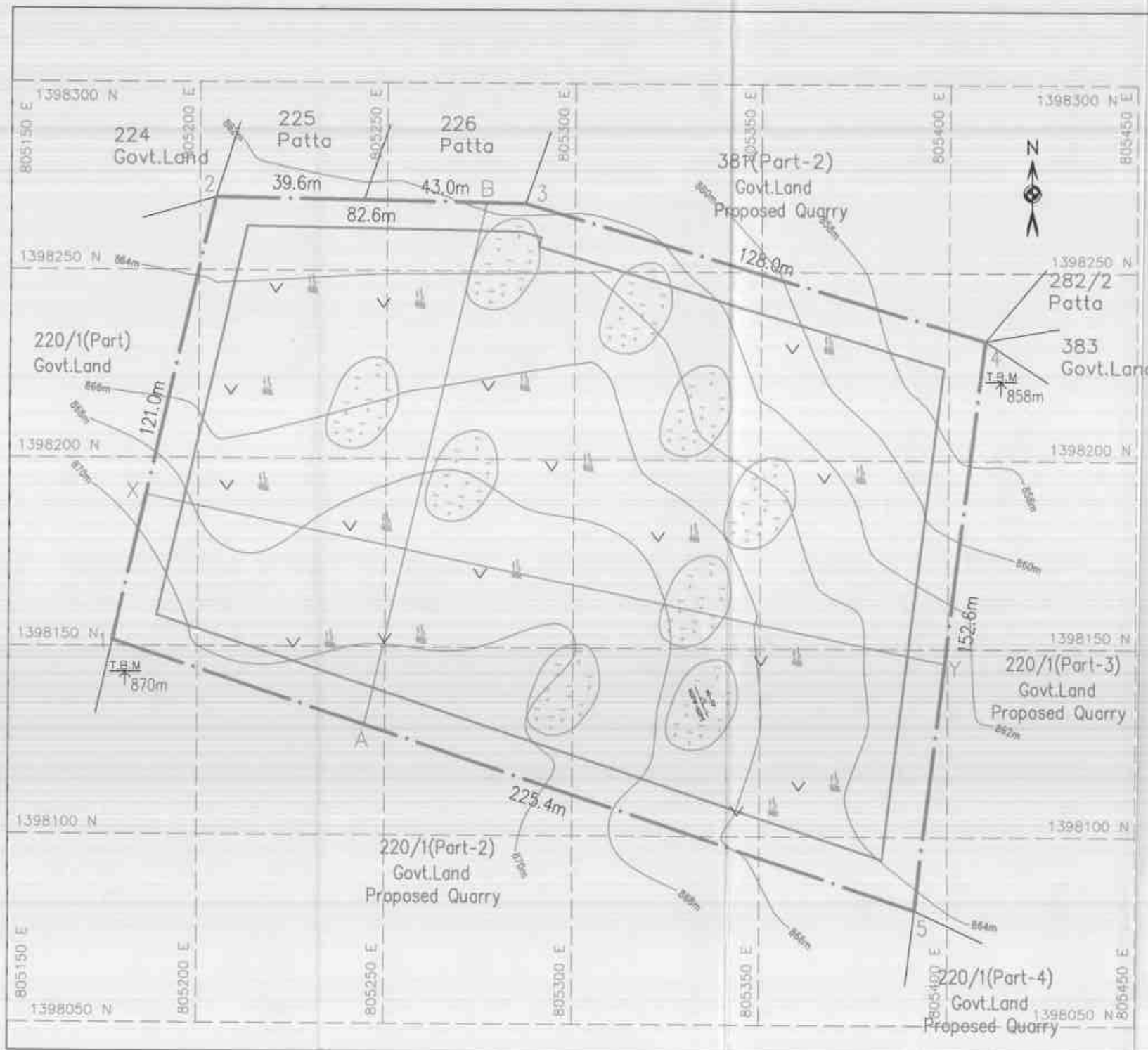
SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S. NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 ROP/CNN/270/201100 A





**PLATE NO: III**

**DATE OF SURVEY: 25-04-2022**

**APPLICANT ADDRESS:**

M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m & 10.0m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL (GRAVEL)
- ROUGH STONE
- ROCK OUTCROPS
- CONTOUR LINE
- STRIKE & DIP
- QUARRY ROAD
- SHRUB

**SURFACE AND GEOLOGICAL PLAN**

**SCALE 1:1000**

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/2011

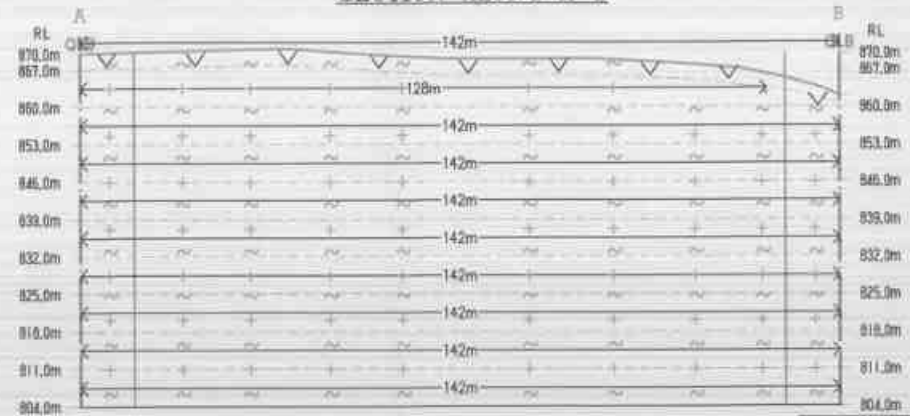


Surface Ground Level Above Height - 12m  
Surface Ground Level Below Depth - 54m

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



**PLATE NO:III-A**  
DATE OF SURVEY: 25-04-2022  
APPLICANT ADDRESS:  
M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAT,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**  
EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

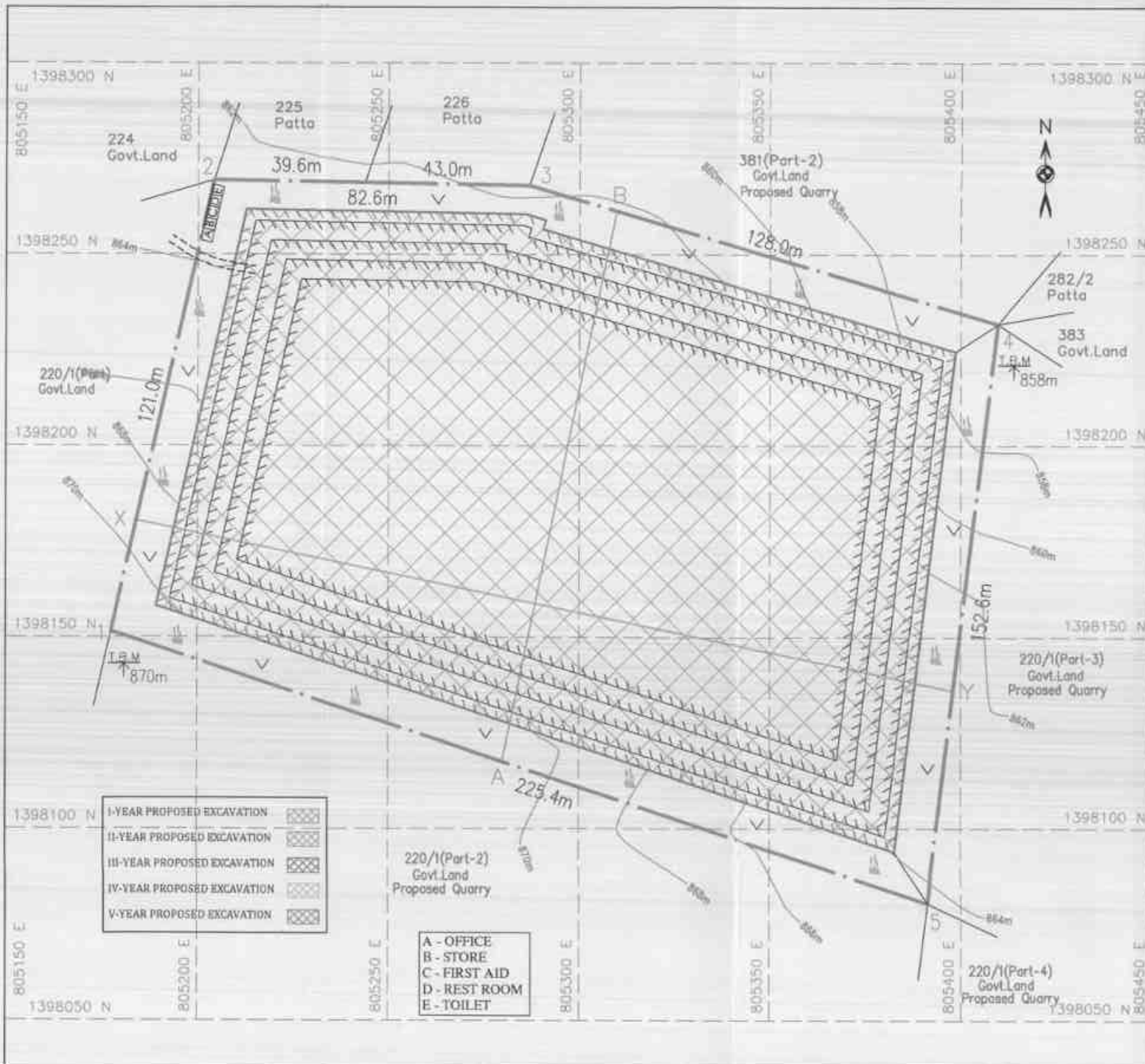
- QUARRY LEASE BOUNDARY
- 7.5m & 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE

**GEOLOGICAL SECTIONS:**  
SCALE 1:1000

Prepared By:  
I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

S.NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQF/CHN/270/2015/16

GEOLOGICAL RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)	Topsoil (Gravel) in Cu.m.
XY-AB	I	217	142	3			92442
	II	173	128	7	155008	155008	
	III	217	142	7	215698	215698	
	IV	217	142	7	215698	215698	
	V	217	142	7	215698	215698	
	VI	217	142	7	215698	215698	
	VII	217	142	7	215698	215698	
	VIII	217	142	7	215698	215698	
	IX	217	142	7	215698	215698	
	X	217	142	7	215698	215698	
<b>Total=</b>					<b>1880592</b>	<b>1880592</b>	<b>92442</b>



**PLATE NO:IV-A**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**

M/s. NATURAL STONE INDUSTRY,  
D.No.1/516, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635.002.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	

**YEARWISE DEVELOPMENT AND PRODUCTION PLAN**

(First Five (I-V) Years)  
**SCALE 1:1000**

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

  
**S.NATHAN PRAKASH, M.Sc., M.Phil.,**  
RECOGNIZED QUALIFIED PERSON  
RQ/CHR/270/2016/A



SURFACE GROUND LEVEL ABOVE HEIGHT - 12m  
 SURFACE GROUND LEVEL BELOW DEPTH - 26m

PLATE NO:IV-A1  
 DATE OF SURVEY: 25-04-2022  
 APPLICANT ADDRESS:  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SETHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

LOCATION OF QUARRY:  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

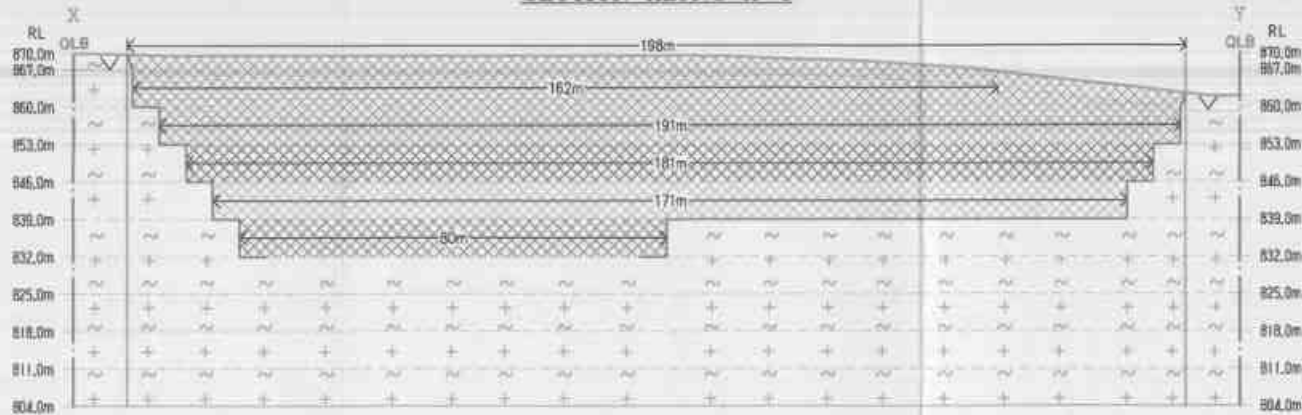
INDEX

- QUARRY LEASE BOUNDARY
- 7.5m & 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE

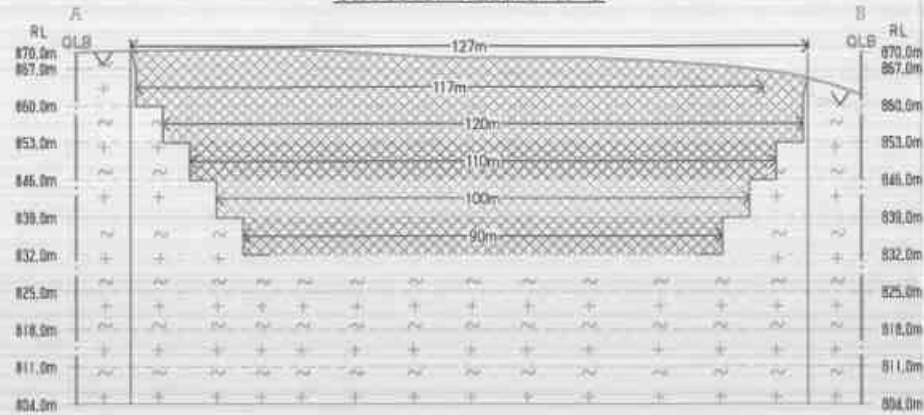
YEARWISE DEVELOPMENT AND PRODUCTION SECTIONS  
 (First Five (I-V)Years)  
 SCALE 1:1000

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE  
  
 S.NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNV/270/2011

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



I-YEAR PROPOSED EXCAVATION

II-YEAR PROPOSED EXCAVATION

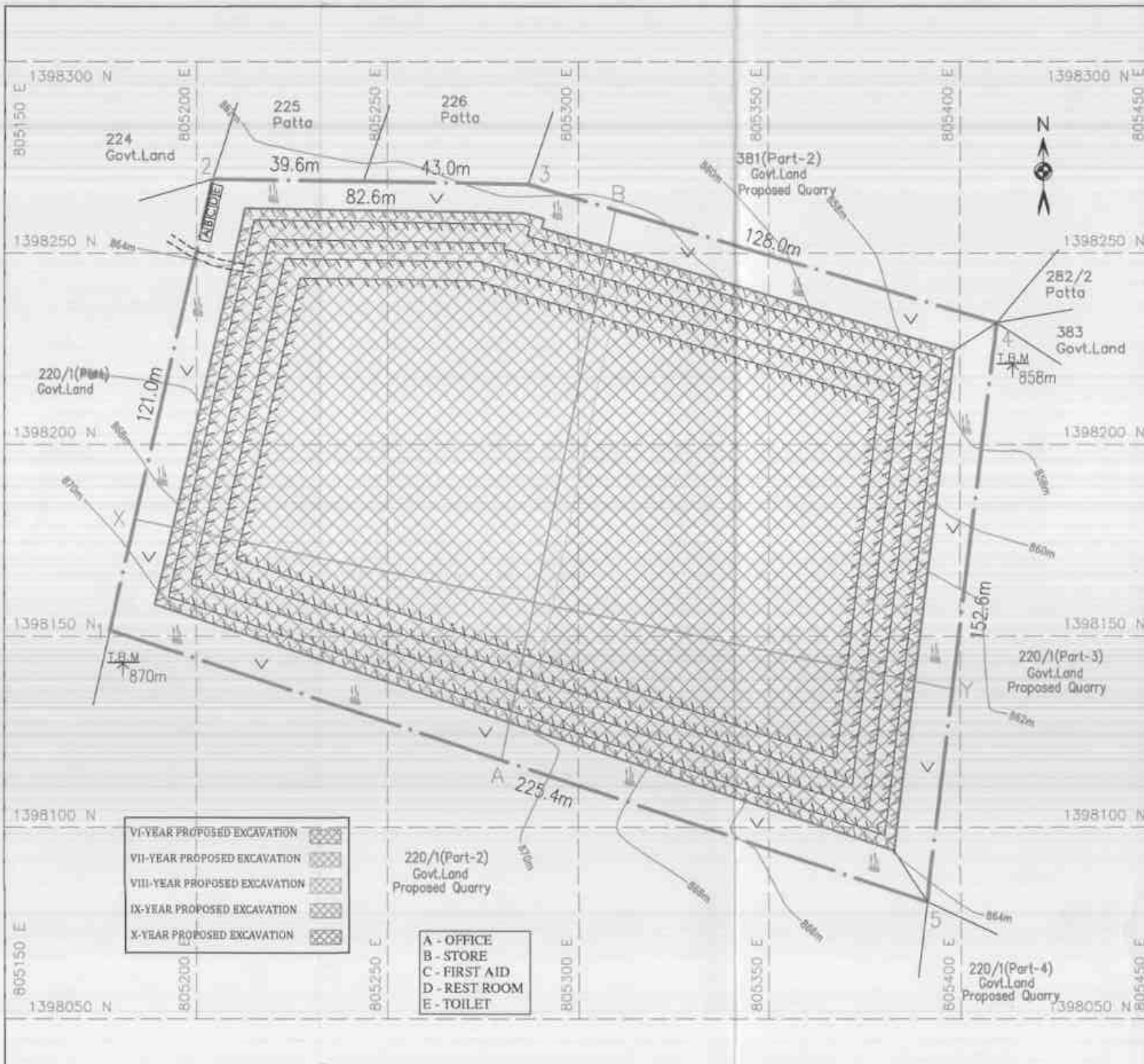
III-YEAR PROPOSED EXCAVATION

IV-YEAR PROPOSED EXCAVATION

V-YEAR PROPOSED EXCAVATION

YEARWISE DEVELOPMENT AND PRODUCTION (First Five (I-V) Years)								
YEAR	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (m <sup>3</sup> )	Recoverable Reserve in m <sup>3</sup> (100%)	Top Soil (Gravel) in m <sup>3</sup>
I-YEAR	XY-AB	I	198	127	3			75438
II-YEAR		II	162	117	7	132678	132678	
III-YEAR		III	191	120	7	160440	160440	
IV-YEAR		IV	181	110	7	139370	139370	
V-YEAR		V	171	100	7	119700	119700	
V-YEAR		VI	80	90	7	50400	50400	
<b>Total=</b>						<b>602588</b>	<b>602588</b>	<b>75438</b>





**PLATE NO:IV-B**  
 DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

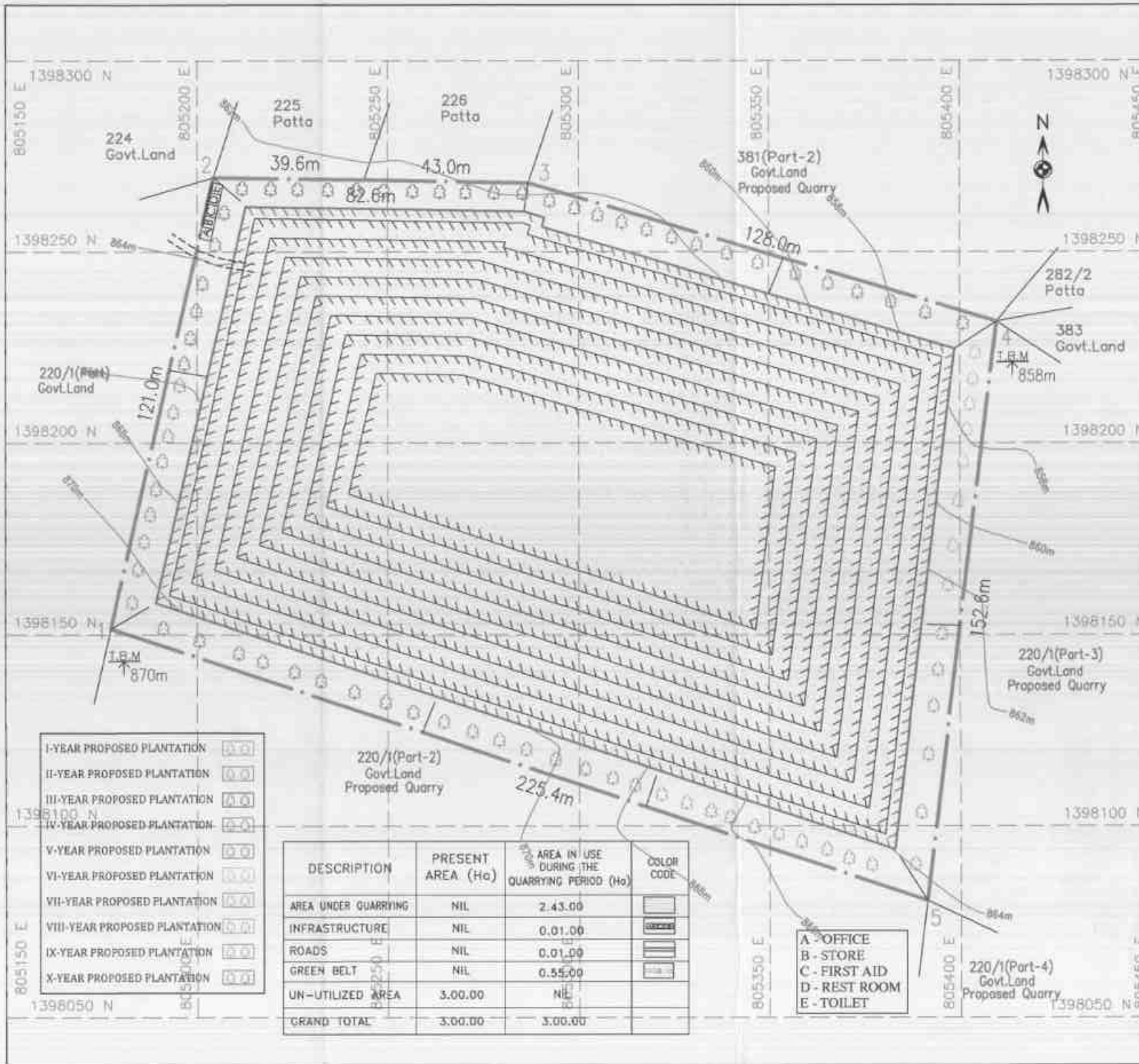
**INDEX**

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	

**YEARWISE DEVELOPMENT AND PRODUCTION PLAN**  
 (Second Five (VI-X) Years)  
**SCALE 1:1000**

**Prepared By:**  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CRN/270/201105 A



**PLATE NO:V**  
 DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	
MINE LAYOUT	

**MINE LAYOUT LAND USE PATTERN & AFFORESTATION PLAN**  
 SCALE 1:1000

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.  
  
 S. NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNN/270/201106 A

I-YEAR PROPOSED PLANTATION	
II-YEAR PROPOSED PLANTATION	
III-YEAR PROPOSED PLANTATION	
IV-YEAR PROPOSED PLANTATION	
V-YEAR PROPOSED PLANTATION	
VI-YEAR PROPOSED PLANTATION	
VII-YEAR PROPOSED PLANTATION	
VIII-YEAR PROPOSED PLANTATION	
IX-YEAR PROPOSED PLANTATION	
X-YEAR PROPOSED PLANTATION	

DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	NIL	2.43.00	
INFRASTRUCTURE	NIL	0.01.00	
ROADS	NIL	0.01.00	
GREEN BELT	NIL	0.55.00	
UN-UTILIZED AREA	3.00.00	NIL	
GRAND TOTAL	3.00.00	3.00.00	

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

12° 38' 00.5003" N  
77° 48' 37.4098" E

OCTOBER TO DECEMBER



12° 37' 56.7500" N  
77° 48' 33.7498" E

12° 37' 59.2819" N  
77° 48' 41.4624" E

JULY TO SEPTEMBER

12° 37' 54.3668" N  
77° 48' 40.8039" E

PLATE NO:VI

DATE OF SURVEY: 04-04-2022

APPLICANT ADDRESS:  
M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SEMPIN NAGAR VIL CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.



LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE BOUNDARY	
500M RADIUS	
300M RADIUS	
60M RADIUS	
APPROACH ROAD	
QUARRY ROAD	
TREES	
SHRUB	
WIND DIRECTION	
ADJACENT QUARRY	
CRUSHER UNIT	
INFRASTRUCTURES	
DRY AGRICULTURAL LAND	

ENVIRONMENT PLAN

SCALE 1:5000

Prepared By:

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TO THE BEST OF MY KNOWLEDGE

S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQ/CNN/270/1016/



PLATE NO:VII

DATE OF SURVEY: 18 JUL 2022

APPLICANT ADDRESS:

M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
TRUCK ROAD (QUARRY ROAD)	
FENCING	
PARAPET WALL	
ULTIMATE PIT LIMIT	
PROPOSED WATER STORAGE	

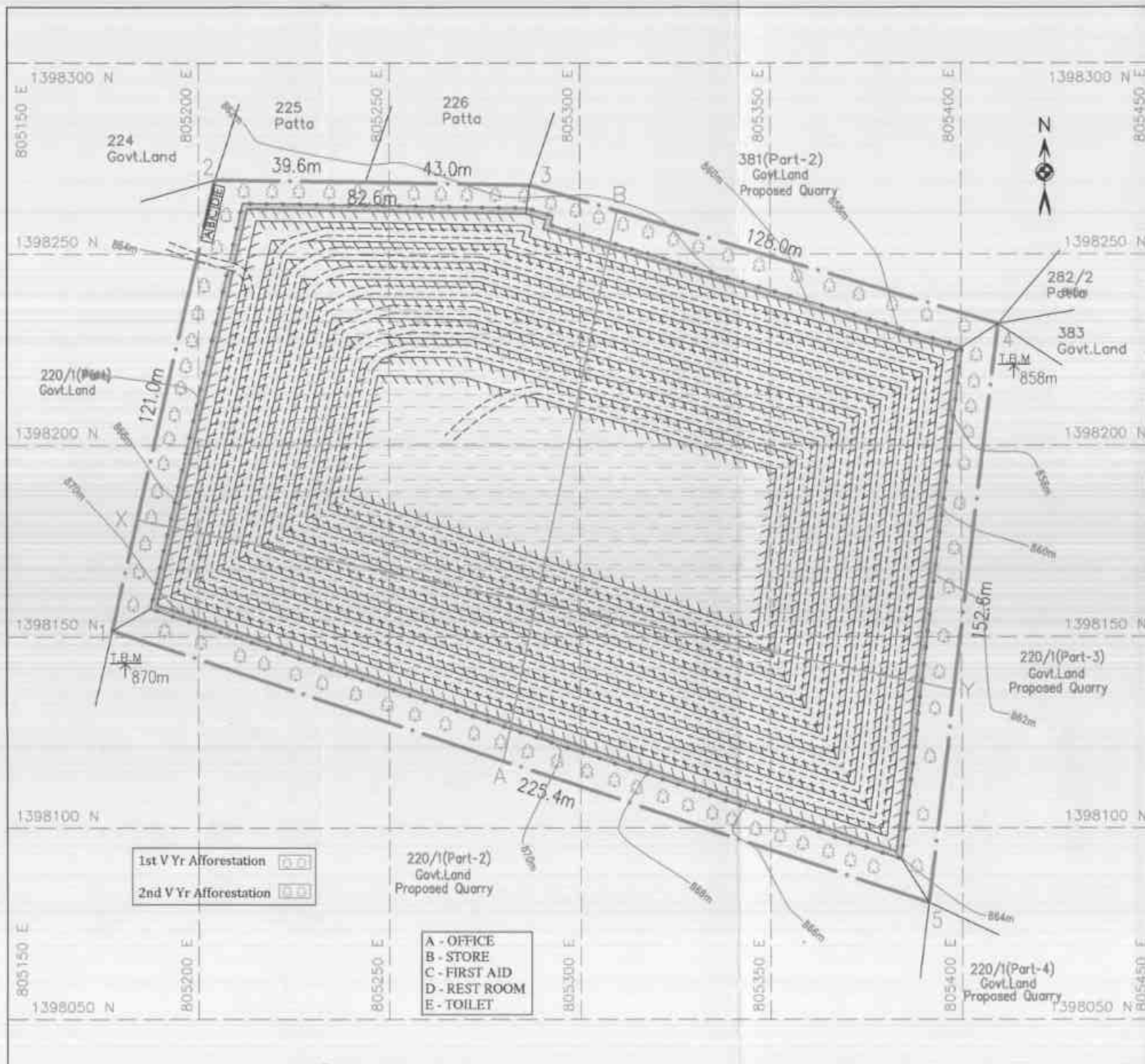
CONCEPTUAL & FINAL MINE CLOSURE PLAN

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S. NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
ROP/CNR/270/201108 A



1st V Yr Afforestation

2nd V Yr Afforestation

220/1(Part-2)  
Govt.Land  
Proposed Quarry

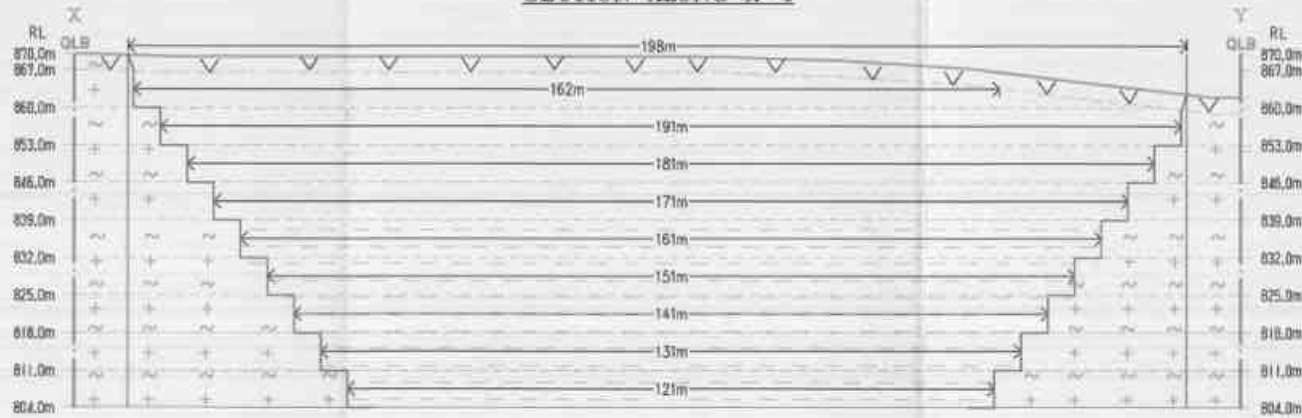
A - OFFICE  
B - STORE  
C - FIRST AID  
D - REST ROOM  
E - TOILET



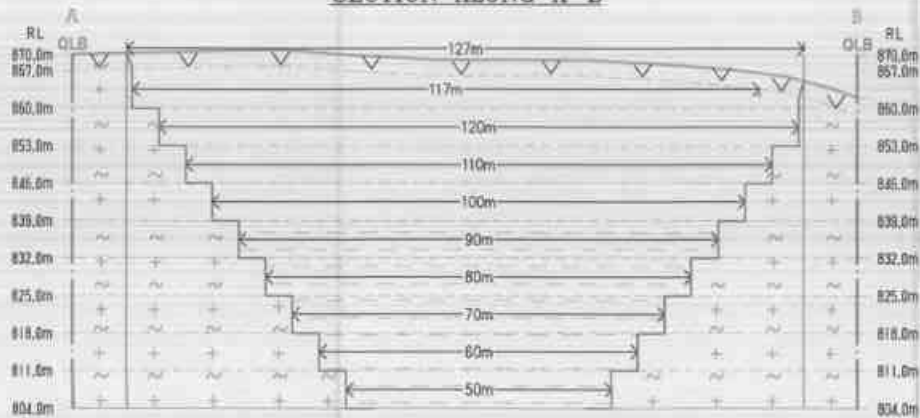


Surface Ground Level Above Height = 12m  
 Surface Ground Level Below Depth = 54m

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



**ULTIMATE PIT DIMENSION**  
 = 198.0m(L) X 127.0m(W) X 54.0m(D)

**MINABLE RESERVES**

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)	Topsoil (Gravel) in Cu.m.
XY-AB	I	198	127	3			75438
	II	162	117	7	132678	132678	
	III	191	120	7	160440	160440	
	IV	181	110	7	139370	139370	
	V	171	100	7	119700	119700	
	VI	161	90	7	101430	101430	
	VII	151	80	7	84560	84560	
	VIII	141	70	7	69090	69090	
	IX	131	60	7	55020	55020	
	X	121	50	7	42350	42350	
<b>Total=</b>					<b>904638</b>	<b>904638</b>	<b>75438</b>

**PLATE NO:VII-A**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**

M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m & 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE
- ULTIMATE PIT SLOPE
- PROPOSED WATER STORAGE

**CONCEPTUAL & FINAL MINE CLOSURE SECTIONS**

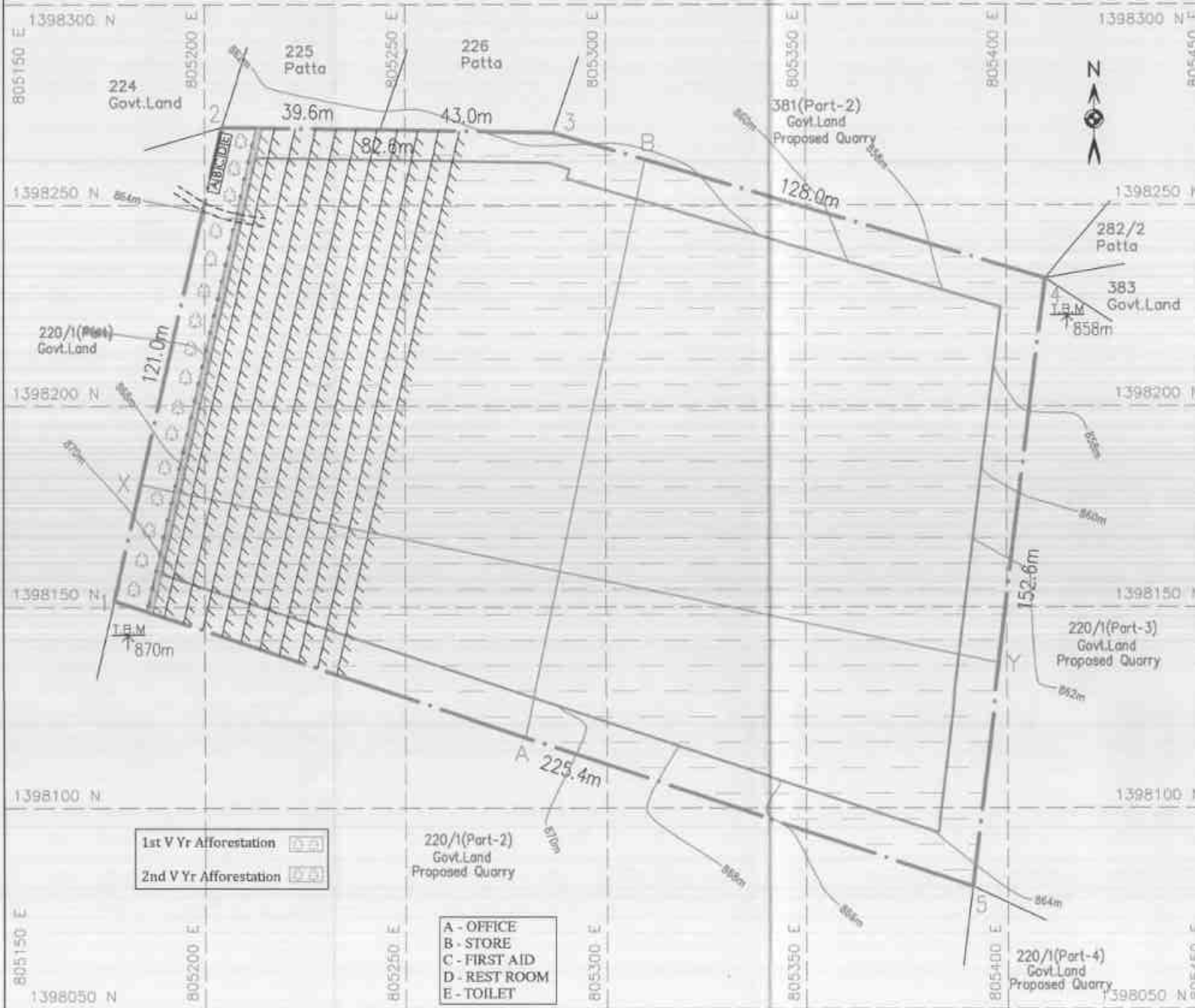
SCALE 1:1000

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNH/270/2011

**Conceptual Plan and Sections Showing Regulation to Quarry Common Boundary as Stipulated in Rule (III) of Metalliferous Mines Regulations 1961, after getting Permission from DGMS, if needed.**



1st V Yr Afforestation (A5.7A)  
2nd V Yr Afforestation (A5.7B)

220/1 (Part-2) Govt. Land Proposed Quarry

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



**PLATE NO** 110A  
**DATE OF SURVEY** 25.04.2022

**APPLICANT ADDRESS:**  
M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**  
EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
7.5m & 10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	
FENCING	
PARAPET WALL	
ULTIMATE PIT LIMIT	
PROPOSED WATER STORAGE	

**CONCEPTUAL PLAN  
COMMON BOUNDARY**

**SCALE 1:1000**

**Prepared By:**  
I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

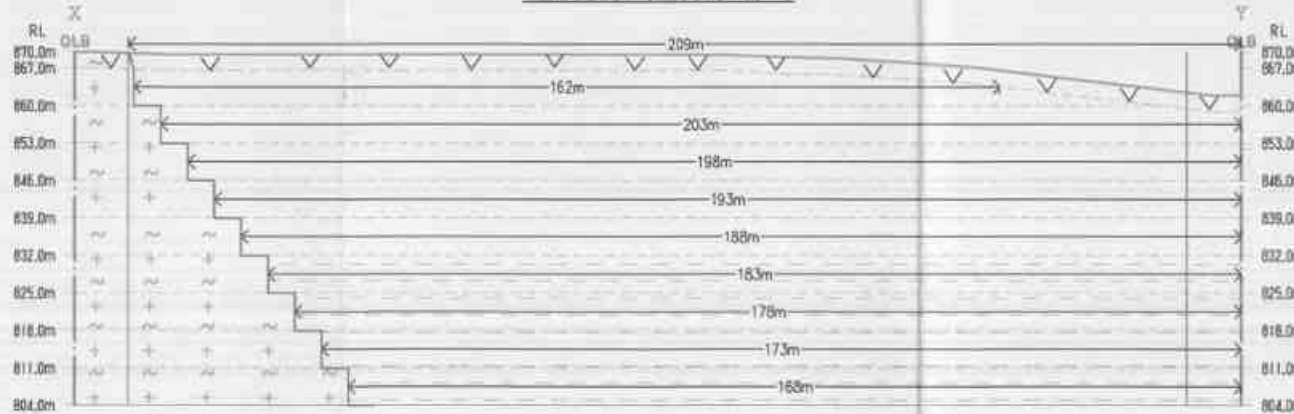
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/2011

Conceptual Plan and Sections Showing Regulation to Quarry Common Boundary as Stipulated in Rule (III)3 of Metalliferous Mines Regulations 1961, after getting Permission from DGMS, if needed.

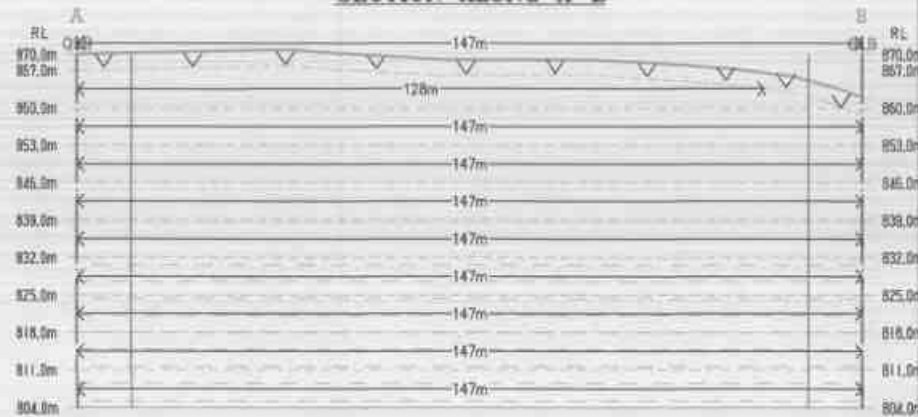


Surface Ground Level Above Height - 12m  
Surface Ground Level Below Height - 54m

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



ULTIMATE PIT DIMENSION  
= 209.0m(L) X 147.0m(W) X 54.0m(D)

**MINABLE RESERVES - COMMON BOUNDARY**

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m.(100%)	Topsoil (Gravel) in Cu.m.
XY-AB	I	209	147	3			92169
	II	162	128	7	145152	145152	
	III	203	147	7	208887	208887	
	IV	198	147	7	203742	203742	
	V	193	147	7	198597	198597	
	VI	188	147	7	193452	193452	
	VII	183	147	7	188307	188307	
	VIII	178	147	7	183162	183162	
	IX	173	147	7	178017	178017	
	X	168	147	7	172872	172872	
<b>Total=</b>					<b>1672188</b>	<b>1672188</b>	<b>92169</b>

**PLATE NO:VIII-A**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**

M/s. NATURAL STONE INDUSTRY,  
D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
PUDHUPETTAI,  
AGASIPALLI,  
KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m & 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE
- ULTIMATE PIT SLOPE
- PROPOSED WATER STORAGE

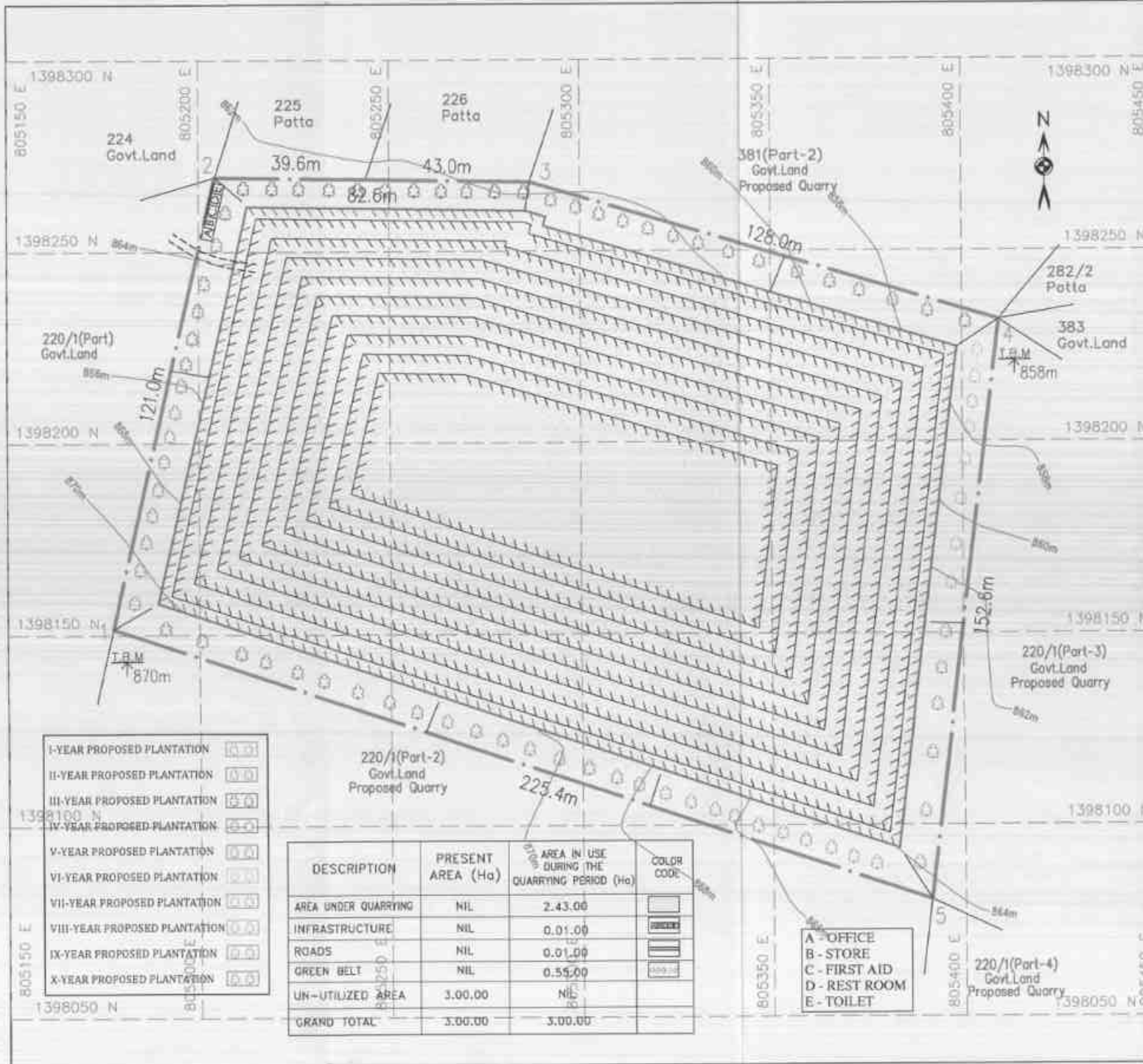
**CONCEPTUAL SECTIONS  
COMMON BOUNDARY**

SCALE 1:1000

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

S. NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CAR/270/2016/A



**PLATE NO:IX**  
 DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. NATURAL STONE INDUSTRY,  
 D.No.1/518, SENTHIL NAGAR, Vth CROSS,  
 PUDHUPETTAI,  
 AGASIPALLI,  
 KRISHNAGIRI DISTRICT - 635 002.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	[Symbol]
7.5m & 10.0m SAFETY DISTANCE	[Symbol]
TEMPORARY BENCH MARK	[Symbol]
TOP SOIL (GRAVEL)	[Symbol]
ROUGH STONE	[Symbol]
CONTOUR LINE	[Symbol]
QUARRY ROAD	[Symbol]
MINE LAYOUT	[Symbol]

**PROGRESSIVE MINE CLOSURE PLAN**

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNN/270/2016/A

വിളംബരത്തിന് ശേഷം, ജൂൺ മാസം, പട്ടണി  
 മന്ദലം, 85- ഗോപനപാലി വില്ലേജ് 48 അട 220/  
 (Part-1) 3.00.0 മെട്രിക്-ൽ താഴെ മുന്ന  
 M/s Blatural stone Industry-ൽ നിന്നു ലഭിക്കുന്ന  
 കിടപ്പ് 500 മെട്രിക് മെടർ നിയമം, മൂലം,  
 ഗുണമേന്മ, മഴുപുറംകൊണ്ടിടുന്ന, പുറത്തു കിടത്തുന്ന,  
 മറ്റു കലകളാണെന്നു തിന്നുന്ന അങ്ങു മറ്റു മെട്രിക്  
 മിന്നത്താൽ മറ്റു 48 മുതലായവയെ നിയമിച്ചിട്ടു  
 അങ്ങു പത്തു മെട്രിക് മെടർ നിയമിച്ചിട്ടു.

ഒ.എ. മൂലം  
 Village Administrator  
 No. 85, Gopanapalli, Vill.  
 Hosur Taluk, Krishnagiri Dist.

**PTOPOGRAPHICAL VIEW OF GOPANAPALLI ROUGHSTONE**  
**QUARRY LEASEAPPLIED AREA**



Name of the Applicant : M/s. Natural Stone Industry,  
Address : D.No.1/518, Senthil Nagar,  
Vth Cross, Pudupettai,  
Agasipalli, Krishnagiri District,  
Tamil Nadu State – 635 002.

**LOCATION DETAILS**

Extent : 3.00.0ha  
S.F.No. : 220/1 (Part-1)  
Village : Gopanapalli  
Taluk : Hosur  
District : Krishnagiri  
State : Tamil Nadu

Signature of the applicant

For M/s. Natural Stone Industry

*B. Basappan*

**B. Basappan**  
**For Natural Stone Industry**  
(Managing Partner)

**Partner.**

(Village Administrative Officer)

Attestation

*Chinn. Shivan*  
Village Administrative Officer  
No. 35, Gopanapalli, VI  
Hosur Taluk, Krishnagiri District





# VISHNU EXPLOSIVES

Blasting Contractor



Office : Door No. 273-A, Keelpaiyur, Paiyur Village, Kaveripattinam, Krishnagiri Dt. Pin - 635 112.  
Magazine at : SF No. 344/3B, Paiyur Village, Kaveripattinam, Krishnagiri Dt.  
Cell : 98427 44073, 99655 44073, 94437 44073

*Ref:*

To

M/s, Natural Stone Industry,  
D.NO.1/518, Senthil Nagar,  
Vth Cross, Pudupettai,  
Agasipalli, Krishnagiri District,  
Tamil Nadu State-635 002.

Sub: Willingness to do Explosives Blasting Works – Reg.

With respect to the above subject, we would like to introduce myself as the Explosives Blasting Contractors, for which our LICENCE NO: E/HQ/TN/22/335(E64278) & E/SC/TN/22/463(E37227) S.F.No.344/3B, Paiyur Village, Krishnagiri Taluk magazine is situated in No.273-A, Keel Paiyur Village, Kaveripattinam, Krishnagiri, Tamilnadu-635 112.

We were engaged in professional blasting contract works with all facilities and License holders to carry out blasting works in specified time and period covered under Explosives Rules, 2008.

We kindly request yourself to engage us to do Explosives Blasting Works in your proposed Rough stone Quarry situated at S.F.No: 220/1 (Part- 1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District over an extent of 3.00.00 hectares.

SERVING BEST AT ALL TIMES

Thanking you.

For VISHNU EXPLOSIVES,

Enclosure: Magazine License Copy.

## अनुज्ञापित प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 को 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 अनुज्ञापित  
Licence to possess - (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazineअनुज्ञापित सं. (Licence No.): E/HQ/TN/22/335(E64278)  
वार्षिक फीस रूपए (Annual Fee Rs): 14000/-

1. Licence is hereby granted to

M/A Vishnu Explosives (अधिभागी / Occupier : Shri G.V.Sai Supramaniam), S/o V.G. Visshwanathan, Plot No. 273-A Keel  
Paiyur, Paiyur Village, Kaveripattinam PO., Town/Village - Kaveripattinam, District-KRISHNAGIRI, State-Tamil Nadu, Pincode -  
635112

को अनुज्ञापित अनुदत्त की जाती है।

2. अनुज्ञापितधारी की प्राप्ति | Status of licensee : Proprietorship Firm

3. अनुज्ञापित निम्नलिखित प्रयोजनों के लिए विधिमान्य है।

Licence is valid only for the following purpose

possess for use of Safety Fuse, Detonating Fuse, Nitrate mixture - Slurry and  
Emulsion Explosives, Detonators, - के उपयोग के लिए

4. अनुज्ञापित विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।

Licence is valid for the following kinds and quantity of explosives - (क) (a)

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 - Slurry and Emulsion Explosives	2, 0	0	7600 Kg.
2.	Detonators	6, 3	0	44000 Nos.
3.	Safety Fuse	6, 1	0	3000 Mtrs
4.	Detonating Fuse	6, 2	0	30000 Mtrs

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापित के लिए।

(b) Quantity of explosives to be purchased in a calendar month applicable for licensed premises article 3(b) and (g)

20 times  
as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापित परिसर की पृष्ठ होती है।

The licensed premises shall conform to the following drawing(s).

रेखाचित्र क्रम (Drawing No.) E/HQ/TN/22/335(E64278)

दिनांक (Date) 11/10/2021

6. अनुज्ञापित परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:

Survey No. 344/3B, ग्राम (Town/Village) : Paiyur Village, Kaveripattinam

जिला (District) KRISHNAGIRI

राज्य (State) Tamil Nadu

पोलिस थाना (Police Station) : Kaveripattinam

दूरभाष (Phone) 9842744073

ई. मेल (E-Mail)

पिनकोड (Pincode) 635112

फैक्स (Fax)

7. अनुज्ञापित परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।

The licensed premises consist of following facilities.

in magazine room, a lobby and a detonator storage room.

8. अनुज्ञापित समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और विस्फोटक अधिनियम, 2008 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित  
उपबंधों 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 Annexure.

- उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शाते हुए)।  
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
- अनुज्ञापित प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापित की शर्तों और अतिरिक्त शर्तों।  
Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापित तारीख 31 मार्च 2015 तक विधिमान्य रहेगी। This licence shall remain valid till 31/03/2015 at March 2015.

यह अनुज्ञापित, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 1 के प्रतिनिधि सेटों के अधीन तथा उपवर्णित इस अनुज्ञापित की शर्तों का अधिकतम करने  
या यदि अनुज्ञापित परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरणों के अनुसंधान नहीं पाए जाते प्रमाणित या प्रतिसंहत की जा सकती है, जहाँ 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 - 22/08/2012

मुख्य विस्फोटक नियंत्रक | Chief Controller of Explosives

## Amendments :

- Change in Postal Address dated : 26/04/2017
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 02/04/2018
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 24/04/2019
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 11/10/2021
- Amendment in Drawings/Facilities/Premises dated : 11/10/2021

## Transfers :

- Change in Licensee Name/Address/Status dated : 08/10/2021

नवीनीकरण के पृष्ठांकन 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 स्टांप Signature of licensing authority and stamp
28/02/2020	31/03/2025	Sd/- Controller of Explosives, Vellore

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाना या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।  
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.Note :- This is system generated document does not require physical signature.  
Applicant may take printout for their records.





THIRU.DEEPAK S.BILGI, I.F.S.,  
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT  
ASSESSMENT AUTHORITY – TAMIL NADU

3rd Floor, Panagal Maaligai,  
No.1, Jeenis Road, Saidapet,  
Chennai-15.

Phone No. 044-24359973

Fax No. 044-24359975

**TERMS OF REFERENCE (ToR)**

**Lr No.SEIAA-TN/F.No.9945/ToR-1480/2023 Dated:22.06.2023.**

To

M/s. Srre Krish Rough Stone  
D.No: 212, Goundarkottai, Karukkansavadi,  
Errahalli Post,  
Kaveripattinam,  
Krishnagiri District-635112.

Sir / Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Proposed Rough Stone Quarry lease over an extent of 3.00.0Ha S.F.No.220/1 (Part-3), Gopanapalli Village, Hosur Taluk, Krishnagiri District by M/s. Srre Krish Rough Stone - 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/418435/2023, dt:15/02/2023.  
2. Your application submitted for Terms of Reference dated: 29.03.2023.  
3. Minutes of the 382<sup>nd</sup> SEAC Meeting held on 09.06.2023.  
4. Minutes of the 632<sup>nd</sup> SEIAA meeting held on 21.06.2023&22.06.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

The proponent, M/s. Srre Krish Rough Stone has submitted application for Terms of Reference (ToR) with public Hearing on 29.03.2023, in Form-I, Pre- Feasibility report for the Proposed Rough

  
MEMBER SECRETARY  
SEIAA-TN

Stone Quarry lease over an extent of 3.00.0Ha S.F.No.220/1 (Part-3), Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.

**Discussion by SEAC and the Remarks:-**

**Proposed Rough Stone Quarry lease over an extent of 3.00.0Ha S.F.No.220/1 (Part-3), Gopanapalli Village, Hosur Taluk, Krishnagiri District by M/s. Srre Krish Rough Stone - For Terms of Reference.**

**(SIA/TN/MIN/418435/2023, dt:15/02/2023)**

The proposal was placed in the 382<sup>nd</sup> SEAC Meeting held on 09.06.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following:

1. The project proponent, M/s. Srre Krish has applied for Terms of Reference for the Rough Stone Quarry lease over an extent of 3.00.0Ha S.F.No.220/1 (Part-3), Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
3. As per the precise area communication the lease period is for 10 Years. The mining plan is for 10 Years. The production for 1<sup>st</sup> Five Years shall not to exceed 512190 m<sup>3</sup> of Rough Stone & 68760 m<sup>3</sup> of Topsoil and the ultimate depth of 38m (10m AGL & 28m BGL).

Based on the presentation and details furnished by the project proponent, **SEAC decided to grant Terms of Reference (TOR) with Public Hearing** 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 photographs of fencing, greenbelt and garland drain.
2. The PP shall submit revised mining plan approval from Dept. of Geology & Mining in regard to the bench height of 5m each instead of 7m proposed bench height.
3. AD mines letter for the existing pit with details of earlier lease period and pit dimension.
4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m 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.
5. The study on impact of the dust & other environmental impacts due to proposed quarrying operations on the Rose flowers being cultivated through greenhouse nearby.

  
MEMBER SECRETARY  
SEIAA-TN  


6. The Proponent shall furnish photographs of greenbelt, fencing and garland drain around the boundary of the proposed quarry.
7. The proponent shall furnish a revised EMP budget for entire life of proposed mining.
8. The revised and corrected version of the Production & Development Plan shall be produced with showing the safety berm width of 2m is maintained for the bench height of 2m distinctly in the gravel formation and it shall be duly signed by the concerned QP & approved by the concerned AD (Geology & Mining).
9. 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 prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease during the time of appraisal for obtaining the EC.
  - Since the quarry is existing with a depth of excavation varies from 6 m to 19 m without benches of appropriate dimension (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall carry out a 'Slope Stability Assessment' studies for the existing conditions of the quarry wall by involving any of these reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research (CIMFR) / Dhanbad, NIRM - Bengaluru, IIT-Madras, NIT Surathkal – Dept of Mining Engg.. The above studies shall spell out 'a 'Slope Stability Action Plan' for the proposed quarry covering the existing condition of the quarry wall including the overall pit slope angle where the proposed depth exceeds 30 m and it shall cover the aspects of stability of quarry walls including the access ramp keeping the benches intact.
10. If the blasting operation is to be carried out, the PP shall present a conceptual design for carrying out the NONEL initiation based controlled blasting operation including the line drilling & muffle blasting techniques and a Simulation Model indicating the anticipated Blast-induced Ground Vibration levels in the proposed quarry as stipulated by the DGMS Circular No.7 of 1997, during the EIA Proposal.
11. 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.
12. 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.

  
MEMBER SECRETARY  
SEIAA-TN

13. 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.
14. 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.
  - a. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
  - b. Quantity of minerals mined out.
  - c. Highest production achieved in any one year
  - d. Detail of approved depth of mining.
  - e. Actual depth of the mining achieved earlier.
  - f. Name of the person already mined in that leases area.
  - g. If EC and CTO already obtained, the copy of the same shall be submitted.
  - h. 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 PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the prosed quarry based on the volume of rock handled & area of excavation.
18. 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.
19. 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.
20. 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

  
MEMBER SECRETARY  
SEIAA-TN  


- of Mines Act 1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
21. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
  22. 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.
  23. 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.
  24. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
  25. 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.
  26. 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.
  27. 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.

  
MEMBER SECRETARY  
SEIAA-TN  


28. 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.
29. Impact on local transport infrastructure due to the Project should be indicated.
30. 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.
31. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
32. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
33. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
34. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
35. 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.
36. 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 and local school/college authorities. 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.
37. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site-specific choices. The proponent shall earmark the 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.
38. A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.

  
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39. 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.
40. 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.
41. 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.
42. 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.
43. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
44. 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.
45. 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.
46. 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.
47. 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.

  
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**Appendix -I**  
**List of Native Trees Suggested for Planting**

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	வில்வம்
2	<i>Adenaanthera pavonina</i>	Manjadi	மஞ்சாடி, ஆனைக்குன்றிமணி
3	<i>Albizia lebeck</i>	Vaagai	வாளை
4	<i>Albizia amara</i>	Usil	உசில்
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathu	ஆத்தி
7	<i>Bauhinia tomentos</i>	Iruvathu	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuma	கட்டிமரம்
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax ceiba</i>	Ilavu, Sevvilavu	இலவ
12	<i>Calophyllum inophyllum</i>	Punnai	புள்ளை
13	<i>Cassia fistula</i>	Sarakondrai	சரங்கொன்றை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொன்றை
15	<i>Chloroxyylon sweitenia</i>	Purasamaram	பரசு மரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Manjallavu	கோங்கு, மஞ்சள் இலவ
17	<i>Cordia dichotoma</i>	Naruvuli	நருவளி
18	<i>Creteva adansonii</i>	Mavalingum	மாவிளங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உசா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitruzha	சிறு உசா
21	<i>Diospyro sebennu</i>	Karungali	கருங்காலை
22	<i>Diospyro schloroxyion</i>	Vaganai	வாகளை
23	<i>Ficus amplissima</i>	Kalltchu	கல் இச்சி
24	<i>Hibiscus tiliacou</i>	Aatrupoovarasu	ஆறுறுப்புவரசு
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயா மரம், ஆயில்
27	<i>Lamnea coromandelica</i>	Odhiam	ஓதியம்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetraphylla</i>	Neikottaimaram	நெய் கொட்டை மரம்
30	<i>Limonia acidissima</i>	Vila maram	வில்லா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	பிரம்பா பிச்சிப்படை
32	<i>Madhuca longifolia</i>	Illuppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழ்மரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வேளளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	எச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	பங்கம்

  
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40	<i>Premna mollissima</i>	Munnai	முள்ளை
41	<i>Premna serratifolia</i>	Narumunai	நறு முள்ளை
42	<i>Premna tomentosa</i>	Malappoovarasu	மலை பூவரசு
43	<i>Pterocarpus euclea</i>	Vanru maram	வள்ளி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Venuarigu Tada	வெண்ணாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	புலவு
47	<i>Putterlickia roxburghii</i>	Karpala	கறிபாலா
48	<i>Salvadora persica</i>	Ugaa Maram	ஊகா மரம்
49	<i>Sapindus emarginatus</i>	Marupungan, Soapukai	மணிப்பங்கன சோப்புக்காய்
50	<i>Sarcia asoca</i>	Asoca	அசோகா
51	<i>Streblus aspe</i>	Piray maram	பிராய மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	எட்டி
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேத்தான் கொட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia belleric</i>	Thandri	தான்றி
56	<i>Terminalia arjuna</i>	Ven marudhu	வெண் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Diospeira populnea</i>	Puvarasu	பூவரசு
59	<i>Walnutfoliata</i>	valvura	வாலசூர்
60	<i>Wrightia tinctoria</i>	Veppalai	வெப்பாளல்
61	<i>Psithocellubium dalec</i>	Kodukkapuli	கொடுக்காட்புளி

**Appendix-II**

**Display Board**

(Size 6' x5' with Blue Background and White Letters)

சுரங்கம்

எங்களுக்குள் துவாரி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அனுமதி கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது. மாவட்ட தேதியிடப்பட்டு சுற்றுச்சூழல் அனுமதி தேதி வரை செல்லத்தக்கதாக உள்ளது.

புகளம் பகுதி வளர்ச்சி மேம்பாட்டுக்கான சுரங்கத் திட்டம்	இவாரியின் எல்லைவயை சுற்றி வேலி அமைக்க வேண்டும் சுரங்கப்பள்ளத்தில் ஆழம் கணமட்டத்திலிருந்து மீட்டர்கள் மிகாமல் குகை வேண்டும் சுற்றுநிலை மாசு ஏற்படாதவாறு சுரங்க பணிகளை மேற்கொள்ள வேண்டும்.
நடப்பட்டு பாாமரிக்கப்படவேண்டிய மாசுகள் எண்ணிக்கை	வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீரை முறையாக உணவளி வளிகளின் மூலமாக கவ்வப்போது தெளிக்க வேண்டும். இளரச்சல் அளவையும் தூசி மாசுபாட்டையும் இன்றலபதற்காக இவாரியின் எல்லைவயை சுற்றி அடர்த்தியான புகளம் பகுதியை ஏற்படுத்த வேண்டும்.
சுரங்கத்தில் வெடி எவகமடொழுது நிலஅதிர்வுகள் ஏற்படாதவாறும் மற்றும் சுரங்க பறக்காதவாரும் பாதுகாப்பு நடவடிக்கைகளை உணவியபாக செயல்படுத்தப்பட வேண்டும்.	
சுரங்கத்தில் இருந்து ஏற்படும் இளரச்சல் அளவு 85 டி.சி.பி.எஸ். (dBA) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த கட்டுப்பாடுகளை மேற்கொள்ள வேண்டும்.	
சுரங்க சட்ட விதிகள் 1956 கீழ் சுரங்கத்தில் உள்ள பணியார்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்குவதோடு கைதூர்முயா கழிப்பறை வசதிகளை செய்து தர வேண்டும்.	
கொம்பு அல்லது பட்டுசாயத்து வழியாக வாகனங்கள் செல்லும் சாலைவயை தொடர்ந்து நுங்கு பாாமரிக்க வேண்டும்.	
சுரங்கப்பணிகளால் அருகில் உள்ள விவசாய பணிகள் மற்றும் நீரிழைகள் பாதிக்கப்படக் கூடாது.	
சுரங்கப்பணிகளால் பாதிக்கப்படாமல் குடிப்பாசை உருவி செயல்பட வாகனவின் சேதத்தை தீர்ப்பு தராததனை தொடர்ந்து அணுகணிக்க வேண்டும்.	
சுரங்கத்திலிருந்து களிம பொருட்களை எடுத்துச் செல்வது கிராம மக்களுக்கு எந்த சிரமத்தினையும் ஏற்படுத்தாதவாறு பாதுகாப்பாரும் மற்றும் சுற்றுச்சூழல் பாதுகாப்பாத வண்ணம் வாகனங்கள் இயக்க வேண்டும்.	
சுரங்கப்பணிகள் முடிக்கப்பட்டவுடன் சுரங்க மூடல் திட்டத்தில் உள்ளவாறு சுரங்கத்தினை மூட வேண்டும்.	
சுரங்க நடவடிக்கைகளை முடித்தபின்னர் சுரங்கப் பகுதி மற்றும் சுரங்க நடவடிக்கைகளால் இடைபூறு ஏற்படக்கூடிய வேறு எந்தப் பகுதியையும் மறுகட்டுமானம் செய்து துவரங்கள் மிஸ்திகள் ஆகியவற்றின் வளர்ச்சிக்கு ஏற்ற வகையில் புகளப்படுத்தியை உருவாக்க வேண்டும்.	
முழுமையான நிபந்தனைகளை அறிய பாறிவேஷ (http://www.seiaa.in) என்கிற இணையதளத்தைப் பார்க்கவும். மேலும் எந்தவித சுற்றுச்சூழல் சார்ந்த புகள்களுக்கு செல்லையில் உள்ள சுற்றுச்சூழல் மற்றும் வன அமைச்சத்தின் முருபகிணைந்த வட்டார அலுவலகம்: 044 - 20222225 (அல்லது) தமிழ்நாடு மாசு கட்டுப்பாடு வாரியத்தின் மாவட்ட சுற்றுச்சூழல் பொரியாளரை அணுகவும்.	

  
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**Discussion by SEIAA and the Remarks:-**

The proposal was placed in the 632<sup>nd</sup> Authority meeting held on 21.06.2023&22.06.2023. The Authority noted that this proposal was placed for appraisal in this 382<sup>nd</sup> SEAC meeting held on 09.06.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the conditions in '**Annexure B**' of this minute.

1. The project proponent shall prepare mine closure plan considering quantity of Topsoil & Weathered rock. If any.
2. 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.

**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.,
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.

  
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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.
  - 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.

  
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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.

  
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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.

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.

  
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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 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

  
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hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study

  
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area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted

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- accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
  - 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
  - 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
  - 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
  - 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
  - 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
  - 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers

  
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present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed

  
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along with budgetary allocations.

- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
  - a) Executive Summary of the EIA/EMP Report
  - b) All documents to be properly referenced with index and continuous page numbering.
  - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - e) Where the documents provided are in a language other than English, an English translation should be provided.
  - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
  - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

  
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- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be 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

  
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Mining of Minerals published February 2010.

11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.

  
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31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2<sup>nd</sup> December, 2009, 18<sup>th</sup> March 2010, 28<sup>th</sup> May 2010, 28<sup>th</sup> June 2010, 31<sup>st</sup> December 2010 & 30<sup>th</sup> 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 29<sup>th</sup> 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, 1<sup>st</sup>& 2<sup>nd</sup> 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, Krishnagiri District.
7. Stock File.

**From**  
Dr. S.Vediappan, M.Sc.,Ph.d.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**  
M/s. Srre Krish Rough Stone,  
D.No. 212, Goundarkottai,  
Karukkansavadi,  
Errahalli Post, Kaveripattinam,  
Krishnagiri - 635 112.

**Roc.No.537/2022/Mines Dated:18.07.2022**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli Village- Govt Poramboke land in S.F.No. 220/1(Part-3) Over an extent of 3.00.0 Hects - Tender Cum Auction conducted - M/s. Srre Krish Rough Stone declared as highest bidder - Mining Plan approved - Other quarry situated in 500 mtrs radial distance - Details furnished - reg.

**Ref:**

1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.
2. This Office Letter No.537/2022/Mines dated: 22.04.2022.
3. Draft Mining plan submitted by M/s. Srre Krish Rough Stone, dated: 11 .07.2022
4. This Office Letter No.537/2022/Mines dated: 18.07.2022

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 220/1(Part-3) over an extent of 3.00.0 Hects of Gopanapalli Village, Hosur Taluk.

3. M/s. Srre Krish Rough Stone has quoted highest lease amount and hence he has been declared as highest bidder for the grant of quarry lease for quarrying Rough stone over an extent of 3.00.0 Hects of government lands in S.F.No. 220/1(Part-3) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 year under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, precise area communication has been issued to the applicant vide letter dated: 22.04.2022 with a



direction to submit approved mining plan and Environment Clearance.

4. Accordingly, M/s. Srre Krish Rough Stone had submitted 03 copies of draft Mining Plan vide letter dated:11.07.2022 and the same has been approved vide this office letter dated:18.07.2022. In addition to that the details of other quarries situated within 500 mts radial distance from the subject quarry is furnished as follows.

**I. Details of Existing quarries.**

Sl No	Name of the lessee	Village & Taluk	Mineral	S.F No.	Extent in Het	GO No.& Date	Lease period.
1.	P.Venkata reddy,S/o. Pedha Obul Reddy, 3/213, Kodipalli Village, Kempat, Muttur Post, Denkanikottai, Krishnagiri.	Hosapuram Village, Denkanikottai Taluk	Rough Stone	457 (Part-2)	3.70.0	Rc.No. 112/2016/ Mines Dated: 26.02.2020	26.02.2020 to 25.02.2030.

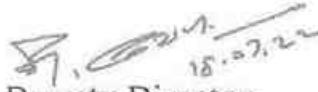
**II. Details of abandoned/Old quarries.**

Sl. No.	Name of the lessee	Village	S.F No.	Extent in Het	GO No.& Date	Lease period.
	----- Nil -----					

**III. Details of Proposed quarries**

Sl No	Name of the lessee	Village & Taluk	Mineral	S.F No.	Extent in Het	GO No.& Date	Lease period.
1.	Thiru. Srre Krish Rough Stone	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -3)	3.00.0	Rc.No. 537/2022/ Mines Dated: 21.04.2022	Instant Proposal
2.	M/s. Natural Stone Industry	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -1)	3.00.0	Rc.No. 535/2022/ Mines Dated: 21.04.2022	Precise area given
3.	Thiru.Vijaya Kumar	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -4)	2.00.0	Rc.No. 538/2022/ Mines Dated: 26.04.2022	Precise area given

4.	Thiru.S.Raghu	Gopanapalli Village, Hosur Taluk	Rough Stone	381 (Part-1)	1.30.0	Rc.No. 539/2022/ Mines dated: 04.05.2022	Precise area given
5	Thiru.Nithin Reddy	Gopanapalli Village, Hosur Taluk	Rough Stone	220/1 (part -2)	3.00.0	Rc.No. 536/2022/ Mines Dated: 05.05.2022	Precise area given
6.	Thiru. Dhivakar	Gopanapalli Village, Hosur Taluk	Rough Stone	381/1 (part -2)	1.50.0	Rc.No. 540/2022/ Mines Dated: 22.04.2022	Precise area given

  
 Deputy Director,  
 Dept of Geology and Mining,  
 Krishnagiri.

Copy to :-

  
 The Chairman,  
 Tamil Nadu State Environment  
 Impact Assessment Authority,  
 3<sup>rd</sup> Floor, Panakal Maligai,  
 No. 1 Jeenes Road, Saidapet, Chennai -15.

**From**

Dr.S.Vediappan,M.Sc.,Ph.D.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**

M/s. Srre Krish Rough Stone,  
D.No. 212, Goundarkottai,  
Karukkansavadi,  
Errahalli Post, Kaveripattinam,  
Krishnagiri – 635 112.

**Re.No.537/2022/Mines Dated: 18.07.2022.**

**Sir,**

**Sub:** Mines and Minerals – Rough stone - Krishnagiri District – Hosur Taluk – Gopanapalli Village- Govt Poramboke land in S.F.No. 220/1(Part-3) Over an extent of 3.00.0 Hects – Tender Cum Auction conducted – M/s. Srre Krish Rough Stone declared as highest bidder – Precise area communicated - Draft Mining Plan submitted for approval - Approved - reg.

**Ref:** 1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.  
2. This Office Letter No.537/2022/Mines dated: 22.04.2022.  
3. Draft Mining plan submitted by M/s. Srre Krish Rough Stone, dated: 11.07.2022.

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 220/1(Part-3) Over an extent of 3.00.0 Hects of Gopanapalli Village, Hosur Taluk, M/s. Srre Krish Rough Stone has quoted highest lease amount and hence he has been declared as successful bidder.

3. Accordingly, M/s. Srre Krish Rough Stone has been directed to submit the mining plan for approval and to obtain Environmental Clearance for quarrying Rough stone over an extent of 3.00.0 Hects of Government Poramboke land in S.F.No. 220/1(Part-3) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 (Ten) years

under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

4. In this regard, the bidder M/s. Srre Krish Rough Stone had submitted 03 copies of draft Mining Plan vide letter dated: 11.07.2022 and the same has been examined in detail and it is found correct.

6. As per the mining plan the year wise production for the proposed first and second five years are as follows.

<b>First Five Years</b>	<b>Year</b>	<b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b>	<b>Top Soil (Gravel)in (m<sup>3</sup>)</b>
	1 <sup>st</sup> Year	117726	68760
	2 <sup>nd</sup> year	72772	0
	3 <sup>rd</sup> year	125454	0
	4 <sup>th</sup> year	106764	0
	5 <sup>th</sup> year	89474	0
	<b>Total</b>	<b>512190</b>	<b>68760</b>

<b>Second Five Years</b>	<b>Year</b>	<b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b>	<b>Top Soil (Gravel)in (m<sup>3</sup>)</b>
	1 <sup>st</sup> Year	36792	0
	2 <sup>nd</sup> year	36792	0
	3 <sup>rd</sup> year	59094	0
	4 <sup>th</sup> year	46004	0
	5 <sup>th</sup> year	34314	0
	<b>Total</b>	<b>212996</b>	<b>0</b>

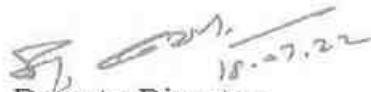
6. Hence, as per the powers delegated under Rule 42 of TNMMCR, 1959 and also as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated:19.11.2012, the said mining plan submitted by the M/s. Srre Krish Rough Stone is here by approved subject 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 Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.
- iii. That the mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.
- iv. All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.
- v. The applicant should get prior Environmental clearance from the appropriate authority and should submit it to the District Collector, Krishnagiri.
- vi. Provisions of the Mines Act 1952 and the rules and regulation made there under including submission of notice of opening, appointment of manager and other statutory officials has required under Mines Act 1952 shall be complied with.
- vii. Provisions made under the Mines and Minerals (Development and Regulation) Acts 1957, amended Act 2015 made there under shall be complied with.
- viii. This approval of Mining Plan is restricted to the mining lease area only as shown in the plan.
- ix. The earlier instances of irregular / illegal quarrying, if any shall not be regularized through the approval of this document.

- x. The applicant shall remit penalty /cost of the mineral /other dues if any.
- xi. Every Mining Plan duly approved under rule 41(9) of TNMMCR, 1959 shall be valid for a period of five years. Further, the applicant shall submit modification in the mining plan if any, review the mining plan and submit scheme of mining plan for the next five years of the lease if any as per TNMMCR 1959.
- xii. Non adherence to any condition set out above, the approval shall be deemed to have been withdrawn with immediate effect.

  
18.07.22  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

  
18/7/22

  
18/7/22

**Copy submitted to** : 1. The Commissioner,  
Dept of Geology and Mining,  
Guindy, Chennai -32.

# MINING PLAN



FOR

GRANT OF ROUGH STONE QUARRY LEASE IN  
GOVERNMENT PORAMBOKE LAND

**TOTAL LEASE GRANTED PERIOD 10 YEARS**

**PERIOD OF MINING 10 YEARS**

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As  
Per Amendment Under Rule 41 & 42)

## LOCATION OF THE APPLIED AREA

EXTENT : 3.00.0 HA.  
S. F. No. : 220/1(PART-3).  
VILLAGE : GOPANAPALLI.  
TALUK : HOSUR.  
DISTRICT : KRISHNAGIRI.  
STATE : TAMIL NADU.

## APPLICANT

**M/s. SRRE KRISH ROUGH STONE,**  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM  
KRISHNAGIRI DISTRICT - 635 112.

## PREPARED BY

**S.MATHAN PRAKASH,M.SC.,M.PHIL.,**  
RQP/CNN/270/2016/A,  
No.2/274, EAST STREET,  
KULASEKARANALLUR POST,  
OTTAPIDARAM TALUK,  
THOOTHUKUDI DISTRICT - 628 401.

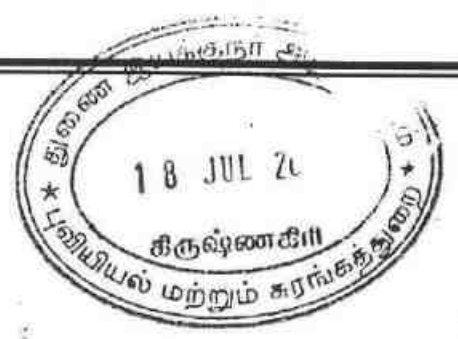
Email: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)  
CELL : 8668020217.



## CONTENTS

Sl. No.	Description	Page No.
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## ANNEXURES

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3.	Copy of DFO letter	III
4.	Copy of FMB & Combined Sketch	IV
5.	Copy of Adangal & 'A' Register	V
6.	Copy of Firm Registration	VI
7.	Copy of Partnership Deed	VII
8.	Copy of Partner ID Proof	VIII
9.	Copy of RQP Certificate	IX
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## LIST OF PLATES

Sl. No.	Description	Plate No.	Scale
1.	Location Plan	I	Not to Scale
2.	Route Map	IA	Not to Scale
3.	Topo Sheet Map	IB	1:50,000
4.	Satellite Image (500m Radius)	IC	1:5000
5.	Mine Lease Plan	II	1:1000
6.	Surface & Geological Plan	III	1:1000
7.	Geological Sections	III-A	1:1000
8.	Year Wise Development and Production Plan	IV-A, A1	1:1000
9.	Year Wise Development And Production Sections	IV- B, B1	1:1000
10.	Mine Layout, Land Use Pattern and Afforestation Plan	V	1:1000
11.	Environment Plan	VI	1:5000
12.	Conceptual/Final Mine Closure Plan	VII	1:1000
13.	Conceptual/Final Mine Closure Sections	VII- A	1:1000
14.	Conceptual Plan Common Boundary	VIII	1:1000
15.	Conceptual Sections Common Boundary	VIII- A	1:1000
16.	Progressive Mine Closure Plan	IX	1:1000

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, Goundarkottai,  
Karukkansavadi,  
Errahalli Post,  
Kaveripattinam  
Krishnagiri District - 635 112.



**CONSENT LETTER FROM THE APPLICANT**

I hereby give my consent for preparing the Mining Plan in respect of **Rough Stone** quarry over an extent of **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-3)** of **Gopanapalli** Village, **Hosur** Taluk, **Krishnagiri** District, Tamil Nadu State has been prepared by **Shri. S. Mathan Prakash, M.Sc., M.Phil.,** Recognized Qualified Person.

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

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**

RQP/CNN/270/2016/A

No.2/274, East Street,

Kulasekaranallur Post,

Ottapidaram Taluk,

Thoothukudi District - 628 401.

E-Mail: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)

Cell: 86680-20217

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

For **M/s. Srre Krish Rough Stone,**

**(S.Govindasami)**

**Managing Partner**

Signature of the Applicant

Place: KRISHNAGIRI

Date:

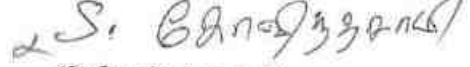
M/s. SRRE KRISH ROUGH STONE,  
D.No.212, Goundarkottai,  
Karukkansavadi,  
Errahalli Post,  
Kaveripattinam  
Krishnagiri District - 635 112.



**DECLARATION**

I hereby declare that the Mining Plan in respect of **Rough Stone** quarry over an extent of **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-3)** of **Gopanapalli** Village, **Hosur** Taluk, **Krishnagiri** District, and 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.

For M/s. Srre Krish Rough Stone,

  
(S.Govindasami)  
**Managing Partner**  
Signature of the Applicant

Place: KRISHNAGIRI

Date:

S.MATHAN PRAKASH, M.Sc.,M.Phil.,

RQP/CNN/270/2016/A



**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 **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-3)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District**, Tamil Nadu State obtained by **M/s. SRRE KRISH ROUGH STONE**, for applied 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 Recognized Qualified Person.

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**

Place: Thoothukudi

Date:

S.MATHAN PRAKASH, M.Sc.,M.Phil.,  
RQP/CNN/270/2016/A



**CERTIFICATE**

This is to certify that during preparation of Mining Plan for **Rough Stone** quarry over an extent **3.00.0 Hectares** of **Government Poramboke Land** in **S.F.No.220/1(Part-3)** of **Gopanapalli** Village, **Hosur Taluk, Krishnagiri District,** Tamil Nadu State for **M/s. SRRE KRISH ROUGH STONE**, 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 Recognized Qualified Person.

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**

Place: Thoothukudi

Date:

**MINING PLAN FOR MINOR MINERALS**  
**ROUGH STONE QUARRY**  
**TOTAL LEASE GRANTED PERIOD 10 YEARS**  
**PROPOSED PERIOD OF MINING 10 YEARS**



**Over an extent of 3.00.0 Hectares of Government Poramboke Land**  
**S.F.No.220/1(Part-3) of Gopanapalli Village, Hosur Taluk, Krishnagiri District,**  
**Tamilnadu State.**

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 &  
As Per Amendment Under Rule 41 & 42)

**1.0 INTRODUCTION AND EXECUTIVE SUMMARY:**

1. **M/s. SRRE KRISH ROUGH STONE**, registered office at D.No.212, Goundarkottai, Karukkansavadi, Errahalli Post, Kaveripattinam, Krishnagiri- 635 112 has applied for the grant of quarry lease to quarry **Rough Stone** over an extent of **3.00.0 Hectares of Government Poramboke Land** in **S.F.No.220/1(Part-3)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District** of Tamil Nadu State for a period of Ten Years under Tender cum Auction.
2. The Applicant has been the Successful **HIGHEST BIDDER** for an **Amount Rs.4,10,00,000/-** in a tender cum Auction conducted by the Government of Tamilnadu notified vide Gazette No.15 dated 14.03.2022 and Precise area had been given for the proposed grant of Rough Stone quarry lease to **M/s. Srre Krish Rough Stone** over an extent of 3.00.0 hectares in Government Poramboke land in **S.F.No.220/1(Part-3)** of Gopanapalli Village, Hosur Taluk, Krishnagiri District of Tamil Nadu State for a period of **Ten Years** Vide Letter **Re. No.537/2022/Mines dated 22.04.2022** and directed to submit the approved Mining Plan and Environmental Clearance certificate from the State Environment Impact Assessment Authority (SEIAA) for the grant of quarry lease for the applied area.
3. Accordingly, Mining Plan is prepared under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain Environmental clearance from State Environment Impact Assessment Authority.

  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016.**



4. In the above circumstances, the mining plan has been prepared for the Applicant **M/s. SRRE KRISH ROUGH STONE** for approval and subsequent submission of Form F and pre Feasibility report to obtain environmental clearance from the SEIAA of Tamil Nadu.



5. This Mining Plan is prepared for the applied Rough Stone Quarry for the period of Ten years by considering the TNMMCR 1959 and as per the EIA Notification 2006 and subsequent amendments and judgements.

6. The Geological Reserves is estimated as **1715980M<sup>3</sup>** and Mineable & recoverable Reserves is estimated as **725186M<sup>3</sup>** of **Rough Stone** after leaving necessary safety distance from the lease boundary as indicated in the precise area communication letter and relevant mining laws in force.

7. The proposed production scheduled for the Ten years is estimated as **725186M<sup>3</sup>** (for the First five (I-V)years- **512190M<sup>3</sup>** & for the Next five (VI-X)years- **212996M<sup>3</sup>** ) of **Rough Stone**.

Proposed average annual production of Rough stone **72519M<sup>3</sup>**.

8. Estimated Life of the Quarry

Total Mineable ROM	= 725186 M <sup>3</sup>
Recoverable Reserves @ 100%	= 725186 M <sup>3</sup>
Average production per year	= 72519 M <sup>3</sup>
Estimated Life of the Quarry	= 725186 / 72519 = 10.0 years

**Life = 10.0 years**

The Life of mine may change depend upon the prospecting results, rate of production and the extent of mechanization done by the applicant in near future.

9. Environmental measures to be adopted shall be,

- i) Dust Control at source while drilling and Proposed Control Blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in Proposed Control Blasting, control of fly rock missiles and vibration by doing peak particle velocity within 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 stack 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 adhered to.
- x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.



**2.0 EXECUTIVE SUMMARY:**

a.	Name of the Village	:	Gopanapalli
b.	Name of the Panchayat / Union	:	Gopanapalli / Hosur
c.	The proposed total Mineable Reserves	:	725186M <sup>3</sup>
d.	The proposed quantity of reserves (level of production) for Ten Years to be mined is (Recoverable reserves)	:	725186M <sup>3</sup> (for the First five (I-V)years- 512190M <sup>3</sup> & for the Next five (VI-X)years- 212996M <sup>3</sup> )
e.	Total extent of the area	:	3.00.0 Ha.
f.	Proposed Period of mining	:	Ten years
g.	Proposed Depth of mining	:	Total Depth of 66m - Top Soil 3m + Rough stone 63m. (Surface Ground Level Above is 10m and Surface Ground Level Below is 56m).
h.	Existing Pit Dimension	:	Nil
i.	Average production per year	:	72519M <sup>3</sup>
j.	Method of mining / level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 7m and bench width of 5m is proposed.
k.	Types of Machineries used in the quarry	:	i) Compressor with jack hammer. ii) Excavator of 0.90Cbm bucket Capacity.

l.	Cost of the Project	
	a. Fixed Cost	: Rs.4,12,90,000/-
	b. Operational Cost	: Rs.30,00,000/-
	c. EMP Cost	: Rs.3,50,000/-
m.	The area applied for lease is bounded by four corners and the coordinates are	Toposheet No. 57 - P/14
	Latitude	: 12° 37' 56.0941"N to 12° 37' 54.3668"N
	Longitude	: 77° 48' 49.1130"E to 77° 48' 40.8039"E
	North East	: 12° 37' 56.0941" N 77° 48' 49.1130"E
	South East	: 12° 37' 51.9387" N 77° 48' 45.9251"E
	North West	: 12° 37' 59.2819" N 77° 48' 41.4624"E
	South West	: 12° 37' 54.3668" N 77° 48' 40.8039"E



### 3.0 GENERAL INFORMATION:

3.1	a.	Name of the Applicant	: M/s. Srre Krish Rough Stone,
	b.	Address of the Applicant with phone No and e-mail id if any	: M/s. Srre Krish Rough Stone, D.No.212, Goundarkottai, Karukkansavadi, Errahalli Post, Kaveripattinam Krishnagiri District - 635 112.
	c.	Status of the Applicant	: Partnership Firm
3.2	a.	Mineral Which the applicant intends to mine	: Rough Stone
	b.	Precise area communication letter No.	: <b>Rc. No.537/2022/Mines dated 22.04.2022</b>
	c.	Period of permission	: 10 Years
	d.	Name and Address of the Recognized Qualified Person preparing the Mining Plan	: <b>S.Mathan Prakash, M.Sc., M.Phil.,</b> RQP/CNN/270/2016/A No.2/274, East Street, Kulasekaranallur Post, Ottapidaram Taluk, Thoothukudi District - 628 401. Email: geomathanraj@gmail.com
	e.	RQP Regn. No.	: RQP/CNN/270/2016/A Valid up to 09.02.2026.

#### 4.0 LOCATION:


##### a. Details of the Area:

State	District	Panchayat / Union	Taluk	Village	S.F.No.	Extent in Ha
Tamilnadu	Krishnagiri	Gopanapalli/ /Hosur	Hosur	Gopanapalli	220/1 (Part-3)	3.00.0
<b>TOTAL =</b>						<b>3.00.0</b>
b.	Classification of the Area (Ryotwari / poramboke / others)		:	It is a Government Poramboke Land, which is not fit for vegetation/cultivation.		
c.	Ownership / Occupancy of the Applied Lease area (Surface rights)		:	It is a Government Poramboke land. The applicant had been given precise area for the proposed grant of Rough Stone Quarry Lease.		
d.	Toposheet No. with Latitude and Longitude		:	<b>Toposheet No. 57 – H/14</b> : 12° 37' 56.0941"N to 12° 37' 54.3668"N : 77° 48' 49.1130"E to 77° 48' 40.8039"E		
e.	Existence of Public Road / Railway line if any nearby the area and approximate distance		:	Krishnagiri - Shoolagiri = 28.0 Kms Shoolagiri – Kelamangalam = 18.6 Kms Quarry site is located in Northwestern side at a distance of 5.4 km. from Kelamangalam village.		

#### PART - A

#### 5.0 GEOLOGY AND MINERAL RESERVES:

5.1	a.	Topography: 1. The area applied for quarry lease is almost hilly terrain area sloping towards Western side covered with Rough Stone which does not sustain any type of vegetation. The altitude of the area is Maximum 858m and Minimum 848m above MSL. 2. No major river is found nearby the lease area. 3. Water table is noticed at a depth of <b>88m</b> from the below surface in the adjacent open wells and bore wells of the area. 4. Temperature of the area is reported to be 18 <sup>0</sup> C to a maximum of 38 <sup>0</sup> C during summer. 5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.
-----	----	--

b.	<p>Infrastructures nearby the applied Lease area.</p> <p>1. Post Office : Mugalur – 1.6 Kms</p> <p>2. Police Station : Kelamangalam – 7.5 Kms</p> <p>3. G.H : Hosur – 15.0 Kms</p> <p>4. Fire service : Hosur – 21.5 Kms</p> <p>5. Railway Station : Hosur – 14.0 Kms</p> <p>6. School : Nagondapalli – 4.0 Kms</p> <p>7. Airport : Bangalore – 55.0 Kms</p> <p>8. Seaport : Chennai – 317.0 Kms</p>										
c.	Regional Geology	<p><b>KRISHNAGIRI</b> District is underlined 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, Charnockite basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The generalized stratigraphic succession of the geological formations met within this District is as follows.</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Soil, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites</td> </tr> </tbody> </table>		Age	Rock Formation	1.	Recent to Sub recent	Soil, Alluvium	2.	Archaean	Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites
	Age	Rock Formation									
1.	Recent to Sub recent	Soil, Alluvium									
2.	Archaean	Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites									

d. Geology of the Lease Area

1. The area is mainly composed of Archaean crystalline metamorphic complex.
2. The rock type noticed in the area for lease is **Granite Gneiss** which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Granite Gneiss is part of peninsular Gneisses, a high grade metamorphic rock.
3. The general trend of formation is N25°W – S25°E and dip towards NE-70°.

The general geological succession of the area is given as under.

	Age	Rock Formation
1.	Recent to Sub recent	Soil, Alluvium
2.	Archaean	Charnockites
3.	Archaean	Peninsular Gneiss, and Calc Gneiss

5.2 Details of Exploration already carried out if any :

Since the **Rough Stone** is seen from the Surface itself, no exploration is needed. However, the area was personally examined by the Geologist who prepared the Mining Plan.

5.3 a. Already excavated pit dimensions

Nil

b. **GEOLOGICAL RESERVES:**

**Top Soil (Gravel):**

The Thickness of Top soil in this area is 3.0m and the total volume of topsoil (gravel) will be **88620m<sup>3</sup>**.

**Rough Stone :**

The Geological Reserve is estimated as **1715980m<sup>3</sup>** respectively, at the rate of 100% Recovery upto the permissible depth. The Geological reserve of Rough stone and Top soil(Gravel) is calculated upto **66m(3m top soil + 63m Rough Stone)**. Surface Ground Level Above Height is 10m and Surface Ground Level Below Depth is 56m.

GEOLOGICAL RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume in (Cu.m.)	Geological Reserve in Cu.m. 100% 2022	Topsoil (Gravel) in Cu.m. 88620
XY-AB	I	211	140	3			
	II	180	49	7	61740	61740	
	III	211	140	7	206780	206780	
	IV	211	140	7	206780	206780	
	V	211	140	7	206780	206780	
	VI	211	140	7	206780	206780	
	VII	211	140	7	206780	206780	
	VIII	211	140	7	206780	206780	
	IX	211	140	7	206780	206780	
	X	211	140	7	206780	206780	
<b>Total=</b>					<b>1715980</b>	<b>1715980</b>	<b>88620</b>

c. **MINEABLE RESERVES:**

The Mineable reserves are calculated by deducting 10.0m safety distance and Bench Loss. In this regard, since the adjacent area also to be under new lease area, necessary action will be taken to get permission from DGMS in future to comply regulation under (111)3 of MMR.1961.

**Top Soil (Gravel):** The Thickness of Top soil in this area is 3.0m and the total volume of topsoil(gravel) will be **68760m<sup>3</sup>**.

**Rough Stone :**

The mineable reserves and the recoverable reserves are **725186m<sup>3</sup>** respectively, at the rate of 100% Recovery upto the permissible depth. The Mineable reserve of Rough stone and Top soil(Gravel) is calculated upto **66m(3m top soil + 63m Rough Stone)**. Surface Ground Level Above Height is 10m and Surface Ground Level Below Depth is 56m.

MINEABLE RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume (Cu.m.)	Recoverable Reserve Cu.m(100%)	Topsoil (Gravel) Cu.m.
XY-AB	I	191	120	3			68760
	II	169	38	7	44954	44954	
	III	184	113	7	145544	145544	
	IV	174	103	7	125454	125454	
	V	164	93	7	106764	106764	
	VI	154	83	7	89474	89474	
	VII	144	73	7	73584	73584	
	VIII	134	63	7	59094	59094	
	IX	124	53	7	46004	46004	
	X	114	43	7	34314	34314	
<b>Total=</b>					<b>725186</b>	<b>725186</b>	<b>68760</b>



## 6.0 MINING:

6.1	Method of Mining	<p>1. Opencast method of semi mechanized mining is adopted to extract Rough Stone.</p> <p>2. Machineries like Tractor mounted compressor attached with Jack hammers is being used to drilling and Proposed Control Blasting. Excavators are operated for quarrying of Rough Stone and Tippers Lorries are used for transportation of Rough Stone to the destination.</p>
6.2	Mode of Working	<p>It is a semi mechanized quarrying operation using shot hole drilling with the help of compressor and jack hammers, smooth blasting. Rough Stone are removed using Hydraulic excavator and loaded directly to the tippers and transported to the nearby end users.</p>
6.3	Proposed bench height & Width	<p>Bench height = 7mts.</p> <p>Bench width = 5mts.</p>
6.4	Details of Overburden / Mineral Production proposed for Ten year	<p><b>Top Soil(Gravel)/ Overburden production details follows:</b></p> <p>The entire lease area is covered 3.0m of Top Soil(Gravel) and the estimated quantity of Top soil(Gravel) is <b>68760m<sup>3</sup></b>. Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.</p>
<p><b>Year wise reserves calculations :</b></p> <p><b>Rough stone production First Five Years details as follows:</b></p> <p>The proposed rate of production of <b>Rough Stone</b> is estimated as <b>512190m<sup>3</sup></b> for First Five (I-V) years. The average proposed rate of production of <b>Rough Stone</b> is about <b>102438m<sup>3</sup></b> per year at the rate of 100% recovery upto the permissible depth. Reserves Calculated upto <b>38m (3m top soil (Gravel) + 35m Rough Stone)</b>. Surface Ground Level Above Height is 10m and Surface Ground Level Below Depth is 28m. (Refer Drawing Plate No.IV-A1-Year wise Sections).</p> <p>Proposed Production of Ten Years.</p>		

YEARWISE DEVELOPMENT AND PRODUCTION (First Five (I-V)Years)								
YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume (Cu.m)	Recoverable Reserve Cu.m(100%)	Topson (Gravel) Cu.m.
I-YEAR	XY-AB	I	191	120	3			
		II	169	38	7	44954		
		III	92	113	7	72772	72772	
II-YEAR		III	92	113	7	72772	72772	
III-YEAR		IV	174	103	7	125454	125454	
IV-YEAR		V	164	93	7	106764	106764	
V-YEAR	VI	154	83	7	89474	89474		
<b>Total (I-V Years) =</b>						<b>512190</b>	<b>512190</b>	<b>68760</b>

**Rough stone production Second Five Years details as follows:**

The proposed rate of production of **Rough Stone** is estimated as **212996m<sup>3</sup>** for Second Five (VI-X) years. The average proposed rate of production of **Rough Stone** is about **42599m<sup>3</sup>** per year at the rate of 100% recovery upto the permissible depth. Reserves Calculated upto **28m** Rough Stone. (Refer Drawing Plate No.IV-B1-Year wise Sections).

YEARWISE DEVELOPMENT AND PRODUCTION (Second Five (VI-X)Years)							
YEAR	Section	Bench	L(m)	W (m)	D(m)	Volume (Cu.m.)	Recoverable Reserve Cu.m(100%)
VI-YEAR	XY-AB	VII	72	73	7	36792	36792
VII-YEAR		VII	72	73	7	36792	36792
VIII-YEAR		VIII	134	63	7	59094	59094
IX-YEAR		IX	124	53	7	46004	46004
X-YEAR		X	114	43	7	34314	34314
<b>Total (VI-X Years) =</b>						<b>212996</b>	<b>212996</b>
<b>Grand Total (I-X Years)</b>						<b>725186</b>	<b>725186</b>

6.5	a.	Mining	:	Drilling of shot holes will be carried out using compressor and jack hammer. Depth of holes shall be 1 to 2m bench height and spacing shall be 0.75m and burden shall be 0.60m from the preface. Details of drilling equipments are given below.													
				<table border="1"> <thead> <tr> <th>Type</th> <th>Nos</th> <th>Dia of hole</th> <th>Size / Capacity</th> <th>Make</th> <th>Motive power</th> <th>H.P.</th> </tr> </thead> <tbody> <tr> <td>Jack Hammer</td> <td>6</td> <td>25.5 mm</td> <td>Hand held</td> <td>Atlas copco 2Nos</td> <td>Diesel</td> <td>60</td> </tr> </tbody> </table>				Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P.	Jack Hammer	6	25.5 mm
Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P.											
Jack Hammer	6	25.5 mm	Hand held	Atlas copco 2Nos	Diesel	60											



b Loading : Loading of waste and rough stone shall be carried out by 10 tonne capacity tippers from the working place periodically. Details of loading equipment are given as under.

Type	Nos	Bucket Capacity (MT)	Make	Motive power	H.P.
Hydraulic excavator	2	1.2 M <sup>3</sup>	L&T Ex200	Diesel	120

c Transportation : Transport of raw materials and waste shall be done by Tipper of 10 M.T. capacity

Type	Nos	Size / Capacity	Make	Motive power	H.P.
Tipper	2	10 M.T	Ashok Leyland	Diesel	110

d **Energy:**

Electricity for mines and lights only at nights (working is restricted on day time only between 9Am to 5Pm). Diesel (HSD) will be used for quarrying machines around **591604 litres** of HSD will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the night will be taken from nearby electric poles after obtaining permission from concerned authorities.

**For Top soil(Gravel):**

Per hour excavator will consume = 10 litres / hour  
 Per hour excavator will excavate = 60m<sup>3</sup> of Top soil  
 For 68760m<sup>3</sup> = 68760/60  
 = 1146 hours

Diesel consumption 1146 working hours = 1146 x 10 litres

Total diesel consumption = **11460 litres of HSD will be utilized for Top Soil(Gravel)**

**For Rough stone:**

Per hour excavator will consume = 16 litres / hour  
 Per hour excavator will excavate = 20m<sup>3</sup> of rough stone  
 For 725186m<sup>3</sup> = 725186/20  
 = 36259 hours

Diesel consume 36259 working hours = 36259 hours x 16 litres

Total diesel consumption = **580144 litres of HSD will be utilized for Rough Stone.**

			<p><b>Total diesel consumption is around (Top soil (Gravel) 14460 Litres + Rough Stone 580144 Litres) = 591604 litres of HSD for the entire period of life</b></p>		
6.6	Disposal of Overburden	:	<p>The estimated quantity of Top soil (Gravel) is 68760m<sup>3</sup>. Top Soil (Gravel) formation will be removed and transported to the needy end user, after obtaining permission and paying necessary seigniorage fees to the Government.</p>		
6.7	Brief Note on Conceptual Mining Plan for the entire lease period	:	<p>Conceptual Mining Plan is prepared with an object of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, etc., Average Ultimate Pit dimension in given as Under,</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">ULTIMATE PIT DIMENSIONS</td> </tr> <tr> <td style="text-align: center;">191.0m(L) X 120.0m(W) X 56.0m(D)</td> </tr> </table> <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>Afforestation has been proposed on the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.</p>	ULTIMATE PIT DIMENSIONS	191.0m(L) X 120.0m(W) X 56.0m(D)
ULTIMATE PIT DIMENSIONS					
191.0m(L) X 120.0m(W) X 56.0m(D)					

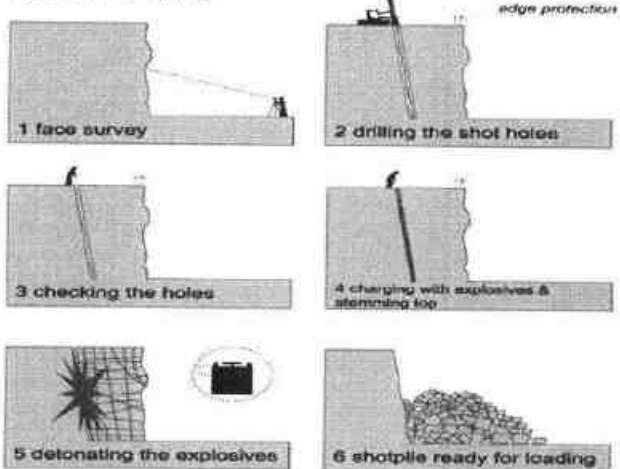
**7.0 BLASTING:**

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

Diameter of the hole	: 32-36 mm
Spacing	: 600 mm
Depth	: 1 to 1.5m
Charge / Hole	: 70 gms of gun powder or Gelatine.
Pattern of hole	: Zig Zag
Inclination of hole	: 70° from the horizontal.
Quantity of rock broken	: 0.45 MT x 2.6 = 1.17 MT
Control Blasting efficiency @ 90%	: 1.17 x 90% = 1.05MT / hole
Charge per hole	: 140 gms of 25mm dia cartridge
Quantity of rock broken per day	: 241.73M <sup>3</sup> .

**ROCK BLASTING**



7.2 Types of Explosives

: Following explosives are recommended for efficient Proposed Control Blasting with safe practice.

S. No	Description	Class / Division	Type	Size
1.	Slurry	Class - 3	Nitro Compound	25 x 200
2.	Detonators	Class - 3	Ordinary and elec (OD & ED)	6.5 x 32
3.	Safety fuse	Class - 6	Blue sump fuse coils of 10mts each	

7.3	Measures proposed to minimize ground vibration due to Proposed Control Blasting	<p>The following steps shall be adopted to control ground vibration due to Proposed Control Blasting:</p> <ol style="list-style-type: none"> <li>1. The minimum recommended delay time of 8ms was introduced to minimize ground vibration to avoid constructive interference of blast vibration waves and hence its impact or amplitude.</li> <li>2. In case of electronic detonators, which are inherently much more accurate delays (+/- 0.2 milliseconds delay) to minimize the ground vibration.</li> <li>3. Use of Ammonium nitrate fuel oil mixture for shot holes may be avoided because which cause for high fly of rocks in view critical diameter problem. Only high strength explosives like slurry will be used in the form of cartridge.</li> <li>4. Charge per hole should exceed the powder factor designed for each hole based on the quantum of Proposed Control Blasting, strength of rocks, fracture pattern etc.</li> </ol>
7.4	Storage of Explosives and safety measures to be taken while Proposed Control Blasting.	<ol style="list-style-type: none"> <li>1. The Applicant stores the explosives as per the Indian Explosives Act, 1958.</li> <li>2. The explosives to be used in mines being a small quantity, the District collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S &amp; B types.</li> <li>3. An authorized explosive agency is engaged to carry out blasting.</li> <li>4. The blasting time in a day is between 5 PM to 6 PM.</li> <li>5. First Aid Box is kept ready at all the time.</li> <li>6. Necessary precautionary announcement is being carried out before the blasting operation.</li> </ol>

### 8.0 MINE DRAINAGE:

8.1	Depth of Water table	: The ground water table is reported as 88m below ground level in nearby open wells and bore wells of this area. Mining depth taken as 66m (Surface Ground Level Above Height - 10m & Surface Ground Level Below Depth- 56m). Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.
8.2	Arrangement and Places where the mine water is finally proposed to be discharged	: The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 lpm and it shall be pumped out periodically by a stand by diesel powered. Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.

### 9.0 OTHER PERMANENT STRUCTURES:

9.1	Habitations / Village	: There are no villages within a radius of 500m. The nearest habitations with the population is given as under, <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in Kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Goolisandram</td> <td>1.0kms</td> <td>185</td> </tr> <tr> <td>East</td> <td>Pothasandhira</td> <td>2.5kms</td> <td>250</td> </tr> <tr> <td>South</td> <td>Nagappan Agraharam</td> <td>1.5kms</td> <td>370</td> </tr> <tr> <td>West</td> <td>Agraharam</td> <td>3.0kms</td> <td>310</td> </tr> </tbody> </table>	Direction	Village	Distance in Kms	Population	North	Goolisandram	1.0kms	185	East	Pothasandhira	2.5kms	250	South	Nagappan Agraharam	1.5kms	370	West	Agraharam	3.0kms	310
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9.2	Power lines (HT/LT)	: No power line is located in the lease area.																				
9.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	: There is No Water bodies (River, Pond, Lake, Odai, Channel etc) located within a radius of 500m.																				
9.4	Archeological / Historical Monuments	: There are no Archeological / Historical Monuments within a radius of 500m.																				

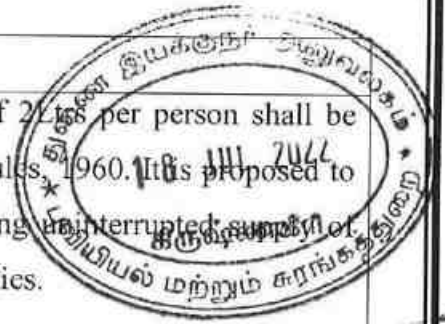
9.5	Road (NH, SH, Village Road etc)	: Krishnagiri - Shoolagiri = 28.0 Kms Shoolagiri - Kelamangalam = 18.0 Kms Quarry site is located in North western side at a distance of 5.4 km. from Kelamangalam village.
9.6	Places of Worship	: There are no Places of Worship within a radius of 500m.
9.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	: Distance between Reserve Forest Santhavur and the applied area = 6.2kms Distance from Cauvery North Wild life Sanctuary, Udedurgam = 12.7kms.
9.8	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	: Cauvery North Wild life Sanctuary, Udedurgam located within the distance of about 12.7 kms from the lease area.
9.9	Any Other Structures	: Nil

#### **10.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES:**

10.1	Employment Potential (Management & Supervisory personal)	: <ol style="list-style-type: none"> <li>As per Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the workers directly under his control and supervision.</li> <li>The following man power is proposed for quarrying Rough Stone during the Ten years period to achieve the proposed production to the provisions of the Government norms.</li> </ol> <table border="1" style="margin-left: 40px;"> <tr> <td>1.</td> <td>Skilled</td> <td>Operator</td> <td>2 No.</td> </tr> <tr> <td></td> <td></td> <td>Mechanic</td> <td>1 No.</td> </tr> <tr> <td></td> <td></td> <td>Blaster/Mat</td> <td>1 No.</td> </tr> <tr> <td>2.</td> <td>Semi - skilled</td> <td>Driver</td> <td>2 Nos</td> </tr> <tr> <td>3.</td> <td>Unskilled</td> <td>Musdoor / Labours</td> <td>5 Nos</td> </tr> <tr> <td></td> <td></td> <td>Cleaners</td> <td>3Nos</td> </tr> <tr> <td></td> <td></td> <td>Office Boy</td> <td>1No</td> </tr> <tr> <td>4.</td> <td>Management &amp; Supervisory staff</td> <td></td> <td>3No.</td> </tr> <tr> <td></td> <td>Total =</td> <td></td> <td>18Nos</td> </tr> </table>	1.	Skilled	Operator	2 No.			Mechanic	1 No.			Blaster/Mat	1 No.	2.	Semi - skilled	Driver	2 Nos	3.	Unskilled	Musdoor / Labours	5 Nos			Cleaners	3Nos			Office Boy	1No	4.	Management & Supervisory staff		3No.		Total =		18Nos
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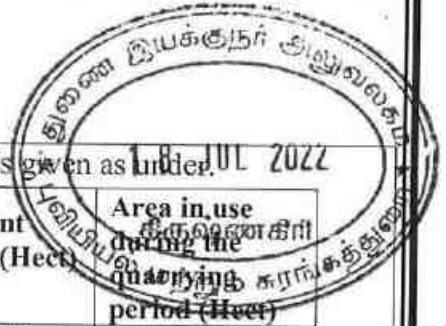


10.2	Welfare Measures	
a.	Drinking Water	: Drinking water at the rate of 2 Litres per person shall be provided as per the Mines Rules, 1960. It is proposed to make a borehole for providing an interrupted supply of drinking water and other utilities.
b.	Sanitary facilities	: Semi permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities are also arranged as per rule (36) of the Mines Rules, 1960.
c.	First Aid Facility	: Being a small mine First Aid station as per provisions under Rule (44) of the Mines Rules 1960 will be provided with facilities as per the third schedule as prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.
d.	Labour Health	: As per Mines Rule, Periodic medical examination has been arranged for occupational health once in a year in addition to attending medical treatment of occupational injuries under the Rule 45 (A), MR, 1960.
e.	Precautionary safety measures to the Laborers	: Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have been provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a semi-mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and system at quarrying operation.



**PART - B**

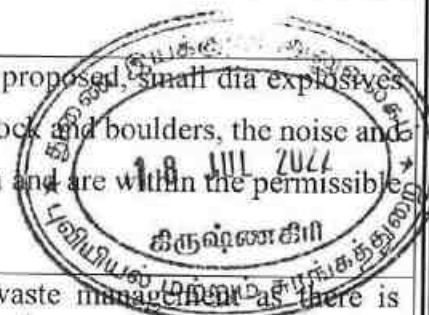
**11.0 ENVIRONMENTAL MANAGEMENT PLAN:**



11.1	Existing Land Use Pattern	<p>The existing land use pattern is given as under.</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Land Use</th> <th>Present Area (Hect)</th> <th>Area in, use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Area under quarrying</td> <td>Nil</td> <td>2.33.0</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>3.</td> <td>Roads</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>4.</td> <td>Green Belt</td> <td>Nil</td> <td>0.65.0</td> </tr> <tr> <td>5.</td> <td>Unutilized Area</td> <td>3.00.0</td> <td>Nil</td> </tr> <tr> <td colspan="2"><b>Total =</b></td> <td><b>3.00.0Ha</b></td> <td><b>3.00.0Ha</b></td> </tr> </tbody> </table>	Sl. No.	Land Use	Present Area (Hect)	Area in, use during the quarrying period (Hect)	1.	Area under quarrying	Nil	2.33.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	Nil	0.01.0	4.	Green Belt	Nil	0.65.0	5.	Unutilized Area	3.00.0	Nil	<b>Total =</b>		<b>3.00.0Ha</b>	<b>3.00.0Ha</b>
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<b>Total =</b>		<b>3.00.0Ha</b>	<b>3.00.0Ha</b>																											
11.2	Water Regime	<p>Water table in this area is noticed at a depth of <b>88m</b> and presently, the quarrying of Rough Stone is proposed upto 66m(Surface Ground Level Above Height 10m &amp; Surface Ground Level Below Depth 56m). It will not affect the ground water depletion of this area.</p>																												
11.3	Flora and Fauna	<p>Except acacia bushes, no other valuable trees are noticed in the applied lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.</p>																												
11.4	Climatic conditions	<p>Generally sub tropical climatic condition prevails throughout the year and this District receives rain both in South west and North east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18<sup>0</sup>C during winter and to a maximum of 38<sup>0</sup>C during the summer.</p>																												
11.5	Human Settlement	<p>The nearest habitations with the population is given .</p> <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in Kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td><b>North</b></td> <td>Goolisandram</td> <td>1.0kms</td> <td>185</td> </tr> <tr> <td><b>East</b></td> <td>Pothasandhira</td> <td>2.5kms</td> <td>250</td> </tr> <tr> <td><b>South</b></td> <td>Nagappan Agraharam</td> <td>1.5kms</td> <td>370</td> </tr> <tr> <td><b>West</b></td> <td>Agraharam</td> <td>3.0kms</td> <td>310</td> </tr> </tbody> </table>	Direction	Village	Distance in Kms	Population	<b>North</b>	Goolisandram	1.0kms	185	<b>East</b>	Pothasandhira	2.5kms	250	<b>South</b>	Nagappan Agraharam	1.5kms	370	<b>West</b>	Agraharam	3.0kms	310								
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11.6	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. For the sampling of air, high volume air sampler (Model VFC-PM10) was used (10 meter above and 5 meter away from road) and the particulates were collected on what man GFA glass fiber filters dried in a hot air oven at 105<sup>0</sup>C for 1hr and weighed.</p>																												



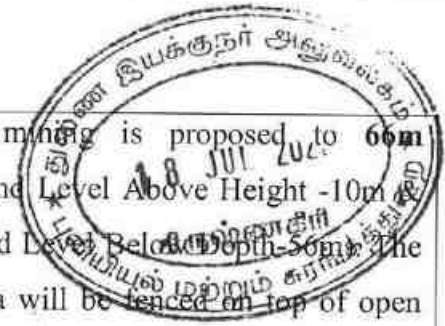
			The average flow rate was about 1.1 cubic meters.
11.7	Plan for Noise Control	:	Quarrying of Rough Stone will be carried out by drilling and Proposed Control Blasting by using low power explosives and hence, noise will be very Minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. In order to assess the extent of noise pollution due to vehicular traffic different zones viz., Silence zone, Residential Zone, Commercial zone, Traffic signals and Industrial zones were identified in urban and suburban areas of Krishnagiri. Adequate Number of observations were made in all the selected sites by using the sound level meter (LT Lutron SL-4001).
11.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Ten years	:	Factors to be considered for EIA are, <ol style="list-style-type: none"> <li>1. Dust generation,</li> <li>2. Land degradation</li> <li>3. Stabilization and vegetation of dumps</li> <li>4. Adverse effect on water regime</li> <li>5. Socio economic benefits arising out of Mining.</li> <li>6. Noise and Vibration.</li> </ol>
	a. Dust	:	Dust is expected to be generated from drilling, hauling roads; place of excavation etc and it will be suppressed by periodical wetting of lands.
	b. Land degradation	:	Land degradation is by means of cutting the trees and removal of fertile soil does not arise. Proposed usage of land for the Ten years shall be less than <b>3.00.0Ha</b> . Afforestation will be started during the first year of mining operation itself.
	c. Stabilization and vegetation of dumps	:	The topsoil will be spread over the non-active dumps along the slope and edges to plant tree saplings to form vegetal cover over the dumps. Such vegetal cover will prevent erosion of dumps during rainy seasons.
	d. Socio economic benefits arising out of mining	:	<ol style="list-style-type: none"> <li>1. To provide Employment opportunities of the nearby villagers.</li> <li>2. For the cultural development of the nearby villagers.</li> </ol>



	e. Noise and vibration	:	Since, no deep hole blasting is proposed, small dia explosives are used for breaking the hard rock and boulders, the noise and vibration will be very minimum and are within the permissible limits.
11.9	Proposal for Waste Management	:	There is no requirement for waste management as there is 100% recovery percentage.
11.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	:	The present mining is proposed to 66m (Surface Ground Level Above Height -10m & Surface Ground Level Below Depth-56m). The mined out area will be fenced on top of open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
11.11	Program for Afforestation	:	Trees like tamarind, casuarinas etc will be planted along the lease boundary and avenues as well as over non active dumps at a rate 60 trees per annum with an interval of 5m. The rate of survival expected to be 80% in this area.
11.12	Proposed Financial Estimate / Budget for (EMP) Environment Management		
	<b>A. Fixed Asset Cost:</b>		
	Land Cost	:	Rs. 4,10,00,000/- ( Leased tender amount for Government Poramboke Land )
	Labour Shed	:	Rs. 1,40,000/-
	Sanitary Facility	:	Rs. 70,000/-
	Fencing cost	:	Rs. 80,000/-
	Total=	:	<b>Rs.4,12,90,000/-</b>
	<b>B. Operational Cost:</b>		
	<b>Machinery cost</b>	:	<b>Rs.30,00,000/-</b>
	<b>C. EMP Cost:</b>		
	1. Drinking water facility	:	Rs. 1,10,000/-
	2. Safety kits	:	Rs. 75,000/-
	3. Water sprinkling	:	Rs. 50,000/-
	4. Afforestation	:	Rs. 25,000/-
	5. Water quality test	:	Rs. 30,000/-
	6. Air quality test	:	Rs. 30,000/-
	7. Noise/vibration test	:	Rs. 30,000/-
	Total=	:	<b>Rs. 3,50,000/-</b>
	<b>Total Project cost(A+B+C)</b>	:	<b>Rs.4,46,40,000/-</b>

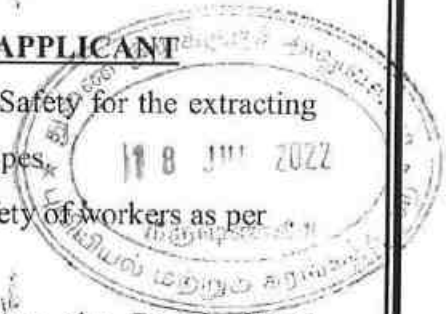
**12.0 MINE CLOSURE PLAN:**

12.1	Steps proposed for phased restoration, reclamation of already mined out area.	: The present mining is proposed to 66m (Surface Ground Level Above Height -10m & Surface Ground Level Below Depth-50m). The mined out area will be fenced on top of open cast working with SI fencing to arrest the entry of cattle's and public in to the quarry site.
12.2	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. Green belt development at the rate of 60 trees per year will be proposed.
12.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	: It is a fresh Rough stone quarry with a depth of 66m for Ten years and hence, no need of mitigation and restoration / reclamation of the applied lease area.



**13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

- (i) Permission will be obtained from the Director of Mines Safety for the extracting the Rough Stone from the Boundary barriers and from slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavour every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) Accordingly, Mining Plan is prepared under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain environment clearance from State Level Environmental Impact Assessment Authority.
- (v) This Mining Plan is prepared for the Applied Rough Stone Quarry for a period of Ten Years.



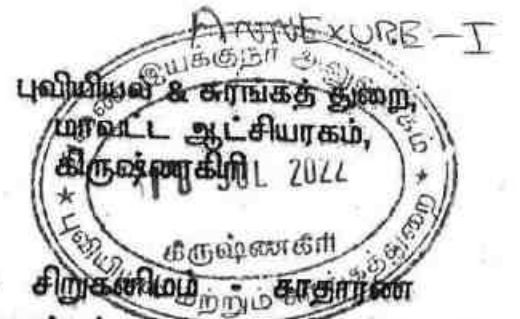
This Mining Plan is approved based on guidelines / instruction issued and in corporation of the particulars specified in the letter Roc. No. 527/2022 Dated 18.7.2022 of the Deputy Director of Geology and Mining, Krishnagiri and subject to further fulfillment of the conditions laid down under Tamil Nadu Minor Mineral Concession Rules, 1959 and Minor Mineral Conservation and Development Rule 2010.

*[Signature]*  
**DEPUTY DIRECTOR,**  
Geology and Mining,  
Collectorate, Krishnagiri.



*[Signature]*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A

This Mining Plan is approved subject to the conditions / Stipulation indicated in the Mining Plan Approval  
Letter Roc. No. 537/2022 Dated 18.7.2022



குறிப்பாணை

பொருள் கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாதாரண வகை கற்கள் - கிருஷ்ணகிரி மாவட்டம் - அரசு புறம்போக்கு புலங்களில் அமைந்துள்ள கற்குவாரிகள் - டெண்டர் / ஏலம் முறையில் குத்தகை வழங்குவது தொடர்பாக அரசிதழ் வெளியீடு - ஓசூர் வட்டம் - கோபனப்பள்ளி கிராமம் - புல எண்.220/1(பகுதி-3) 3.00.0 ஹெக்டேர் பரப்பில் 05.04.2022 அன்று டெண்டருடன் இணைந்த ஏலம் நடத்தப்பட்டது - ஏலத்தில் அதிகபட்ச குத்தகை தொகை குறிப்பிட்ட தி/ள்.ஹீகிரிஷ் ரப் ஸ்டோன் என்கிற நிறுவனத்திற்கு ஏலம் உறுதி செய்யப்பட்டது - விதிகளின்படி குத்தகை தொகை முழுவதும் செலுத்தப்பட்டது - குத்தகை உரிமம் வழங்கிட வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் ஆணைய முன் அனுமதி பெற்று சமர்ப்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை:

1. வட்டாட்சியர், ஓசூர் கடிதம் ந.க.எண்.426/2022/அ2 நாள்:22.01.2022.
2. வருவாய் கோட்டாட்சியர் ஓசூர் அறிக்கை ந.க.எண்.103/2022/பி2 நாள்:04.02.2022.
3. ஊன உயிரின காப்பாளர், ஓசூர் கடிதம் ந.க.எண்.267/2022/எல் நாள்:10.02.2022.
4. கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) புலதணிக்கை அறிக்கை நாள்:11.02.2022.
5. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022.
6. தி இந்து செய்தி நாளிதழில் விளம்பரம் நாள்:17.03.2022.
7. தி இந்து, தினகரன், தினமலர் மற்றும் காலைக்கதிர் ஆகிய செய்தி நாளிதழ்களில் 29.03.2022 அன்று வெளியிடப்பட்ட மாவட்ட ஆட்சியரின் அறிவிக்கை.
8. திரு.பிரேமோத்ரெட்டி என்பவரது டெண்டர் விண்ணப்பம் நாள்:04.04.2022.
9. திரு.ஜி.லோகேஷ் மற்றும் பத்து நபர்களின் ஏல விண்ணப்பங்கள் நாள்:05.04.2022.
10. தி/ள்.ஹீகிரிஷ் ரப் ஸ்டோன் என்பவரின் கடிதம் நாள்:18.04.2022.
11. தொடர்புடைய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புல எண்.220/1(பகுதி-3) விஸ்.3.00.0 ஹெக்டேர் பரப்பில் அமைந்துள்ள சாதாரண



கற்குவாரியை டெண்டர் / பொது ஏலத்திற்கு கொண்டு வர உரிய நில இருப்பு அறிக்கை வருவாய் கோட்டாட்சியரிடம் கோரப்பட்டதில், ஓசூர் வட்டாட்சியர், ஓசூர் வருவாய் கோட்டாட்சியர் மற்றும் கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோர் தணிக்கை மேற்கொண்டு கிருஷ்ணகிரி மாவட்டம், ஓசூர், வட்டம், கோபனப்பள்ளி கிராமம் அரசு புறம்போக்கு தீ.ஏ.த.தரிசு புல எண்.220/1(பகுதி-3) வில் 3.00.0 ஹெக்டேர் பரப்பு புவியினை குத்தகை உரிமம் வழங்கி வழங்கியுள்ளபடி மேற்கண்ட புலம் நடுநிலவாய்ந்தது என்பதால் வட்டம் இணைந்த ஏலத்தின் மூலம் உரிமம் வழங்கிட பரிந்துரை செய்துள்ளனர். வன உயிரின காப்பாளர், ஓசூர் மேற்கண்ட புலங்கள் விதிகளின்படி அருகில் உள்ள காப்பு காடுகளுக்கு வரையறுக்கப்பட்ட பாதுகாப்பு தொலைவிற்கு அப்பால் அமைந்துள்ளதாக அறிக்கை அளித்துள்ளார்.

3. அதன் அடிப்படையில், கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்களை வெட்டியெடுத்துச் செல்ல உரிமம் வழங்க ஏதுவாக கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022-ன்படி பிரசுரம் செய்யப்பட்டது. அதன்படி 04.04.2022-ம் நாள் பிற்பகல் 05.00 மணிக்குள் மூடி முத்திரை இடப்பட்ட டெண்டர் மனுக்களை அளிக்க இறுதி நாளாக அறிவித்து, 05.04.2022 அன்று பொது ஏலம் நடத்தப்பட்டு டெண்டர் மனுக்கள் ஏலத்தில் கலந்து கொண்டவர்கள் முன்னிலையில் திறக்கப்பட்டன.

4. மேற்கண்ட அரசிதழில் விளம்பரம் செய்யப்பட்டிருந்த குவாரிப்பட்டியலில் வரிசை எண்.(09), ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.220/1(பகுதி-3)-ல் 3.00.0 ஹெக்டேர் பரப்பில் உள்ள கற்குவாரிக்கு டெண்டர் / பொது ஏலத்தில் கலந்து கொண்டவர்களில் தி/ள்.ஸ்ரீகிரிஷ் ரப் ஸ்டோன் ஏலத்தில் கோரிய தொகை ரூ.4,10,00,000/- மாவட்ட ஆட்சித் தலைவர் அவர்களால் நிர்ணயம் செய்யப்பட்டிருந்த ஏலத் தொகையை விட அதிகமாக இருந்ததால் அவருக்கு ஏலம் ஊர்ஜிதம் செய்யப்பட்டது. மேற்கண்ட ஏலதாரர் மொத்த குத்தகை தொகையையும் விதிகளின்படி 19.04.2022-க்குள் செலுத்தியுள்ளார்.

6. எனவே, ஏலதாரர் குத்தகை தொகை முழுவதும் செலுத்திவிட்டபடியால், மேற்படி கற்குவாரி ஏலமானது விதிகளின்படி உயர்ந்தபட்ச ஏலம் கோரிய தி/ள்.ஸ்ரீகிரிஷ் ரப் ஸ்டோன் நிறுவனத்திற்கு உறுதி செய்யப்படுகிறது. மேலும், மேற்படி நபருக்கு ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு

(தீ.ஏ.த.தரிசு) புல எண்.220/1(பகுதி-3)-ல் 3.00.0 ஹெக்டேர் பரப்பு புலத்தில் பத்து

(10) ஆண்டுகளுக்கு குவாரி உரிமம் வழங்க ஏதுவாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.41-ன்படி கீழ்க்கண்ட நிபந்தனைகளுடன் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்கவும், அதன் தொடர்ச்சியாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.42-ன்படி மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவு பெற்று சமர்ப்பிக்கும் பட்சத்தில் சாதாரண கற்குவாரி உரிமம் வழங்கப்படும் என்ற விவரம் இதன் மூலம் தெரிவிக்கப்படுகிறது.

நிபந்தனைகள்:

- e. 1959ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை-II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.
- f. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர், அரசு புறம்போக்கு புலங்களுக்கு 10 மீட்டர் மற்றும் இதர நிலையான அமைப்புகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப் பணி மேற்கொள்ள வேண்டும்.
- g. விதிகளின் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.
- h. குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் முன் அனுமதி பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

இணைப்பு: குத்தகை உரிமம் வழங்க  
பரிந்துரைக்கப்பட்ட புல வரைபடம்.

ஓம்/- வி.ஜெய சந்திர பாணு ரெட்டி  
மாவட்ட ஆட்சித் தலைவர்,  
கிருஷ்ணகிரி.

// உண்மை நகல்// உத்தரவுபடி//

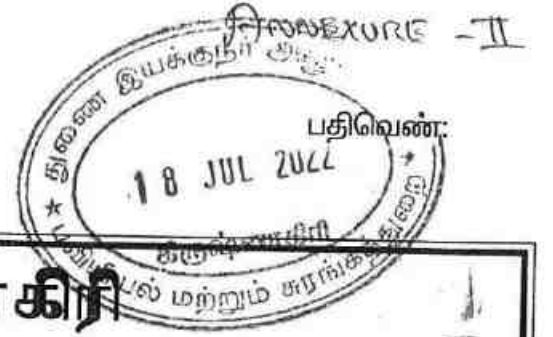
மாவட்ட ஆட்சியருக்காக,  
கிருஷ்ணகிரி

பெறுநர்:

தி/ள் ஸ்ரீகிரிஷ் ரப் ஸ்டோன்,  
எண்.212, கவுண்டர் கோட்டாய்,  
கருக்கன்சாவடி,  
எர்ரஹள்ளி, காவேரியூட்டணம்,  
கிருஷ்ணகிரி மாவட்டம்.

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

- நகல்: 1. இயக்குநர், புலியியல் மற்றும் சுரங்கத் துறை, சென்னை  
2. தமிழ்நாடு மாநில சுற்றுச்சூழல் மதிப்பீட்டு ஆணையம், சென்னை.



# கிருஷ்ணகிரி மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

கிருஷ்ணகிரி, மார்ச் 14, 2022  
[பிலவ, மாசி 30 - திருவள்ளூர் ஆண்டு 2053]

[எண் 15]

## மாவட்ட ஆட்சியர் அறிவிக்கை

[ந.க.எண். 180/2022/(கனிமம்), நாள்: 10.03.2022]

சாதாரண கற்குவாரி ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏலம் குறித்த அறிவிப்பு

டெண்டர் விண்ணப்பங்கள் பெற கடைசி நாள்	:	30.03.2022
		பிற்பகல் 05.00 மணி வரை
பொது ஏலம் நடைபெறும் நாள்	:	31.03.2022
		முற்பகல் 10.30 மணி முதல்

1. கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து பொது உபயோக பயன்பாட்டிற்காக சாதாரண கற்களை வெட்டியெடுத்துச் செல்வதற்கு தனிநபர் மற்றும் தனியார் நிறுவனங்களுக்கு குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் வரவேற்கும் மற்றும் ஏல அறிவிப்பு.
2. 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் விதி 8 உள்விதி (1)-ன்படி கிருஷ்ணகிரி மாவட்டத்தில் இவ்வறிக்கையுடன் இணைக்கப்பட்ட அட்டவணையில் குறிப்பிடப்பட்டுள்ள அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து சாதாரணகற்களை குவாரி செய்து எடுத்துச் செல்ல டெண்டருடன் இணைந்த ஏல முறையில் குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட 03 பிரதிகள் கொண்ட டெண்டர் விண்ணப்பங்கள் கிருஷ்ணகிரி மாவட்ட ஆட்சியரால் வரவேற்கப்படுகின்றன.
3. இந்த அறிவிக்கையின்படி விண்ணப்பிக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் பின் இணைப்பு VI-ல் குறிப்பிடப்பட்டுள்ள படிவத்தில் இருக்க வேண்டும் மாதிரி விண்ணப்பப்படிவம் இந்த மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ளது. இணைப்பில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் ஏற்றுக் கொள்ளப்படமாட்டாது.
4. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களுடன் இணைத்து அனுப்பப்பட வேண்டிய இணைப்புகளின் விவரங்கள் மற்றும் குத்தகை நிபந்தனைகள் பற்றிய விவரங்கள் குறிப்பிடப்பட்டுள்ள அரசிதழ், கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகம், கிருஷ்ணகிரி மாவட்டத்திலுள்ள அனைத்து சார் ஆட்சியர்/ வருவாய் கோட்டாட்சியர், வட்டாட்சியர் மற்றும் ஊராட்சி ஒன்றிய ஆணையர் அலுவலகங்களின் தகவல் பலகையில் விளம்பரம் செய்யப்படும்.



5. அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண கற்குவாரி இனங்களுக்கு 05 ஆண்டுகளும், புதியதாக சேர்க்கப்பட்டுள்ள (virgin) ஏற்கனவே குவாரி பணி நடைபெறாத சாதாரண கற்குவாரி இனங்களுக்கு 10 ஆண்டுகளும் ஆகும்.
6. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பதாரர் தனது விண்ணப்பத்தில் குவாரியின் மொத்த குத்தகை காலத்திற்குமான ஒரே தவணையில் செலுத்தத்தக்க குத்தகை தொகையை உரிய இடத்தில் எண்ணிலும் எழுத்திலும் தெளிவாக குறிப்பி வேண்டும்.
7. மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின்படி அரசிதழில் கண்டுள்ள நிபந்தனைகளின்படி பூர்த்தி செய்யப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களை அனைத்து இணைப்புகளுடன் கவரில் வைத்து மூடி முத்திரையிட்டு துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி என்ற விலாசமிட்டு நேரிலோ அல்லது ஒப்புக்கை பெறத்தக்க பதிவஞ்சு மூலமாகவோ மாவட்ட ஆட்சியர் அலுவலக வளாக தரைதளத்தில் அறை எண்.30ல் உள்ள புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகத்தில் 2022ம் ஆண்டு மார்ச் திங்கள் 30-ம் நாள் மாலை 5.00 மணிக்குள் கிடைக்கும்படி அனுப்பப்பட வேண்டும். கவரின் மீது விண்ணப்பிக்கும் குவாரியின் விவரம் மற்றும் அட்டவணையில் குறிப்பிட்டுள்ள குவாரியின் வரிசை எண் போன்றவற்றை தவறாமல் குறிப்பிட வேண்டும்.
8. மேலே குறிப்பிட்ட காலக்கெடுவிற்குள் வரப்பெற்ற விண்ணப்பங்கள் மட்டும் ஏலம் நடைபெறும் நாளன்று ஆஜராகியிருக்கும் சம்பந்தப்பட்ட குவாரிக்கு விண்ணப்பித்துள்ள விண்ணப்பதாரர்கள் மற்றும் பொது ஏலத்தில் கலந்து கொள்பவர்கள் முன்னிலையில் அட்டவணைகளில் உள்ள குவாரிகளின் வரிசைகளின் முறையே முதலில் பொது ஏலமும் பின்னர் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பும் மேற்கொள்ளப்படும்.
9. மேலே குறிப்பிட்ட நாளில் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பதற்கு முன்னர் ஒவ்வொரு குவாரிக்குத் தனித்தனியே பொது ஏலம் விடப்படும். ஏல நடவடிக்கை முடிவு பெற்ற பின்பு சம்பந்தப்பட்ட குவாரிக்கு வரப்பெற்ற டெண்டர் விண்ணப்பங்கள் பிரித்து பரிசீலிக்கப்படும். டெண்டர் விண்ணப்பம் மூலம் கோரப்பட்டுள்ள உயர்ந்தபட்ச டெண்டர் தொகை அல்லது ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச குத்தகை தொகை இதில் எது அதிகமோ அத்தொகையே சம்பந்தப்பட்ட குவாரிக்கான உயர்ந்தபட்ச குத்தகை தொகையாக எடுத்துக்கொள்ளப்பட்டு குவாரி குத்தகை உரிமம் வழங்குதல் சம்பந்தமாக நடவடிக்கைகள் மேற்கொள்ளப்படும்.
10. மேற்கண்டபடி வரப்பெறும் டெண்டர் / ஏல விண்ணப்பங்கள், 1959ஆம் ஆண்டு தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், சுரங்கங்கள் மற்றும் கனிமங்கள் (மேம்படுத்துதல் மற்றும் முறைப்படுத்துதல்) சட்டம் 1957 மற்றும் இந்த ஏல அறிவிப்பில் குறிப்பிட்டுள்ள முக்கிய நிபந்தனைகளின்படி பரிசீலிக்கப்பட்டு அவற்றின்மீது தக்க ஆணைகள் பிறப்பிக்கப்படும்.
11. இந்த மாவட்ட அரசிதழ் அறிவிக்கை பிரசுரிக்கப்பட்ட பின்னரோ, குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ, நிபந்தனைகளை மாற்றவோ அல்லது ரத்து செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளின் குத்தகை உரிமம் கோரும் ஒப்பந்தப்புள்ளி மனுக்களை எக்காரணமும் கூறாமல் ரத்து செய்யவோ அல்லது மேற்படி மனுக்களை மூழு முத்திரையிடப்பட்ட உறைகளை திறக்கும் நாள் நேரம் மற்றும் ஏலம் நடத்தும் நாள் மற்றும் நேரம் ஆகியவைகளை தள்ளிவைக்கவோ நிறுத்திவைக்கவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு. ஏதாவது காரணத்தினால் ஒத்திவைக்க நேர்ந்தால் அதற்கு மனுதாரர்கள் யாருக்கும் நஷ்டஈடு கோர உரிமை இல்லை.
12. விண்ணப்பதாரர் ஒவ்வொரு குவாரிக்கும் தனித்தனியே ஒரு ஒப்பந்தப்புள்ளி விண்ணப்பத்தை உரிய இணைப்புகளோடு அனுப்ப வேண்டும். ஒரே விண்ணப்பத்தில் ஒரு குவாரிக்கு மேல் பல குவாரிகளை குறிப்பிட்டு அனுப்பும் விண்ணப்பம் நிராகரிக்கப்படும்.



13. ஒப்பந்தப்புள்ளி விண்ணப்பம் அனுப்புவதற்கு முன்/ ஏலத்தில் கலந்து கொண்டதற்குமுன் இம்மாவட்ட அரசிதழ் அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள பட்டியலில் கண்ட சம்பந்தப்பட்ட குவாரியை / குவாரிகளை விண்ணப்பதாரர் தனது சொந்த செலவிலேயே நேரில் பார்வையிட்டு பாதை வசதி கனிமத்தின் தரம் மற்றும் கனிமத்தின் இருப்பு ஆகியவற்றை ஆராய்ந்து பின்னர் குத்தகை உரிமம் கோரி விண்ணப்பிக்க வேண்டும் மற்றும் ஏலத்தில் கலந்து கொள்ளவேண்டும். ஆணை வழங்கப்பட்ட பின் குவாரி அமைந்துள்ள புல எண், பரப்பு, குவாரிகளின் நான்கு எல்லைகள், பாதை வசதி, கனிமத்தின் தரம் கனிமத்தின் இருப்புக்குறித்து எவ்வித தாவரவியல் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.
14. 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் கண்டுள்ள அனைத்து சாராம்சங்களையும் மாவட்ட அரசிதழில் உள்ள அனைத்து நிபந்தனைகளையும் நன்கு தெரிந்து கொண்டபின் ஒப்பந்தப்புள்ளி விண்ணப்பங்களை உரிய இணைப்புகளோடு அனுப்பவேண்டும். விண்ணப்பம் அனுப்பிய பிறகு விதிகள் மற்றும் குத்தகை நிபந்தனைகள் பற்றி சரியாக தெரியாது என மனுதாரர் வாதிட்டால் அது ஏற்றுக்கொள்ளப்பட மாட்டாது.
15. ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏல நிபந்தனைகள் :
- 1) ஒவ்வொரு குவாரிக்கும் இந்த அரசிதழின் பிற்சேர்க்கையில் பிரசுரிக்கப்பட்டுள்ள இணைப்பு VI-ல் காணும் மாதிரி விண்ணப்ப படிவத்தின்படி தனித்தனி விண்ணப்பங்களில் விண்ணப்பிக்க வேண்டும்.
  - 2) நடப்பில் மாநில அளவில் ஒரு நபருக்கு அதிகபட்சம் இரண்டு குவாரிகளுக்கு மட்டுமே குத்தகை உரிமம் வழங்கப்படும்.
  - 3) இந்த அரசிதழின் அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது, குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண கற்குவாரி இனங்களுக்கு 05 ஆண்டுகளும் புதியதாக சேர்க்கப்பட்டுள்ள சாதாரண கற்குவாரி இனங்களுக்கு (Virgin quarry) 10 ஆண்டுகளும் ஆகும். குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிப்பிடப்படும் இறுதி நாளில் குத்தகை காலம் முடிவடையும், குத்தகை காலம் எக்காரணத்தைக்கொண்டும் நீட்டிக்கப்பட மாட்டாது.
  - 4) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்துடன் கீழ்க்கண்டவற்றை இணைத்து அனுப்ப வேண்டும்.
    - (அ) திரும்ப வழங்க இயலாத விண்ணப்பக் கட்டணமாக ரூ.1500/-க்கான கேட்பு வரைவோலையை (டிமாண்ட் டிராப்ட்) ஏதேனும் ஒரு தேசிய மயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று அல்லது அரசு கருவூலத்தில் செலுத்திய அசல் சலான் இணைக்க வேண்டும்.
    - (ஆ) பிணை வைப்புத்தொகை (Earnest money deposit) ரூ.25000/- (ரூபாய் இருபத்தைந்தாயிரம் மட்டும்)க்கான கேட்பு வரைவோலை ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று இணைக்க வேண்டும். தனிநபர் பெயருக்கு எடுத்து கொடுக்கப்படும் வங்கி வரைவோலை ஏற்றுக்கொள்ளப்படமாட்டாது குத்தகை உரிமம் வழங்கப்படுபவர் செலுத்த வேண்டிய டெண்டர்/ ஏலத் தொகையில் இந்த தொகை பின்னர் சரி செய்து கொள்ளப்படும்.
    - (இ) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறித்துள்ள மொத்த குத்தகை தொகையில் 10 சதவீதத் தொகைக்கான கேட்பு வரைவோலை (டிமாண்ட் டிராப்ட்டை) துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று இணைக்க வேண்டும்.

(F) மாவட்ட வாரியாக கனிம வாரியாக விண்ணப்பதாரர் / ஏலதாரர் நேரடியாகவோ அல்லது பங்குதாரராகவோ தொடர்புள்ள குவாரிகள் பற்றிய கீழ்க்கண்ட விவரங்கள் அல்லது ஆணையறுதி ஆவணம் (அபிடவிட்) மூலம் தெரிவிக்க வேண்டும்.

1. விண்ணப்பதாரருக்கு கனிம குத்தகையுள்ள மாவட்ட ஆட்சியரால் வழங்கப்பட்ட செல்லத்தக்க சுரங்கவரி நிலுவை இல்லா சான்றிதழ் அல்லது சுரங்கவரி நிலுவை இல்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்படவேண்டும்.
2. வருமான வரி செலுத்திய சான்றிதழ் அல்லது வருமானவரி பாக்கியில்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்படவேண்டும்.
3. மற்றும்,
  - i) அனுபவத்திலிருக்கும் குவாரி குத்தகை அனுமதி பற்றி விவரம்
  - ii) ஏற்கனவே விண்ணப்பித்து இதுவரை அனுமதி வழங்கப்படாத குவாரி குத்தகை அனுமதி பற்றி விவரம்.
  - iii) தற்போது உடனிகழ்வாக விண்ணப்பிக்கும் குவாரி குத்தகை அனுமதி விவரம்.
4. மேற்கண்ட ஆணையறுதி ஆவணங்களை ரூ.20/- மதிப்புள்ள முத்திரைத்தாளில் சான்று உறுதி அலுவலரிடம் (Notary Public) கையொப்பம் பெற்று யூர்த்தி செய்யப்பட்ட விண்ணப்பத்துடன் இணைத்து சமர்ப்பிக்கப்பட வேண்டும்.
- 5) ஏலத்தில் நேரடியாக கலந்து கொள்பவர்கள் யூர்த்தி செய்யப்பட்ட விண்ணப்பப்படிவம், திருப்பித்தரப்படாத விண்ணப்பக்கட்டணம் ரூ.1500/- மற்றும் பிணை வைப்புத்தொகை ரூ.25000/- ஆகியவற்றிற்கான கேட்பு வரைவோலைகள் (டிமாண்ட் டிராப்ட்) துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று ஏலத்தில் நேரடியாக கலந்து கொள்வதற்கு முன்னர் ஏலம் நடத்தும் அலுவலரிடம் சமர்ப்பிக்க வேண்டும். மேலும் ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச தொகை டெண்டர் மூலம் கோரப்பட்ட உயர்ந்த பட்ச தொகையைவிட அதிகமாக இருந்தால் ஏல முடிவு அறிவிப்பு செய்யப்பட்டவுடன் ஏலத்தொகையில் 10 சதவீதத் தொகையை உடன் ஏலம் நடத்தும் அலுவலரிடம் தேசிய மயமாக்கப்பட்ட ஏதேனும் ஒரு வங்கியில் பெறப்பட்ட கேட்பு வரைவோலையாகவோ அல்லது ரொக்க தொகையாகவோ செலுத்தி தக்க இரசீதுகள் பெற்றுக் கொள்ள வேண்டும்.
- 6) நேரில் விண்ணப்பங்கள் அளித்தால் அதைப்பெற்றுக் கொண்டதற்கான ஒப்புதல் கடிதம் அன்றைய தினமே வழங்கப்படும். தபால் மூலம் பெறப்படும் விண்ணப்பத்திற்கு ஒப்புதல் கடிதம் மூன்று தினங்களுக்குள் தபாலில் அனுப்பி வைக்கப்படும். டெண்டர் விண்ணப்பங்கள் மூடி முத்திரையிடப்பட்ட கவர்களில் மட்டுமே அனுப்பி வைக்கப்பட வேண்டும். கவரின் மேல்புறத்தில் விண்ணப்பதாரரின் பெயர் மற்றும் விவரம் தெளிவாக குறிப்பிடப்பட வேண்டும். கவரின் இடது மூலையில் கனிமத்தின் பெயர், குவாரி அமைந்துள்ள கிராமம், புல எண், பரப்பு அரசிதழின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ள குவாரிகளின் பட்டியலில் உள்ள வரிசை எண் ஆகியவற்றை தவறாமல் குறிப்பிடவேண்டும்.





- 7) மாவட்ட ஆட்சியரால் அல்லது அவரால் அங்கீகாரம் வழங்கப்பட்ட அலுவலரிடம் உள்ள வருகைபதிவேட்டில் விண்ணப்பதாரர்கள் / ஏலதாரர்கள் கையொப்பமிட்ட பின்னரே ஏல அறைக்குள் அனுமதிக்கப்படுவார்கள்.
- 8) ஏலம் மற்றும் ஒப்பந்தப்புள்ளியில் (டெண்டர்) கலந்து கொள்பவர் செலுத்தும் விண்ணப்பிக்கட்டணத் தொகை ரூ.1500/- திருப்பித்தரப்படமாட்டாது. ஏலத்தில் நேரிடையாக பங்குபெறுபவர்கள் கொடுக்கும் விண்ணப்பத்தில் குத்தகை தொகையை குறிப்பிட தேவையில்லை. ஏற்கனவே டெண்டர் விண்ணப்பம் கொடுத்தவர்கள் ஏலத்தில் கலந்துகொள்ள முடியாவிடில் அவருக்குப்பதிலாக அவரால் நியமிக்கப்பட்ட வேறு ஒரு நபர் மட்டுமே நோட்டரிபப்ளிக் முன்பு விண்ணப்பதாரர் மற்றும் நியமிக்கப்பட்ட நபர் கையெழுத்துக்கள் சான்றுபெறப்பட்ட உறுதிமொழி ஆவணம் (அபிடவிட்) தாக்கல் செய்வதின் பேரில் ஏலத்தில் கலந்து கொள்ள அனுமதிக்கப்படுவார்கள்.
- 9) ஒப்பந்தப்புள்ளி விண்ணப்படிவத்தில் மனு செய்யும் நபர்கள் தாங்கள் மனு செய்யும் குவாரிக்கு குத்தகை தொகையாக செலுத்த விரும்பும் தொகையை விண்ணப்பத்தில் குறிப்பிடாமல் இருந்தாலோ அல்லது விண்ணப்ப கட்டணம், பிணைவைப்புத் தொகை, அதிகபட்சமாக குறிப்பிடும் குத்தகை தொகையின் 10% தொகை ஆகியவற்றிற்கான வங்கி வரைவோலைகளை விண்ணப்பத்துடன் இணைக்காமல் இருந்தாலோ, விண்ணப்பத்தாளில் விண்ணப்பதாரர் தன் கையொப்பம் செய்யாமல் இருந்தாலோ 1959ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் கூறப்பட்ட சுரங்கவரி பாக்கியின்மை சான்றிதழ், வருமானவரி பாக்கியின்மை சான்றிதழ் அல்லது இவைகளுக்காக வழங்கப்படும் ஆணை உறுதி ஆவணம் மற்றும் ஏற்கனவே மனுதாரர் நேரடியாகவோ பங்குதாரராகவோ உள்ள குவாரிகள் தொடர்பான உறுதிமொழி ஆவணம் ஆகியவற்றை இணைக்கப்படாமல் இருந்தாலோ மேற்படி ஒப்பந்தப்புள்ளி விண்ணப்பம் விதிகளின்படி நிராகரிக்கப்படும். மேற்குறிப்பிட்டவாறு விண்ணப்பம் நிராகரிக்கப்பட்ட ஒப்பந்தப்புள்ளி விண்ணப்பதாரர்களுக்கு ஒப்பந்தப்புள்ளிகள் திறக்கும் சமயத்தில் விண்ணப்பதாரர் ஆஜரில் இருந்தால் மட்டும் விண்ணப்பதாரரிடம் தக்க ஒப்புதல் பெற்று வங்கிவரைவோலை திருப்பி வழங்கப்படும். ஒப்பந்தப்புள்ளி திறக்கும் சமயத்தில் ஆஜரில் இல்லாத நபருக்கு பதிவஞ்சல் மூலம் வங்கி வரைவோலைகள் தனியே அனுப்பி வைக்கப்படும்.
- 10) ஒவ்வொரு குவாரிக்கும் பொது ஏலம் நடத்தி முடிந்த பின்னர் சம்பந்தப்பட்ட குவாரிக்கான டெண்டர் விண்ணப்பங்கள் வருகை தந்திருக்கும் சம்பந்தப்பட்ட டெண்டர் விண்ணப்பதாரர்கள் மற்றும் ஏலதாரர்கள் அல்லது அவர்களது அதிகாரம் பெற்ற நபர்கள் முன்னிலையில் சம்பந்தப்பட்ட அதிகாரிகளால் திறக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) திறக்கும் நேரத்தில் விண்ணப்பதாரர் அல்லது ஏலதாரர் அல்லது அங்கீகாரம் பெற்ற நபர் ஆஜரில் இல்லாததற்கு மர்வட்ட நிர்வாகம் பொறுப்பு அல்ல. இதன்பொருட்டு ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் திறப்பதோ ஏலம் நடத்துவதோ நிறுத்தி வைக்கப்படமாட்டாது.
- 11) அட்டவணையில் கண்ட ஒவ்வொரு குவாரிக்கும் வரப்பெற்ற மொத்த செல்லத்தக்க விண்ணப்பங்கள், விண்ணப்பதாரர்களின் பெயர்கள் ஒவ்வொரு விண்ணப்பதாரராலும் குறிப்பிடப்பட்ட அதிகபட்ச டெண்டர் தொகை ஆகியவற்றையும் அதிகபட்ச தொகைக்கு ஏலம் கேட்ட நபர் பெயர் மற்றும் அதிகபட்ச ஏலத்தொகை ஆகியவற்றையும் ஏலம் முடிவடைந்தவுடன் அறிவிக்கப்படும். ஏலத்தொகை, ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறிப்பிடப்பட்டுள்ள குத்தகை (டெண்டர்) தொகையை விடகுறைவாக இருந்து ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் மூலமாக கோரப்படும் குத்தகை தொகைகள் ஒன்றுக்கும் மேற்பட்ட விண்ணப்பதாரர்களால் ஒரே மாதிரியாக குறிப்பிடப்பட்டிருந்தால் சம்பந்தப்பட்ட விண்ணப்பதாரர்களை மட்டும் அழைத்து சம்பந்தப்பட்ட குவாரிக்கு மட்டும் மறுகேட்பு மூலம் உயர் குத்தகை தொகை பெற நடவடிக்கை எடுக்கப்படும். அதிகபட்ச குத்தகைத் தொகை கோரும் நபர் அதிகபட்ச ஏலத்தொகை கோரிய நபராக அறிவிக்கப்படுவார். ஒவ்வொரு குவாரிக்கும் பெறப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களில் குறிப்பிடப்பட்டுள்ள அதிகபட்ச குத்தகைத்தொகை அல்லது பொது ஏலத்தின் மூலம் கேட்கப்படும் அதிகப்பட்ச குத்தகைத் தொகை இவற்றில் எது அதிகமோ அந்த தொகை மேற்கண்ட குவாரிக்கு கோரப்பட்ட அதிகபட்ச குத்தகை தொகை என அறிவிக்கப்பட்டு அதிகப்பட்ச குத்தகைத் தொகை குறிப்பிட்டவராக அறிவிக்கப்படுவார். அதிகப்பட்சத் தொகைக்கு டெண்டர்/ஏலம் மூலம் கேட்ட நபர் என உறுதி செய்யப்பட்டவுடன், டெண்டர்/ ஏலம்

கேட்ட நபர் அவரால் அதிகபட்சமாக கோரப்பட்ட தொகையில் பத்து சதவிகித தொகையினை கேட்டு வரைவோலையாகவோ / பணமாகவோ உடனடியாக செலுத்திவேண்டும். அவ்வாறு செலுத்தத் தவறும் பட்சத்தில் அவரது ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவருக்கு அடுத்தபடியாக அதிகபட்சத்தொகை கேட்ட நபருக்கு வாய்ப்பளிக்கப்படும். அவரும் பத்து சதவிகித தொகையினை செலுத்த தவறும் பட்சத்தில் இதே நடைமுறையை தொடர்ந்து நடத்துவது அல்லது மறு ஏலம் விட ஆணையிடுவது போன்றவை மாவட்ட ஆட்சியரின் இறுதி முடிவு மற்றும் அதிகார வரம்பிற்கு உட்பட்டதாகும். அதிகபட்ச ஏலம் / டெண்டர் கேட்ட நபரை தவிர் மற்றவர்களுக்கு அவர் தாம் செலுத்திய பிணைவைப்புத்தொகை திரும்ப தரப்படும். ஏலம் / டெண்டர் உறுதி செய்யப்பட்ட நபர் மீதமுள்ள 90 சதவீத தொகையினை பதினைந்து (15) தினங்களுக்குள் செலுத்திவிட வேண்டும், தவறும் பட்சத்தில் ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவர் செலுத்திய அனைத்து தொகைகளும் பறிமுதல் செய்து அரசு கணக்கில் சேர்க்கப்படும்.

12) (அ) சிறப்பு நிபந்தனைகள்:

- (i) இந்த டெண்டர் மற்றும் ஏலமுறையில் கலந்து கொள்ளும் விண்ணப்பதாரர்கள் அனைவரும் இந்திய அரசின் வருமான வரித்துறையினரால் வழங்கப்படும் நிரந்தர கணக்கு எண் (PAN - CARD) அட்டையை பெற்றிருக்க வேண்டும் அல்லது வருமான வரி துறையினரிடமிருந்து பெற்று சமர்ப்பிக்க வேண்டும்.
- (ii) இந்த நிரந்தர கணக்கு எண்ணை சமர்ப்பித்து டெண்டர் மற்றும் ஏலம் கோரும் தொகைக்கு 2% வருமான வரியை கிருஷ்ணகிரி மாவட்ட புலியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அவர்களுக்கு வருமான வரித்துறையினரால் அளிக்கப்பட்டுள்ள TAN.No.CHED05905E-ன் கீழ் உரிய வருமானவரித்துறை செலுத்துச்சீட்டின் மூலம் செலுத்த வேண்டும்.
- (iii) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொரு முறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 2% வருமான வரி தொகை செலுத்தவேண்டும்.
- (iv) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டு பெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவீத தொகையை கிருஷ்ணகிரி மாவட்ட கனிம அறக்கட்டளை நிதியாக கிருஷ்ணகிரி பாரத மாநில வங்கி (State Bank of India) கணக்கு என்.37243080996-ல் செலவன் மூலம் செலுத்த வேண்டும்.
- (v) அரசாணை எண்.23 தொழில் (எம்.எம்.சி.1) துறை நாள்:23.02.2022-ன்படி பசுமை வரியாக உள்மாநிலங்களில் கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 10 சதவீதம் அல்லது வெளி மாநிலங்களுக்கு கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 20 சதவீதம் உரிய அரசு கணக்கில் செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

13). குவாரி குத்தகை கோரி ஒரே ஒரு மறைமுக டெண்டர் மறு கொடுக்கப்பட்டு திறந்த முறை பொது ஏலத்தில் கலந்து கொள்ள யாரும் முன்வரவில்லையெனில், டெண்டர் தொகை அரசுக்கு ஆதாயமானது என்று உதவி / துணை இயக்குநர் (புலியியல் மற்றும் சுரங்கத்துறை) கருதினால், அந்த டெண்டர் மறுதாரருக்கு குவாரி குத்தகை வழங்க உதவி / துணை இயக்குநர் (புலியியல் மற்றும் சுரங்கத்துறை) ஒப்புதல் அளிக்கலாம். டெண்டர் தொகை அரசுக்கு ஆதாயமானதல்ல என்று உதவி / துணை இயக்குநர் (புலியியல் மற்றும் சுரங்கத்துறை) கருதும் பட்சத்தில், மறுவைத் தள்ளுபடி செய்து ஆணையிடப்பட்டு மறு ஏலத்தின் மூலம் குவாரி குத்தகை வழங்க மேல்நடவடிக்கை எடுக்க மாவட்ட ஆட்சியர்க்கு அதிகாரம் உண்டு.



- 14) மாண்புமிகு இந்திய உச்சநீதிமன்றம் வழக்கு எண் ஐ.ஏ 12-13/2012 எஸ்.எல்.பி (ஆ) எண்-19628, 19629/2009 ஆகியவற்றின் மீது 27.02.2012 அன்று வழங்கியுள்ள ஆணைகளின்படியும், இந்திய அரசு சுற்றுச்சூழல் மற்றும் வனத்துறை குறிப்பாணை எண். எல்.11011/47/2011 - IA, II(M) நாள்: 18.05.2012ன்படியும், அரசாணை எண். (எம்எஸ்)எண். 79, தொழில் (எம்எம்சி1) துறை நாள்: 06.04.2015ன்படி 1959ஆம் வருடத்திய தமிழ்நாடு சிறுகணிம சலுகை விதிகளில் திருத்தம் செய்யப்பட்டு சேர்க்கப்பட்ட விதிகள் எண். 41 மற்றும் 42-ன் படியும் அனைத்து சிறுகணிம குவாரிகளுக்கும் குவாரி குத்தகை வழங்கும் முன்பு புவியியல் மற்றும் சுரங்கத் துறை துணை இயக்குநரால் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் இந்திய அரசின் சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தால் வழங்கப்படும், மாநில சுற்றுசூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் / இசைவு ஆகியவற்றை பெற்று சமர்ப்பித்த பின்பு மட்டுமே குவாரி குத்தகை வழங்க முடியும். குவாரி பணி தொடங்குவதற்கு முன்பாக தமிழ்நாடு மாசு கட்டுப்பாட்டு வாரியத்தின் இசைவினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி பணி தொடங்க அனுமதிக்கப்படும்.
- 15) அதிகபட்சத் தொகை கேட்ட நபருக்கு குவாரி குத்தகை உரிமம் உறுதி செய்யப்படுமாயின் அவருக்கு குவாரி குத்தகை உரிமம் வழங்கப்படவுள்ள குவாரியின் புல எண், பரப்பளவு, ஆகிய விவரங்கள் அடங்கிய அறிவிக்கை வழங்கப்பட்டு அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல் மற்றும் வனத்துறையின் தடையின்மை சான்று ஆகியவற்றை விதிகளின்படி உரிய காலத்திற்குள் சமர்ப்பிக்குமாறு தெரிவிக்கப்படும்.
- (அ) மேற்கண்ட அறிவிக்கை பெற்றுக்கொண்ட மனுதாரர் சுரங்கத்திட்டத்தை தகுதி வாய்ந்த நபர் (QP) மூலம் அரசு தெரிவித்துள்ள விதிகள் மற்றும் வழிகாட்டுதலின்படி தயாரித்து அறிவிக்கை பெறப்பட்ட நாளிலிருந்து மூன்று மாத காலத்திற்குள் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரிடம் அங்கீகாரம் பெற சமர்ப்பிக்க வேண்டும்.
- (ஆ) மேற்கண்ட மனுதாரர் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரால் அங்கீகாரம் வழங்கப்பட்ட சுரங்கத்திட்டத்தை இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் மாநில சுற்றுசூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் முன்பு சமர்ப்பித்து தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்றினை பெற்று சமர்ப்பிக்க வேண்டும்.
- (இ) காவேரி வடக்கு வனவிலங்கு சரணாலயம், தேசிய பூங்கா, யானைகளின் வலசை பாதை மற்றும் காப்பு காடுகளிலிருந்து பாதுகாப்பு இடைவெளி தூரத்திற்கு அப்பால் மட்டுமே குத்தகை உரிமம் வழங்க நடவடிக்கை எடுக்கப்பட்டுள்ளது. எனினும், அரசால் மாற்றி அமைக்கப்படும் பாதுகாப்பு இடைவெளி தூரத்திற்குள் குவாரி பகுதி வருவதாக பிற்காலத்தில் தெரியவந்தால் குத்தகை உரிமம் ரத்து செய்ய மேல்நடவடிக்கை தொடரப்படும்.
- (ஈ) அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் முதல் ஐந்து ஆண்டு காலத்திற்கு மட்டுமே செல்லத்தக்கதாகும்.
- (உ) மேற்கண்ட ஆவணங்களை சமர்ப்பித்த பின்பு விதிகளின்படி மனுதாரருக்கு குவாரி குத்தகை வழங்கி ஆணையிடப்படும். அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் தடையின்மை சான்று ஆகியவற்றை குறிப்பிட்ட காலக்கெடுவிற்குள் சமர்ப்பிக்க தவறினால் மனுதாரருக்கு மாவட்ட ஆட்சியர் முன்பு விசாரணைக்கு ஆஜராக வாய்ப்பளித்து விசாரணை நடத்தப்பட்டு ஏற்கனவே வழங்கப்பட்ட உத்தரவு ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- 16) மேற்கூறிய உத்தரவு கிடைக்கப் பெற்றவுடன் விண்ணப்பதாரர், ஆணையில் குறிப்பிடப்பட்ட காலக்கெடுவிற்குள் கீழ்க்கண்ட ஆவணங்களை குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றுவது தொடர்பாக துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களிடம் சமர்ப்பிக்க வேண்டும்.
- (அ) விண்ணப்பதாரரின் கையொப்பமிட்ட வரைவு குத்தகை ஒப்பந்தப்பத்திரம் மற்றும் வரைபடம்.



- (ஆ) அசல் குத்தகை ஒப்பந்தப்பத்திரம் தயார் செய்வதற்கு தேவையான நிதித்துறை சாரா முத்திரைத்தாள்.
- (இ) காப்புத் தொகைக்கான ஏலம் / டெண்டர் தொகையில் இருபது சதவீதம் (20%) அல்லது ரூ.10,000/-ம் இதில் எது அதிகமோ அதை செலுத்தியதற்கான அசல் செலுத்துச்சீட்டு (சலான்).
- (ஈ) மொத்த குத்தகை பரப்பிற்கான பரப்புவரி செலுத்தியதற்கான அசல் சலான்.
- 17) அவ்வாறு குறிப்பிட்ட காலத்திற்குள் மேற்கண்ட ஆவணங்களை சமர்ப்பிக்க தவறினால் வழங்கப்பட்ட குத்தகை உரிமம் ரத்து செய்யப்பட்டு அவர் செலுத்திய அனைத்து தொகைகளும் விதிகளின்படி அரசுக்கு ஆதாயம் செய்து அரசு கணக்கில் சேர்க்கப்படும்.
- 18) மேற்கண்ட ஆவணங்களை ஒப்படைத்து குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றிய பின்பே குவாரிப்பணியை தொடங்க வேண்டும். குவாரி குத்தகை ஆவணம் நிறைவேற்றுமுன் குவாரிப்பணி செய்வது கண்டறியப்பட்டால் அது அனுமதியின்றி கனிமம் வெட்டியெடுத்ததாக கருதப்பட்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி 36-அ -ன்படி உரிய நடவடிக்கை எடுக்கப்படுவதுடன் குற்றவியல் நடவடிக்கையும் எடுக்கப்படும்.
- 19) குவாரி குத்தகைக்காக கோரப்பட்ட மொத்த குத்தகை காலத்திற்குமான ஒரே தடவையில் மொத்தமாக செலுத்தப்படும் குத்தகைத் தொகை நீங்கலாக குத்தகைதாரர் மேற்படி குவாரியில் இருந்து எடுத்துச்செல்ல உத்தேசிக்கும் சிறுகனிமத்திற்கு 1959ம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் அட்டவணை 2ல் குறிப்பிடப்பட்டுள்ள விகிதாச்சாரப்படி சீனியரேஜ் கட்டணத்தை செலுத்தி மொத்த இசைவாணைச்சீட்டு மற்றும் அனுப்புகைச் சீட்டு பெற்றுதான் சிறுகனிமத்தினை எடுத்துச் செல்ல வேண்டும். மேலும் அரசால் அவ்வப்போது திருத்தி நிர்ணயிக்கப்படும் சீனியரேஜ் தொகையை செலுத்தி அனுமதிச்சீட்டுப்பெற வேண்டும். மேலும் கனிமங்களை வெளியில் எடுத்துச் செல்ல போக்குவரத்து அனுமதிச்சீட்டு பெற ஒவ்வொரு முறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவீத தொகையை கிருஷ்ணிகிரி மாவட்ட கனிம அறக்கட்டளை நிதியாக கிருஷ்ணிகிரி பாரத மாநில வங்கி (State Bank of India) கணக்கு என்.37243080996-ல் செலான் மூலம் செலுத்த வேண்டும். மேலும் கூடுதலாக அரசால் நிர்ணயிக்கப்பட்ட பசுமை வரியை உரிய அரசு கணக்கில் செலுத்தி அசல் சலான் சமர்ப்பிக்க வேண்டும்.
- 20) குத்தகைதாரர் ஒவ்வொரு மாதமும் குவாரிப்பணி செய்த தொழிலாளர்கள், குவாரி செய்த கனிமத்தின் அளவிற்குரிய கணக்குகளை பிரதி மாதம் ஐந்தாம் நாளுக்குள் துணை இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணிகிரி அவர்களுக்கு தணிக்கைக்கு ஆஜர் செய்ய வேண்டும்.
- 21) குவாரிகளுக்கு அருகில் உள்ள போக்குவரத்து சாலைகள், கிராம சாலைகள் குடியிருப்பு பகுதிகள் வீடுகள், வண்டிப்பாதைகள், மின் மற்றும் தொலைபேசி கம்பிகள், டிரான்ஸ்பார்மர்கள், ரயில்பாதைகள் பொதுப்பணித்துறை, வாய்க்கால், மதசம்பந்தமான வழிபாட்டுத்தலங்கள் மற்றும் இதர நிலையான அமைப்புகள் இவற்றிலிருந்து 1959ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின்படி பாதுகாப்பு இடைவெளி விட்டு மீதமுள்ள இடத்திற்குள் தான் குவாரிப்பணி செய்யவேண்டும். பொதுமக்கள் உபயோகிக்கும் இடங்கள் குடியிருப்புக்கள் பட்டா நிலங்கள் அல்லது பொதுச் சொத்துக்கள் ஆகியவற்றிற்கு சேதம் ஏதும் ஏற்படாமல் குவாரிப்பணி செய்ய வேண்டும். குவாரி பணியால் சேதம் ஏதும் ஏற்பட்டால் அதற்கு குத்தகைதாரரே முழு பொறுப்பேற்று அதில் ஏற்படும் நட்டத்தை ஈடு செய்து தரவேண்டும்.
- 22) குத்தகைதாரரை மேற்குறிப்பிட்ட நிபந்தனைகள் அல்லாமல் 1959ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், கனிமங்கள் மற்றும் சுரங்கங்கள் (மேம்படுத்துதல் மற்றும் முறைப்படுத்துதல்) சட்டம் 1957 மற்றும் இந்த அரசிதழில் குறிப்பிடப்பட்டுள்ள சிறப்பு நிபந்தனைகள் மற்றும் அரசால் அவ்வப்போது கொண்டுவரப்படும் ஆணைகளும் விதிகளும் கட்டுப்படுத்தும்.



- 23) இவ்விதிகளின்கீழ் வழங்கப்படும் குவாரிகளின் குத்தகை காலம் எக்காரணத்தைக் கொண்டும் குத்தகை வழங்கப்பட்ட காலத்திற்கு மேல் நீட்டிக்கப்படவோ அல்லது குத்தகை காலம் புதுப்பிக்கப்படவோ மாட்டாது. குத்தகை காலம் முடிந்தபின் குத்தகைதாரர்கள் குத்தகைக்கு விடப்பட்ட பகுதிகளில் எவ்விதமான உரிமையும் கொண்டாடக் கூடாது. மேலும், குத்தகை காலம் முடிந்தபின் மேற்கண்ட புலத்தை அரசுக்கு திரும்ப ஒப்படைத்து அதற்கான சான்றிதழை கிராம நிர்வாக அலுவலரிடம் பெற்று வட்டாட்சியர் வாயிலாக மாவட்ட ஆட்சியருக்கு தெரிவிக்க வேண்டும்.
- 24) 14 வயதுக்குட்பட்ட குழந்தை தொழிலாளர்களை குவாரிப்பணியில் ஈடுபடுத்தக்கூடாது.
- 25) இந்த அரசிதழில் குவாரி குத்தகை உரிமத்திற்காக அறிவிக்கப்பட்டிருக்கும் பட்டியலில் உள்ள குத்தகை விடப்படும் குவாரிகளை டெண்டர் / ஏலம் நடைபெறுவதற்கு முன்பாக நிறுத்தி வைக்கவோ, நீக்கவோ, புதியதாக சேர்க்கவோ குவாரி பரப்பளவை மாற்றவோ, மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.
- 26) நிர்வாக சூழல் காரணமாக டெண்டர் மற்றும் ஏலத்தை ரத்து செய்ய மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.
- 27) செய்தித்தாள் மூலமாகவோ, மாவட்ட அரசிதழ் மூலமாகவோ, அறிவிப்பு செய்யப்படாத குவாரிகளுக்கு ஏதாவது ஒப்பந்தப்புள்ளி விண்ணப்பங்கள் கிடைக்கப் பெற்றால் அவையாவும் முதிர்ச்சி அடையாத விண்ணப்பமாக கருதப்பட்டு உடனடியாக நிராகரிக்கப்படும். குறித்த காலக்கெடுவிற்குள் வந்து சேராத விண்ணப்பங்கள் காலவரையறை கடந்த விண்ணப்பமாக கருதப்பட்டு அவையாவும் நிராகரிக்கப்படும், நிராகரிக்கப்பட்ட விண்ணப்பங்களின் விண்ணப்ப கட்டணம் தவிர பிற வங்கி வரைவோலைகள் மட்டும் விண்ணப்பதாரருக்கு திரும்ப அனுப்பி வைக்கப்படும்.
- 28) 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் அட்டவணைப் படிவம்-1ல் கண்ட ஒப்பந்தப்பத்திரத்தில் தேவையான அளவிற்கு நிபந்தனைகளை புதியதாக சேர்க்கவோ, நீக்கவோ மாற்றி அமைக்கவோ அரசுக்கு அதிகாரம் உண்டு, குத்தகை பத்திரம் ஏற்படுத்தியபின்பு புல எண் மற்றும் குவாரி செய்ய ஒதுக்கப்பட்ட பரப்புக்குறித்து எவ்வித தாவரவழி செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.
- 29) குத்தகை ஒப்பந்தப்பத்திரத்தை புலவரைபடத்துடன் சொத்து மாற்றுகைச் சட்டம் 1882-ன் பிரிவு 107ன் கீழ் குத்தகைதாரர் தனது சொந்த செலவில் பதிவுசெய்து பதிவு செய்த ஒப்பந்தப்பத்திரத்தினை கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகத்தில் உடன் ஒப்படைக்க வேண்டும்.
- 30) தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதி 36(1)ல் வரையறுக்கப்பட்டுள்ளவாறு அருகிலுள்ள குடியிருப்புகளுக்கு பாதுகாப்பு இடைவெளியாக 300 மீட்டரும் கிராம சாலைகளுக்கு 10 மீட்டரும் இதர சாலைகள் கட்டிடங்கள், வழிபாட்டு தலங்கள், மின்கம்பி பாதைகள், தொலைபேசி பாதைகள், புகைவண்டிப்பாதைகள், டிரான்ஸ்பார்மர்கள், ஆறு, ஏரி, குளம், குட்டை மற்றும் இதர பொது சொத்துக்கள் ஆகியவற்றிற்கு பாதுகாப்பு இடைவெளியாக 50 மீட்டரும் விட்டு மீதமுள்ள இடத்திற்குள்ள்தான் குவாரிப்பணி செய்யப்படவேண்டும். புராதன சின்னங்களுக்கு தொல்லியல் துறையால் வரையறுக்கப்பட்டுள்ள பாதுகாப்பு இடைவெளி விட்டும் குவாரிப்பணி செய்ய வேண்டும். விதிகளின்படி தொல்லியல் சின்னங்களுக்கு 500 மீட்டர் பாதுகாப்பு இடைவெளி விட்டும், வனவிலங்கு சரணாலயம், தேசிய பூங்கா, யானைகளின் வலசை பாதை மற்றும் காப்புக்காடுகளுக்கு ஒரு கிலோ மீட்டர் பாதுகாப்பு இடைவெளிவிட்டும் குவாரி பணி செய்ய வேண்டும். பொதுமக்கள் உபயோகிக்கும் இடங்களான குடியிருப்புகள் பட்டா நிலங்கள் மற்றும் இதர பொதுசொத்துக்கள் ஆகியவற்றிற்கு சேதம் ஏதும் நேரிட்டால் அதற்கு குத்தகைதாரரே முழுபொறுப்பேற்று அதில் ஏற்படும் நட்டத்தை ஈடுசெய்து தரவேண்டும்.
- 31) நிர்வாக காரணம் மற்றும் பொது நலனை கருத்தில் கொண்டு குத்தகைக்கு விடப்பட்ட பரப்பினை பின்னர் குறைத்து நிர்ணயிக்கவும், குவாரி குத்தகையை ரத்து செய்யவும் அரசுக்கு அதிகாரம் உண்டு.



- 32) குத்தகைதாரர் 1959ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின்படியும் மாவட்ட அரசிதழில் கண்டுள்ள நிபந்தனைகளின்படியும் ஒப்பந்தப்பத்திர நிபந்தனைகளின்படியும் நடந்து கொள்ள கடமைப்பட்டவராவார். குத்தகைகாலத்தில் சட்டதிட்டங்கள் மற்றும் குவாரி குத்தகை நிபந்தனைகளுக்கு ஒப்பந்த விதிகளுக்கு முரண்பட்டு குத்தகைதாரர் நடந்து கொண்டால் குத்தகை ரத்துச் செய்யப்படுவதுடன் காப்புத்தொகை மற்றும் அவர் செலுத்திய அனைத்து தொகைகளும் அரசுக்கு பறிமுதல் செய்யப்படும். அக்குவாரிக்கு மீண்டும் குவாரி குத்தகை வழங்க நடவடிக்கை மேற்கொள்ளப்படும்.
- 33) குவாரி குத்தகை வழங்கப்பட்ட இடத்தில் சாதாரண கற்களை குவாரி செய்வதில் ஏற்படக்கூடிய நஷ்டங்களுக்கு அரசால் எவ்வித நஷ்டஈடும் வழங்கப்பட மாட்டாது.
- 34) வழங்கப்பட்ட குத்தகை உரிமத்திற்கு பொதுமக்கள் மற்றும் அரசு துறை மூலம் கடுமையான ஆட்சேபம் இருப்பின் பொது நன்மையை கருதி குத்தகையை ரத்துச் செய்ய நேரிட்டால் அதனால் ஏற்படும் இழப்பிற்கு ஈடுகோர குத்தகைதாரருக்கு உரிமை இல்லை.
- 35) குத்தகைதாரர் குவாரியை வேறு யாருக்கும் மாற்றவோ உள் குத்தகைக்கு விடவோ கூடாது. அப்படி ஏதாவது செய்திருப்பது தெரிய வந்தால் மேற்படி குத்தகை ரத்துச்செய்யப்படுவதுடன் குத்தகைதாரர் செலுத்திய தொகையும் அரசுக்கு ஆதாயம் செய்யப்படும்.
- 36) குத்தகைதாரர், புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அலுவலகத்தில் அரசு குறிப்பிட்ட படிவத்தில் அனுப்புகைச் சீட்டுக்களை அச்சிட்டு சமர்ப்பிக்க வேண்டும். குத்தகைதாரர் சிறுகனிமம் எடுத்து செல்லும் வாகனத்துடன் அனுப்புகைச் சீட்டு கொடுத்து அனுப்ப வேண்டும். இந்நடைச்சீட்டை இரு பிரதிகள் அச்சிட்டு வரிசை எண்ணிட்டு தாங்கள் உத்தேசமாக எடுக்க இருக்கும் லோடுகளுக்கு லோடு ஒன்றுக்கு ஒரு சீட்டு வீதம் கணக்கிட்டு அதற்குரிய சீனியரேஜ் தொகையினை செலுத்திய பின்னர், கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநரிடம் அனுப்புகைச்சீட்டு மற்றும் மொத்த இசைவாணைச் சீட்டு ஆகியவற்றில் உரிய முத்திரையும் கையொப்பமும் பெற்றபின்பே பயன்படுத்த வேண்டும்.
- 37) ஒப்புதல் பெறப்படாத அனுப்புகைச்சீட்டுடன் கனிமம் கொண்டு செல்லும் வாகனங்கள் அதிலுள்ள சிறுகனிமத்தை முறையற்ற வகையில் எடுத்துச்செல்வதாக கருதப்பட்டு உரிய சட்டத்தின்படி உரிய அலுவலர்களால் கைப்பற்றப்பட்டு அபராதம் விதிக்கப்படும்.
- 38) புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்கள், காவல் துறையினர் அல்லது வருவாய்த்துறை அலுவலர்கள் முதலானோர் தணிக்கை செய்யும்போது உரிய கணக்குகள் மற்றும் அனுப்புகைச் சீட்டு முதலானவைகளை குவாரி குத்தகை உரிமம் பெற்ற குத்தகைதாரர் காண்பிக்க வேண்டும்.
- 39) அரசு அலுவலர்கள் தணிக்கை செய்யும் போது சிறுகனிமங்கள் கொண்டு செல்லும் வாகனங்களை தணிக்கைக்கு உட்படுத்த வாகன ஓட்டுனர்களை குத்தகைதாரர்கள் அறிவுறுத்த வேண்டும்.
- 40) அனுப்புகைச்சீட்டில் உள்ள கலங்கள் பூர்த்தி செய்யப்படாமலோ அல்லது தவறாக எழுதப்பட்டு வாகனங்களுக்கு கொடுக்கப்பட்டிருந்தாலோ சிறுகனிமம் கொண்டு செல்லும் வாகன உரிமையாளருக்கு அபராதம் மற்றும் குற்றவியல் நடவடிக்கை எடுக்கப்படும். மேலும், குவாரி குத்தகையை ரத்து செய்ய நடவடிக்கை மேற்கொள்ளப்படும்.
- 41) குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் எவ்வளவு சிறுகனிமங்கள் வெட்டி எடுக்கப்பட்டது என்பதையும் எந்த அளவு கனிமங்கள் வாரி, வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விவரத்தையும் காட்டும் பதிவேடு பராமரிக்க வேண்டும். குவாரி குத்தகை சம்பந்தமான இதர பதிவேடுகளை பராமரிக்க வேண்டும்.



- 42) அரசு மற்றும் மாவட்ட ஆட்சியரால் குவாரி குத்தகை உரிமம் சம்பந்தமாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அங்கீகரிக்கப்பட்ட ஏற்படுத்தப்படும் சட்ட திட்டங்களுக்கும், நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பாட்டு நடக்க வேண்டும். குத்தகை காலத்திலோ அல்லது அதற்குப்பின்னரோ கிராமம் தவறி குத்தகையை பயன்படுத்தியதனால் ஏற்படும் சகல நஷ்டங்களுக்கும் குத்தகைதாரர்கள் பொறுப்பேற்க வேண்டும். இதற்காக விதிக்கப்படும் அபராதம் மற்றும் குற்றவியல் நடவடிக்கைக்கு கட்டுப்பாட்டு நடக்க வேண்டும்.
- 43) குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகையை ரத்துச் செய்யவோ செய்யப்பட்ட தவறுகளுக்கு குத்தகைதாரருக்கு தண்டனை விதிக்கவோ கிரிமினல் வழக்குதொடரவோ அரசுக்கு அதிகாரம் உண்டு. குத்தகை ரத்துச் செய்யப்பட்டால் காப்புத்தொகை உள் பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயம் செய்யப்படும். வழங்கப்பட்ட குத்தகை உரிமத்தை எக்காரணத்திற்காவது ரத்துச்செய்யும் பட்சத்தில் அதனால் ஏற்படும் எவ்விட நஷ்டங்களுக்கும் அரசு பொறுப்பல்ல. குத்தகை எடுத்தவர் எந்த காரணத்தை முன்னிட்டும் தனக்கு இழப்பு ஏற்பட்டால் நஷ்டஈடு கேட்கக்கூடாது.
- 44) குத்தகை எடுத்தவர் குத்தகையை அனுபவிக்காமல் விட்டாலும், செலுத்தப்பட்ட குத்தகை தொகை எக்காரணத்தை முன்னிட்டும் திரும்ப வழங்கப்படமாட்டாது.
- 45) குவாரிகளின் எல்லைகள் பற்றி பிரச்சினைகள் ஏற்பட்டால் மாவட்ட ஆட்சியரின் தீர்ப்பே இறுதியானது.
- 46) கற்குவாரி குத்தகை உரிமம் வழங்கப்பட்ட பின்னர் அக்கற்குவாரியின் ஏதாவது ஒரு பகுதியில் வரலாற்று முக்கியத்துவம் வாய்ந்த புரதானக்கால கல்வெட்டுக்கள், சிற்ப வடிவமைப்புகள் போன்றவைகள் காணப்பட்டால் அது குறித்து அரசுக்கு தகவல் தரவேண்டும். மேலும், அப்பகுதியில் கற்கள் உடைப்பது நிறுத்தப்பட்டு அப்புராதன சின்னங்கள் பாதுகாக்கப்பட வேண்டும்.
- 47) டெண்டரில் கோரப்படும் புல எண்களின் பேரில் எவையேனும் நீதிமன்றத்தின் ஆணை / தடையாணை முதலானவை நீதிமன்றத்தில் பெறப்பட்டதாக தெரியவந்தால் அவைகள் மீது குத்தகை உரிமம் வழங்குவதில் மாவட்ட ஆட்சியரின் முடிவே இறுதியானது.
- 48) குத்தகைதாரர் குத்தகை வழங்கப்பட்ட குவாரி முகப்பில் குவாரியின் புல எண் பரப்பு குத்தகைதாரர் பெயர் குத்தகை வழங்கப்பட்ட செயல்முறை ஆணை எண் குத்தகை தொகை, குத்தகை காலம் போன்ற விவரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தனது சொந்த செலவில் வைத்து குத்தகை காலம் முழுதும் பராமரிக்க வேண்டும்.
- 49) குத்தகைதாரர் குவாரியின் எல்லைகளை தெளிவாக தெரியும்படி வண்ணமிட்ட எல்லைக் கற்களை (DGPS) முறையில் அளவீடு செய்து ஊன்றி அடையாளமிட்ட பின்பே குவாரி செய்ய வேண்டும். எல்லை கற்களை குத்தகை காலம் முழுவதும் தனது சொந்த செலவில் நன்கு பராமரிக்க வேண்டும்.
- 50) குத்தகைக்கு வழங்கப்பட்ட கற்குவாரிகளில் சாதாரண கற்கள், கட்டுக்கல், சக்கை கற்கள், ஜல்லி கற்கள் ஆகியவைகளை மட்டுமே குவாரி செய்ய வேண்டும் அயல் நாட்டிற்கு ஏற்றுமதி செய்வதற்கும் மெருகு ஏற்றுமதிக்கும் பயன்படும் வடிவமைக்கப்பட்ட கற்களை உற்பத்தி செய்யக் கூடாது.
- 51) குவாரியில் வெடி வைத்து கற்களை உடைக்க அங்கீகாரம் பெற்ற வெடிபொருள் விற்பனையாளரிடம் (Licenced Explosive Dealer) வெடிபொருட்களை கொள்முதல் செய்து சான்று பெற்ற வெடி வெடிப்பவரைக் (Licenced shot Firer ) கொண்டு அனைத்து பாதுகாப்பு நிபந்தனைகளையும் கடைபிடித்து வெடிகளை வெடிக்க வைக்க வேண்டும்.
- 52) குவாரியில் சாதாரண ஏர் கம்பர்சர்களை கொண்டு துளையிட்டு வெடிவைக்க வேண்டும். ஆழ்துளை கிணறு உபகரணங்களை (Rig Bore) கொண்டு துளையிட்டு வெடிவைக்கக்கூடாது. அருகிலுள்ள விவசாய நிலங்கள், பொதுச்சொத்துக்கள் மற்றும் பொதுமக்கள் ஆகியோருக்கு எவ்வித பாதிப்பும் ஏற்படாமல் குவாரி பணி செய்ய வேண்டும்.

- 53) அரசு / ஆணையர் புவியியல் மற்றும் சுரங்கத்துறை மற்றும் மாவட்ட ஆட்சியரால் இது தொடர்பாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்டதிட்டங்களுக்கும் நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பட்டு நடக்க வேண்டும்.
- 54) 1961ஆம் ஆண்டின் மெட்டாலிபெரஸ் மைன்ஸ் ரெகுலேஷன்ஸ், 1936 ஆம் ஆண்டின் சம்பளம் வழங்குதல் சட்டம், 1884 ஆம் ஆண்டின் இந்திய வெடிபொருட்கள் சட்டம், 1864 ஆம் ஆண்டு குறைந்தபட்ச ஊதியச்சட்டம் ஆகியவற்றிற்கு உட்பட்டு குத்தகைதாரர் கனிமங்கள் வெட்டி எடுத்து வெளியேற்ற வேண்டும்.
- 55) குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இதர நபர்களுக்கு விபத்து ஏற்படின் அதற்கான முழுப் பொறுப்பையும் குத்தகைதாரரே ஏற்க வேண்டும். அதற்கு எவ்வகையிலும் அரசு பொறுப்பாகாது. மேலும், குவாரி தொழிலாளர்களை அரசின் காப்பீட்டு திட்டத்திலும் தொழிலாளர் நல வாரியத்தில் பதிவு செய்திடல் வேண்டும்.
- 56) குவாரி தொடர்பான அனைத்து பணிகளும் சுற்றுச்சூழல் இசைவாணையில் தெரிவிக்கப்பட்ட காலத்தில் மட்டுமே செயல்படுத்தப்பட வேண்டும்.
- 57) சாதாரண கற்குவாரி உரிமம் தொடர்பான டெண்டர் / ஏலம் உறுதி செய்யப்பட்ட விண்ணப்பதாரர் உரிய குவாரி குத்தகை பகுதிக்கு மாவட்ட வன அலுவலர், கிருஷ்ணகிரி / ஓசூர் அவர்களிடமிருந்து தடையின்மை சான்று பெற்று சமர்ப்பிக்க வேண்டும்.
- 58) அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தின்படி குவாரி பணி செய்யப்பட வேண்டும் குத்தகை காலத்தில் அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தில் குறிப்பிட்ட அளவை விட அதிகமான கனிமத்தை குவாரி செய்ய வேண்டியிருப்பின், திருத்தப்பட்ட சுரங்க திட்டம் சமர்ப்பித்து அங்கீகாரம் பெற்று அதற்கான சுற்றுச் சூழல் தடையின்மை சான்று சமர்ப்பித்த பின்பே அதனை செய்ய வேண்டும்.
- 59) குவாரி ஆரம்பிப்பது தொடர்பான அறிவிப்பை (Notice of opening) இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கு சமர்ப்பிக்க வேண்டும்.
- 60) குவாரியில் அங்கீகாரம் பெற்ற மைன்ஸ் மேனேஜர்/மைன்ஸ் மேட்/பிளாஸ்டர் ஆகியோர்களை பணியமர்த்திய பின்பே குவாரிப் பணியை தொடங்க வேண்டும்.
- 61) குவாரிப் பகுதியில் மைன்ஸ் மேட் கண்காணிப்பிலேயே வெடிவைத்து வெடிக்கும் பணியை செய்ய வேண்டும்.
- 62) குவாரிப் பகுதியில் விபத்து ஏதும் ஏற்பட்டால் அதனை உடனடியாக இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கும் கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அவர்களுக்கும் தெரிவிக்க வேண்டும்.

அட்டவணை - சாதாரண கற்குவாரி பட்டியல்

(i.) கிருஷ்ணகிரி வருவாய் கோட்டம்

கிருஷ்ணகிரி வட்டம்

வ. எண்	கிராமம்	புல எண்கள்	மொத்த பரப்பு	குவாரி குத்தகை வழங்கும் பரப்பு	வகைப்பாடு	குத்தகை உரிமம் காலம்
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			(ஹெக்டேர்)	(ஹெக்டேர்)		
1	ஜீஞ்சுப்பள்ளி	169(பகுதி)	8.56.00	2.00.00	தீ.ஏ.த.பாறை	10
2	ஜீஞ்சுப்பள்ளி	197/2(பகுதி)	1.77.00	1.20.00	தீ.ஏ.த தரிசு	10

(1)	(2)	(3)	13 (4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	(6)	(7)
3	பில்லனகுப்பம்	278	2.08.50	2.08.50		
பர்கூர் வட்டம்						
4	குலாமலை	54 (பகுதி-3)	16.45.0	1.40.00	தீ.ஏ.த பாறை	10



(ii) ஓசூர் வருவாய் கோட்டம்.

ஓசூர் வட்டம்						
5	பஞ்சாட்சிபுரம்	603/1 (பகுதி-சி)	21.20.50	1.30.00	தீ.ஏ.த தரிசு	5
6	பஞ்சாட்சிபுரம்	603/1 (பகுதி-டி)	21.20.50	2.00.00	தீ.ஏ.த தரிசு	5
7	கோபனப்பள்ளி	220/1 (பகுதி-1)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
8	கோபனப்பள்ளி	220/1 (பகுதி-2)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
9	கோபனப்பள்ளி	220/1 (பகுதி-3)	16.76.00	3.00.00	தீ.ஏ.த தரிசு	10
10	கோபனப்பள்ளி	220/1 (பகுதி-4)	16.76.00	2.00.00	தீ.ஏ.த தரிசு	10
11	கோபனப்பள்ளி	381 (பகுதி-1)	4.61.50	1.30.00	தீ.ஏ.த தரிசு	10
12	கோபனப்பள்ளி	381 (பகுதி-2)	4.61.50	1.50.00	தீ.ஏ.த தரிசு	10
குளகிரி வட்டம்						
13	காமன்தொட்டி	616/3 (பகுதி-2)	7.66.50	2.75.00	தீ.ஏ.த தரிசு	5
14	காமன்தொட்டி	653/1(பகுதி)	7.56.00	3.35.00	தீ.ஏ.த தரிசு	5
15	காமன்தொட்டி	754 & 760 (பகுதி-6)	36.46.50	4.00.00	தீ.ஏ.த மலை	10
16	வெங்கடேசுபுரம்	86-(பகுதி-1)	60.80.00	2.50.00	தீ.ஏ.த கரடு	5
17	வெங்கடேசுபுரம்	86-(பகுதி-2)	60.80.00	2.00.00	தீ.ஏ.த கரடு	10
18	வெங்கடேசுபுரம்	86-(பகுதி-3)	60.80.00	2.00.00	தீ.ஏ.த கரடு	5
19	பி.எஸ்.திம்மசந்திரம்	88/1 (பகுதி-3)	12.79.00	4.50.00	தீ.ஏ.த பாறை	10

(1)	(2)	(3)	14 (4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	(6)	(7)
20	தோரிப்பள்ளி	72(பகுதி) 87/1(பகுதி)	9.71.00 8.77.00	0.65.00 0.95.00	தீ.ஏ.த பாறை தீ.ஏ.த பாறை	10
			மொத்தம்	1.60.00		
21	துப்புகானப்பள்ளி	420-(பகுதி-1)	46.61.00	4.00.00	தீ.ஏ.த கரடு	10
22	துப்புகானப்பள்ளி	420-(பகுதி-3)	46.61.00	4.60.00	தீ.ஏ.த கரடு	10
23	துப்புகானப்பள்ளி	420-(பகுதி-4)	46.61.00	4.50.00	தீ.ஏ.த கரடு	10
24	சென்னப்பள்ளி	327/1 (பகுதி-1)	38.78.00	2.45.00	தீ.ஏ.த கரடு	10
25	சென்னப்பள்ளி	327/1 (பகுதி-2)	38.78.00	2.45.00	தீ.ஏ.த கரடு	10
<b>தேன்கனிக்கோட்டை வட்டம்</b>						
26	தாரவேந்திரம்	320/1 (பகுதி)	2.23.00	1.70.50	தீ.ஏ.த தரிசு	10
27	நாகமங்கலம்	629 (பகுதி)	188.50.00	3.20.50	தீ.ஏ.த கல்லாங் குத்து	10

கிருஷ்ணகிரி,  
10-03-2022.

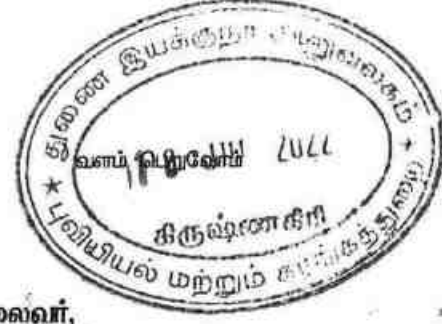
வி. ஜெய சந்திர பானுரெட்டி,  
மாவட்ட ஆட்சியர்,  
கிருஷ்ணகிரி மாவட்டம்.

  
S. MATHAN PRAKASH, M.Sc., M.Phil.,  
ROP/CNN/270/2016/A

தமிழ்நாடு எழுதுபொருள் மற்றும் அச்சகத்துறை ஆணையரால் சேலம் அரசினர் கிளை அச்சகத்தில் அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.



வணம் காப்போம்

**தமிழ்நாடு வனத்துறை****அனுப்புதல்**

செல்வி. க. கார்த்திகேயனி, இ.வ.ப.,  
வனஉயிரினகாப்பாளர்,  
ஒசூர் வனக்கோட்டம்,  
மத்திகிரி, ஒசூர் - 635 110.  
தொலைபேசி எண். 04344 296600.

**பெறுதல்**

மாவட்ட ஆட்சித் தலைவர்,  
கிருஷ்ணகிரி மாவட்டம்,  
கிருஷ்ணகிரி.

**ந.க.எண். 261/2022/எல் நாள். 10.02.2022**

(முடிபிலவ வருடம், தை மாதம் 28, திருவள்ளூர் ஆண்டு 2052)

**அய்யா,**

**பொருள் :** கனிமங்களும் குவாரிகளும் - கிருஷ்ணகிரி மாவட்டம் - அரசு புலங்களில் உரிமம் முடிவடைந்த குவாரிகள் மற்றும் புதிய குவாரிகளை டெண்டர் மற்றும் பொது ஏலத்தில் கொண்டுவர வனப்பகுதி மற்றும் சரணாலயத்திற்கு உள்ள தொலைவு விவரம் மற்றும் இதர விவரங்கள் கோரியது - தொடர்பாக.

- பார்வை :**
1. அரசு ஆணை (நிலை) எண். 295 தொழிற் (எம்எம்சி.1) துறை நாள். 03.11.2021.
  2. துணை இயக்குநர், புவியியல் மற்றும் கரங்கத்துறை, கிருஷ்ணகிரி மாவட்டம் ந.க.எண்.817/2020/கனிமம் நாள். 31.12.2021 மற்றும் 04.02.2022.
  3. மாவட்ட ஆட்சித் தலைவர், கிருஷ்ணகிரி ந.க.எண்.817/2020/கனிமம் நாள். 04.02.2022.
  4. இவ்வலுவலக ந.க.எண். 261/2022/எல், நாள்.10.02.2022

\*\*\*\*\*

பார்வையின் கடிதங்களில் தெரிவிக்கப்பட்ட அரசு புலங்களில் உரிமம் முடிவற்ற குவாரிகள் மற்றும் புதிய குவாரிகளுக்கு டெண்டர் மற்றும் பொது ஏலத்தில் கொண்டுவர, வனப்பகுதி மற்றும் சரணாலயப் பகுதியிலிருந்து உள்ள தொலைவு விவரம் கோரப்பட்டுள்ளது. இது தொடர்பான விவரம் பின்வருமாறு தெரிவிக்கப்படுகிறது.

குவாரி அனுமதிக்கான வனத்துறையின் குறிப்புரையை முறையே வனப்பாதுகாவலர் மற்றும் முதன்மை தலைமை வனப்பாதுகாவலர் அவர்களின் அங்கீகாரத்தின்படியே, வனஉயிரின காப்பாளரால் வழங்கப்படுகிறது. எனவே, இவ்வரைவு வனத்துறையின் தடையின்மை ஆவணமாக கருதிடலாகாது. மேலும், பார்வையின் கடிதத்தில் கேட்டவாறு வனத்துறையின் குறிப்புரையளிப்பது குறித்து முன்மொழிவு / பரிந்துரை கடிதம் பார்வை 4ல் கண்ட இவ்வலுவலக கடிதத்தில் வனப்பாதுகாவலர், தருமபுரி மூலமாக முதன்மை தலைமை வனப்பாதுகாவலர் அவர்களுக்கு சமர்ப்பிக்கப்பட்டுள்ளது. அதன்படி, அரசு புலங்களில் குவாரி அமைக்க அனுமதி கோரப்பட்ட இடத்தின் தூரம் தகவலின்பொருட்டு பின்வருமாறு தெரிவிக்கப்படுகிறது.

**அட்டவணை 1**

**கேள்வர் / பொது ஏலம் விடுவதற்கு பரிந்துரை செய்யப்படும் குவாரி பகுதிகள் விவரம்**

Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F. No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWLS (km)
					Latitude	Longitude		
<b>Krishnagiri Taluk</b>								
1	Jinjupalli	Un-assessed waste - Parai	169 (Part)	2.00.00	12.54916	78.15410	3.4 Pethathalapalli	20 Udedurgam
2	Jinjupalli	Un-assessed waste - Tharisu	197/2 (Part)	1.20.00	12.55956	78.15585	4 Pethathalapalli	20.4 Udedurgam
3	Bilanakuppam	Un-assessed waste - Parai	278	2.08.50	12.59999	78.16812	3.2 Naralapalli Extn.	23 Udedurgam
<b>Bargur Taluk</b>								
4	Shoolamalai	Un-assessed waste - Parai	54-Part-3	1.40.00	12.51168	78.25921	7.4 Pethathalapalli	31.2 Udedurgam
<b>Shoolagiri Taluk</b>								
5	Kamandoddi	Un-assessed waste - Tharisu	616/3 (Part-2)	2.75.00	12.66910	77.94928	2.4 Settupalli	14.2 Udedurgam
6	Kamandoddi	Un-assessed waste - Tharisu	653/1 (Part)	3.35.00	12.66448	77.94973	2.8 Settupalli	13.7 Udedurgam
7	Kamandoddi	Un-assessed waste-Malai	754 & 760 (Part-VI)	4.00.00	12.65973	77.96080	2.7 Settupalli	13.3 Udedurgam
8	Kamandoddi	Un-assessed waste - Tharisu	1276 (Part)	2.00.00	12.66421	77.96741	2.2 Settupalli	13.9 Udedurgam
9	Venkatesapuram	Un-assessed waste-Karadu	86-Part-1	2.50.00	12.75552	77.94513	1.05 Athimugam II	24 Udedurgam
10	Venkatesapuram	Un-assessed waste-Karadu	86-Part-2	2.00.00	12.75586	77.94660	1.05 Athimugam II	24.1 Udedurgam
11	Venkatesapuram	Un-assessed waste-Karadu	86-Part-3	2.00.00	12.75397	77.94352	1.04 Athimugam II	23.8 Udedurgam
12	B.S. Thimmasandiram	Un-assessed waste-Parai	88/1 (Part-3)	4.50.00	12.84070	77.95736	1.01 Amuthugondapalli	33.5 Udedurgam
13	Doripalli	Un-assessed waste-Parai	72(Part)	0.65.00	12.71262	77.95474	2.2 Settupalli	19.3 Udedurgam
			87/1(Part)	0.95.00				
			<b>Total</b>	<b>1.60.00</b>				
14	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-1	4.00.00	12.62856	77.95266	4.5 Sanamavu	9.9 Udedurgam
15	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-3	4.60.00	12.62604	77.95370	4.8 Sanamavu	9.7 Udedurgam
16	Thuppuganapalli	Un-assessed waste-Karadu malai	420-Part-4	4.50.00	12.62499	77.95265	4.7 Sanamavu	9.6 Udedurgam



Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F. No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWS (km)
					Latitude	Longitude		
17	Chennapalli	Un-assessed waste - Karadu	327/1 - Part-1	2.45.00	12.62504	78.05404	2 Errandapalli	14.3 Udedurgam
18	Chennapalli	Un-assessed waste - Karadu	327/1 - Part-2	2.45.00	12.62400	78.05477	2 Errandapalli	14.3 Udedurgam
<b>Hosur Taluk</b>								
19	Mugalur	Un-assessed waste	232/2 (Part-2)	4.85.00	12.62273	77.81719	5.6 Sanamavu	11.6 Udedurgam
20	Panchakshipuram	Un-assessed waste	603/1 (Part-C)	1.30.00	12.59781	77.79278	8.6 Sanamavu	11.6 Udedurgam
21	Panchakshipuram	Un-assessed waste	603/1 (Part-D)	2.00.00	12.59568	77.79277	8.6 Sanamavu	11.5 Udedurgam
22	Gobanapalli	Un-assessed waste	220/1 (Part-1)	3.00.00	12.63255	77.81140	6.4 Sanamavu	13 Udedurgam
23	Gobanapalli	Un-assessed waste	220/1 (Part-2)	3.00.00	12.63169	77.81128	6.4 Sanamavu	12.8 Udedurgam
24	Gobanapalli	Un-assessed waste	220/1 (Part-3)	3.00.00	12.63221	77.81357	6.2 Sanamavu	12.8 Udedurgam
25	Gobanapalli	Un-assessed waste	220/1 (Part-4)	2.00.00	12.63109	77.81268	6.3 Sanamavu	12.7 Udedurgam
26	Gobanapalli	Un-assessed waste	381 (Part-1)	1.30.00	12.63489	77.81198	6.4 Sanamavu	13.2 Udedurgam
27	Gobanapalli	Un-assessed waste	381 (Part-2)	1.50.00	12.63391	77.81214	6.4 Sanamavu	13.1 Udedurgam
<b>Denkanikottai Taluk</b>								
28	Hosapuram	Un-assessed waste	346 (Part), 353, 354/2	1.97.50	12.64563	77.81959	6.1 Sanamavu	13.8 Udedurgam
29	Daravendiram	Un-assessed waste - Podu	320/1 (Part)	1.70.50	12.56214	77.68326	6.5 Jawalagiri	6.5 Jawalagiri
			320/2	0.29.50				
			<b>Total</b>	<b>2.00.00</b>				
30	Nagamangalam	Un-assessed waste - Kallankuthu	629 (Part)	3.20.50	12.57400	77.91418	3.9 Udedurgam	3.9 Udedurgam

மேற்கண்ட அட்டவணை 1ல் உள்ள குவாரி பகுதிகள், காவேரி வடக்கு வனஉயிரின சரணாலயத்திற்கான சூழல் உயர்திரன் மண்டலத்திற்குள் (Eco-Sensitive Zone) வருவதில்லை.



**அட்டவணை 2**

**டெண்டர் / பொது ஏலம் மூலம் குத்தகை அனுமதி வழங்குவதை தற்காலிகமாக நிறுத்திவைக்க பரிந்துரை செய்யப்படும் குவாரிகளின் விவரப்பட்டியல்**

Sl. No.	Village	Classification of the proposed site (As per Revenue Record)	S.F.No.	Extent Proposed for Quarry Lease	GPS coordinates of the proposed sites		Distance from nearest Reserved Forest (km)	Distance from CNWLS (km)
					Latitude	Longitude		
<b>Krishnagiri Taluk</b>								
1	Kallukurukki	Govt. Poramboke – Ko Malai	701 (Part-II)	1.00.00	12.55536	78.22426	3.2 Kundarapalli II	27.7 Udedurgam
2	Kallukurukki	Govt. Poramboke – Ko Malai	701 (Part-III)	1.00.00	12.55541	78.22483	3.2 Kundarapalli II	27.8 Udedurgam
3	Kallukurukki	Govt. Poramboke – Ko Malai	701 (Part-IV)	0.90.00	12.55463	78.22316	3.2 Kundarapalli II	27.6 Udedurgam
4	Kallukurukki	Govt. Poramboke – Ko Malai	701 (Part-V)	3.50.00	12.55034	78.22850	3.9 Kundarapalli II	28.05 Udedurgam
5	Kallukurukki	Govt. Poramboke – Ko Malai	701 (Part-VI)	1.00.00	12.54704	78.22598	3.7 Pethathalapalli	27.8 Udedurgam
<b>Uthangarai Taluk</b>								
6	Katteri	Govt. Punjai - Podugal	17/1	1.25.00	12.19712	78.53751	1.6 Onnakarai	65.4 Marandahalli
7	Thathanur		10//2	1.61.00	12.21405	78.53499	0.5 Onnakarai	64.6 Marandahalli
<b>Shoologiri Taluk</b>								
8	Mattampalli	Un-assessed waste-Karadu	53/1 (Part-1)	3.00.00	12.69400	78.06509	0.53 Kumbalam I	21 Udedurgam
9	Mattampalli	Un-assessed waste-Karadu	53/1 (Part-2)	1.90.00	12.69279	78.06464	0.64 Kumbalam I	20.9 Udedurgam
10	Marandapalli	Un-assessed waste-Parai	71/2	1.15.0	12.67734	78.05708	1.4 Thekkalapalli	19.1 Udedurgam

மேற்கண்ட அட்டவணை 2ல் குறிப்பிட்டுள்ள இடங்கள் குறித்து வனம் மற்றும் வனஉயிரின பாதுகாப்பு தொடர்பான கூடுதல் கள ஆய்வு மேற்கொள்ள வேண்டி உள்ளதாலும், மேலும் கால அவகாசம் தேவைப்படுவதால் அப்பகுதியை ஒட்டி அமைந்துள்ள இடங்களில் காப்பு நிலம் தொடர்பான முன்மொழிவுகள், பரிசீலனையில் உள்ளதாலும் இதுகுறித்த மேல் நடவடிக்கையினை துரிதப்படுத்தி இயலாத சூழ்நிலையில் உள்ளது. எனவே, அட்டவணை 2ல் உள்ள இவ்விடங்களின் டெண்டர் மற்றும் பொது ஏலத்தில் விடுவதை தற்சமயம் நிறுத்தி வைக்க பரிந்துரைக்கப்படுவதுடன், இவ்விவரம் துறைத்தலைவரிடமிருந்து, வனத்துறையின் குவாரி பணிகள் மேற்கொள்ள தனியாக துறைத்தலைவரிடமிருந்து, வனத்துறையின் தடைகுறித்த குறிப்புரை வழங்கப்படும் என அன்புடன் தெரிவித்துக்கொள்கிறேன்.

தங்கள் அன்புள்ள,  
ஓம்/- க. கார்த்திகேயனி,  
வனஉயிரினகாப்பாளர்,  
ஓசூர் வனக்கோட்டம்.

//உ.ந.உ.ப//

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A

கண்காணிப்பாளர்


மாவட்டம் தஞ்சாவூர்

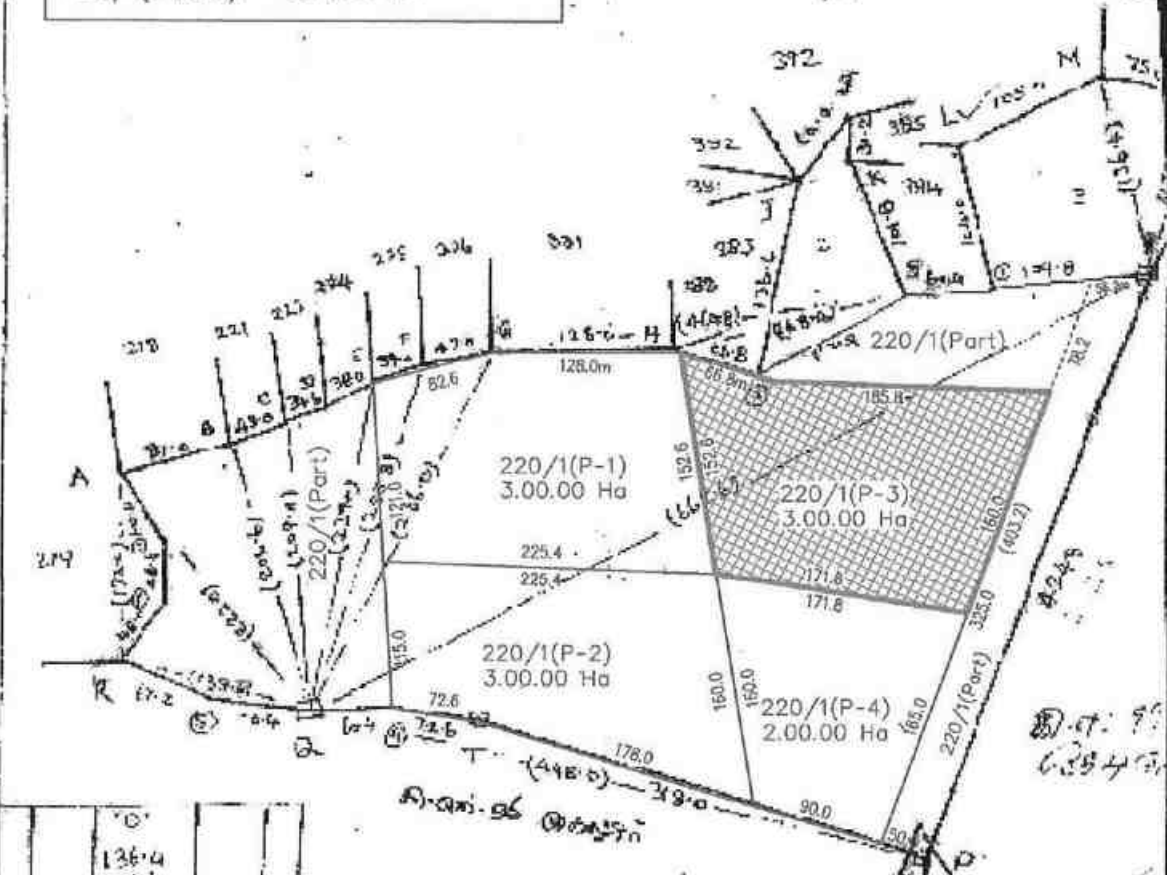
சுட்டி எண்

படி எண் 1220

97 ANNEXURE-IV



PROPOSAL AREA:   
220/1(Part-3) = 3.00.00 Ha



	136.4		
N 71.2	236		
	M		
	5		
	1184		
	56.6	35.0	2
	H		
	O		
	164.8		
M 173.8	432.4		
	355.8	1.6	1
L 102.2	225.2		
S 1.8	294.0		
J 131.0	265.2		
K 152.8	267.2		
I 15.0	225.6		
	28.0	14.2	4
	G		

	A		
	131.11		
	84.1	36.6	7
	31.0	37.8	6
	K		
	130.6		
	72.0		
	G		
	44.0		
	394.68	15.2	1
	379.00	22.7	1
	P		
	134.1		
	92.2		
	N		

சுட்டி எண்

ZONAL DEPUTY TAHSILDAR  
HOSUR.

S. MATHAN PRAKASH, M.Sc., M.Ph  
RQP/CNN/270/2016/A

சுட்டி எண்  
1220

சுட்டி எண் 1220





FORM C

[See rule 9(a)]

Acknowledgment of Registration of Firms

The Registrar of Firms, TamilNadu, hereby acknowledges the receipt of the statement prescribed by Section 58(1) of the Indian Partnership Act, 1932. The statement has been filed and the name of the firm **SRRE KRISH ROUGH STONE** has been entered in the Register of Firms as No FR/Krishnagiri/90/2022



Date : 31 Mar-2022

Station : Krishnagiri

Digitally Signed by Thiru: Imil Selvi

Registrar

Registrar of Firms

செங்கோடு கிராமியம் மற்றும் சுரங்கத்துறை

Handwritten signature and date: 31/3/22

*S. Mathan Prakash*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**





एक सौ रुपये

₹. 100

ONE HUNDRED RUPEES

INDIA 18 JUL 2022



தமிழ்நாடு தமிழ்நாடு TAMILNADU is 100/-

31/03/2022 Sree Krish Rough Stone  
Krishnagiri

K.P. MURUGAN  
SRI  
KRI

"PARTNERSHIP DEED OF "SRRE KRISH ROUGH STONE"

This deed of partnership is executed at Krishnagiri on this 31<sup>st</sup> day of March 2022 between.

- 1 **Sri. Govindasami Sevathan** S/o Sri Sevathan, aged about 67 years, residing at 212, Goundarkottai, Karukkansavadi, Kaveripattinam, Errahalli Post, Kaveripattinam, Krishnagiri District Pin 635112 herein after called the party of the first part
- 2 **Sri.P.Karthik**, S/o.Sri Palani, aged about 27 years, residing at 2-43, Kalar Vattam Chinnakammiyampattu, Tirupattur, Ponnani, Reddyur, Vellore District Pin 638851 herein after called the party of the second part



*[Handwritten signatures and text]*  
V PARTHIBAN



एक सौ रुपये

₹. 100

HUNDRED RUPEES

INDIA  
INDIA NON JUDICIAL



தமிழ்நாடு தமிழ்நாடு TAMILNADU B1007

31/03/2022 Srre Krish Rough Stone  
Kishmayini

CP 934093

K.P. MURATIKRISHNAN  
S.V.C. M.B.K.G.I.  
KRISHNAPURAM, Kanyakumari

Whereas the partners has mutually agreed to carry on the business in partnership under the name and style of "SRRE KRISH ROUGH STONE" with effect from 31<sup>st</sup> March 2022 onwards and the parties here to desire to have all the terms and conditions of the partnership reduced to in writing and to have the same duly evidenced by this deed of partnership

*S. S. S. S.*

*V. Parthiban*  
*V. Parthiban*  
V. PARTHIBAN, B.A., B.L.





சு. 100

INDIA HIGH JUDICIAL

தமிழ்நாடு TAMILNADU மீ.சி.டி  
03/2022 Srree Krish Rough Stone  
Kishugiri

EP 934502

K.P. MURUKRISHNAN  
S.V.O. 12/2018/KGI  
KRISHNAGIRI, TAMILNADU

NOW THIS DEED WITNESSETH AS FOLLOWS:

1. Name and Style

The name and style of the firm shall be "SRREE KRISH ROUGH STONE"

2. Constitution of the firm:

The partnership firm as constituted under the deed of partnership shall carry on its business in partnership, as per the terms and conditions set out as below in this deed

3. Place of Business

The firm shall continue to have its principal place of business at 212 Goundarkottai Karukkansavadi, Kaveripattinam, Errahalli Post, Kaveripattinam, Krishnagiri District Pin 635112, and the same may be shifted to any other place as the partners may decide from time to time. And also by mutual consent of the partners, the firm can open branches for its activities as decided by the partners from time to time.



*[Handwritten signatures]*

*[Handwritten signature]*



#### 4. Nature of Business

The firm shall carry on the business of Manufacturers, Traders, Processors, Dealers, Importers, Exporters, Merchants, Consultants, Commission Agents of Granite, Granite Products and such other activities as mutually agreed by the partners of the firm from time to time for the benefit of the firm

#### 5. Capital Contribution

The total capital of the firm is Rs.5,00,000/- (Rupees Five Lacs only) contributed by the partners as detailed below

<u>Sl no</u>	<u>Name</u>	<u>Capital in Rs.</u>
1.	Sri. Govindasami Sevathan	2,50,000/-
2.	Sri. P Karthik	2,50,000/-
		<u>5,00,000/-</u>

The same may be increased or decreased as decided by the partners from time to time after considering the business requirements. The share of profit if any shall be credited to the partner's capital account and loss if any shall be earned forward under the head profit and loss account. The partners are entitled for an interest on capital and current accounts on the fund outstanding at the end of the month @ 1% per month shall be charged each month or such other rate of interest as agreed by the partners from time to time for the benefit of the firm and the same shall be credited in the partners capital account.

#### 6. Loans and Borrowings

The firm can borrow the required amount over and above the capital contribution by the partners from financial Institutions, Banks, and partners from such other sources at the rate and condition as decided by the partners from time to time. The loan documents have to be signed by the party of the first part on behalf of the firm

#### 7. Management of the firm

The party of the First part Sri. Govindasami Sevathan shall be the managing partner of the firm and the Managing partner will manage the day to day affairs of the firm. Any one partner has to represent on behalf of the firm to Government departments, taxation matters etc on behalf of the firm. All the partners of the firm will manage the overall business activities



*V. Parthiban*  
*V. Parthiban*  
V. PARTHIBAN, B.A., B.L.,  
Advocate & Notary Public

*on S. Govindasami Sevathan*

02 *P. Karthik*



For the above services rendered to the firm, the partners are eligible for remuneration and the eligible salary and remuneration to the partners shall be calculated and shall not exceed the limit prescribed u/s 40 (b) of the Income-tax act 1961

The remuneration to the partners has to be shared by the partners in the following ratio after reducing the salary paid to the partners



<u>Sl.No</u>	<u>Name</u>	<u>% of share</u>
1	Sri Govindasami Sevathan	50%
2	Sri P Karthik	50%

#### 8 Accounts and Profit and Loss sharing ratio equally

Proper books of accounts shall be maintained in the usual course of business and the same shall be closed on 31<sup>st</sup> March in each year to ascertain the net profit or loss of the firm for that year. The interest and remuneration payable to the partners and the taxes due and payable on the taxable income of the firm for the year shall be treated as common item of expenditure. Balance Sheet shall be prepared as on 31<sup>st</sup> March every year and the net profit or loss of the firm so arrived at shall be divided between the partners and the share be credited or debited as the case may be in the respective current accounts of such partners in the following sharing ratio

<u>Sl.No</u>	<u>Name</u>	<u>% of share</u>
1.	Sri Govindasami Sevathan	50%
2.	Sri P Karthik	50%

#### 9. Duration of the Firm.

The duration of the firm will be at will. On death, retirement, expulsion or admission of the partners shall not have the effect of dissolution of the firm

#### 10. ADMISSION, RETIREMENT, EXPULSION OF PARTNERS AND DISSOLUTION OF THE FIRM

a) **Admission:** New partner shall be admitted to the firm with the written consent of all the partners. However in the case of a nominee of a deceased partner the other partner shall be bound to admit such nominee as a partner of the firm, in the manner mentioned therein

b) **Retirement:** Any partner desiring to retire from the firm shall do so by giving a notice in writing to the other partners

c) **Dissolution:** Death, Retirement or expulsion of a partner shall not have the effect of dissolving the firm. In particular, no partner has the right to demand dissolution of the



*V. Parthiban*  
V. PARTHIBAN, B.A., B.L.,

01 S. Govindasami Sevathan  
02 P. Karthik



## 11 SETTLEMENT OF ACCOUNTS

In the event of admission and retirement of partners and the dissolution of the firm for the purpose of settlement of rights and accounts between the partners, all the fixed assets of the business shall be re-valued taking into account the life of such assets, the prevailing market prices for the same and all other relevant factors. Provision for bad and doubtful debts shall also be made. Any surplus or deficit arising out of the aforesaid exercises shall be divided in proportion to the profit sharing ratio and credited or debited as the case may be, to the respective current accounts of partner.

## 12 Bank Operation

The bank accounts shall be opened in the firm name and operated in any Scheduled banks and such bank account shall be operated by any one of the partner signing the banking documents and instruments on behalf of the firm individually for the benefit of the firm.

## 13 ARBITRATION

All matters in difference in relation to the partnership affairs shall be referred to arbitration to be appointed by each partner and their umpires or to single arbitrator according to the provisions of the Arbitration Act in force in India.

## 14. APPLICATION OF INDIAN PARTNERSHIP ACT, 1932

Except Provision mentioned above in this deed to the contrary, all the other provisions of the Indian Partnership Act 1932 shall be applicable to the firm.

In witness, the parties hereto affix their signatures to this deed on the day, month and year, herein above first mentioned.

### WITNESS :-

1. *[Signature]* (K. V. VENKATASWAMY) 1

15/20 K. Krishnagiri, K. Krishnagiri  
KRISHNAGIRI

2. *[Signature]* (K. LIANQUELAN) 2

2/33, BANDAPALLE (V. SAMANTHAN) KRISHNAGIRI - 635115.

V. PARTHIBAN, B.A., B.L.,  
Advocate & Notary Public,  
KRISHNAGIRI-635 001.  
Mobile: 94430 58694.



*[Signature]*  
S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2015/A

ANNEXURE - VIII



**இந்திய அரசாங்கம்**  
**Government of India**

சென்னை செவ்வாய்  
**Govindasami Sevathan**  
 யார்: செவ்வாய்  
 Name: SEVATHAN

பிறப்பு: 15/08/1968  
 Address: Male

8972 3755 4719



ஆதார - சாதாரண மனிதனின் அதிகாரம்



Unique Identification Authority of India

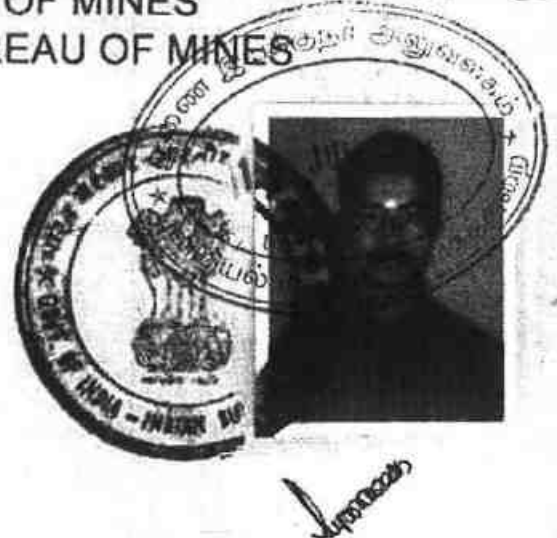
புதிய அடையாளம் பெறும்  
 காலம் 30 நாட்கள் உள்ளகத்தில்  
 கட்டுக்கடமை செய்யும்  
 கட்டுக்கடமை செய்யும்  
 கட்டுக்கடமை செய்யும்

212 GOUNDARKOTTAI,  
 KARLIKANSAVADI,  
 KAVERIPATTINAM  
 Erroli, Kaveripattinam,  
 Krishnagiri, Tamil Nadu,  
 635112

8972 3755 4719



*S. Mathan Prakash*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**



अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र  
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)  
**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**  
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री एस. माथन प्रकाश . 2/274, ईस्ट स्ट्रीट, कुलरोकरनल्लूर पोस्ट, ओटपिडारम तालुक, तूतुकुडी डस्टीक्ट - 628 401, तमिलनाडू, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है ।

Shri S. Mathan Prakash, 2/274, East Street, Kulasekaranallur Post, Ottapidaram Taluk, Thoothukudi District - 628 401, Tamilnadu, whose **Photograph and signature** is affixed herein above, having given satisfactory evidence of his qualifications & experience hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उनकी पंजीयन संख्या है  
His registration number is

RQP /CNN/270/2016/A

यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 09.02.2026 को समाप्त होगी।  
This recognition is valid for a period of 10 years ending on 09.02.2026.

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज पाए जाने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।

This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai  
दिनांक/ Date : 10.02.2016

  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A


  
क्षेत्रीय खान नियंत्रक / Regional Controller of Mines  
भारतीय खान ब्यूरो / Indian Bureau of Mines



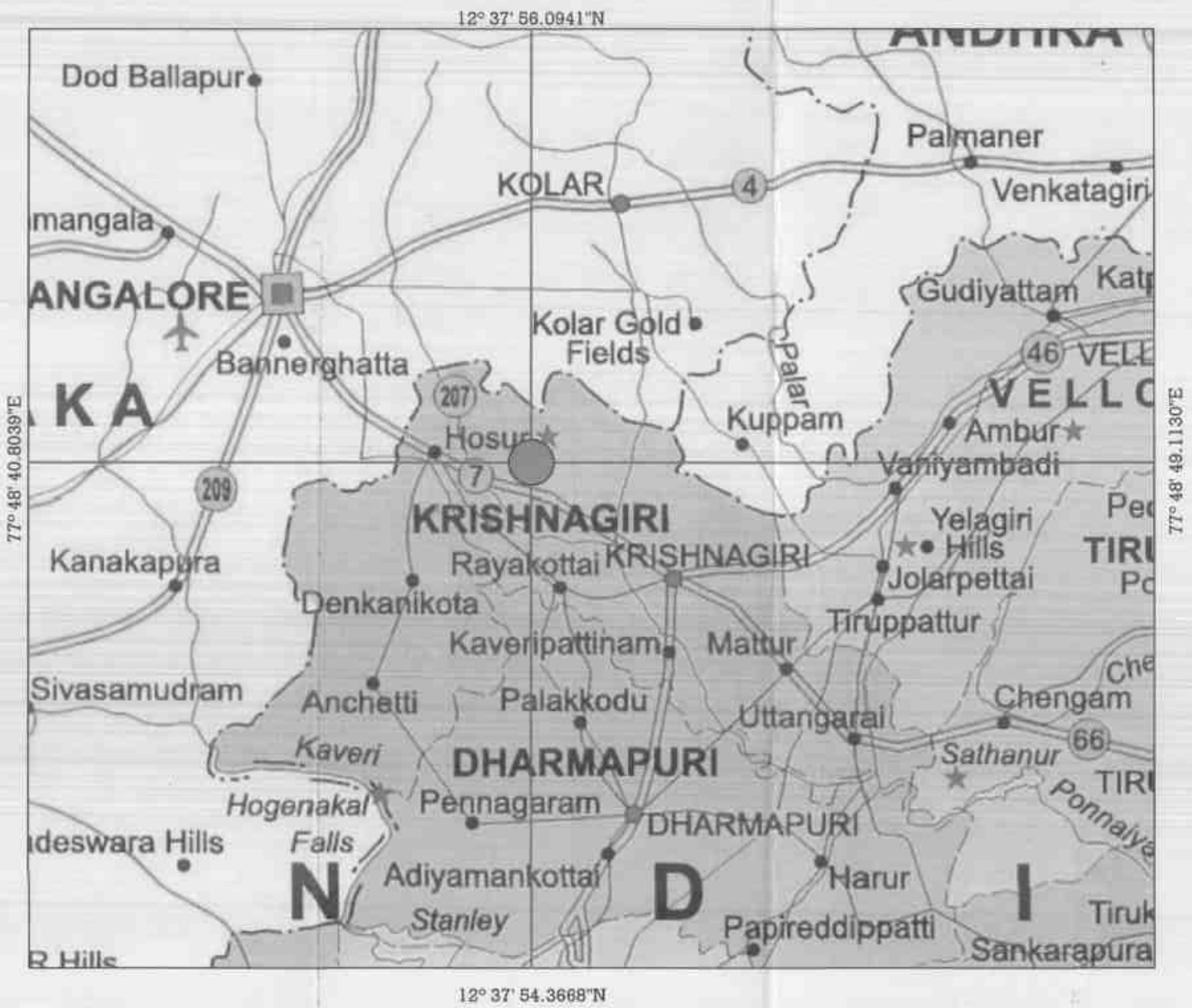
PHOTO SHOWN PROPOSED APPLIED LEASE AREA



PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-2



  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**



**PLATE NO:1**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE AREA : ●

TOPO SHEET NO. : 57-H/14,

LATITUDE : 12° 37' 56.0941"N to 12° 37' 54.3668"N  
 LONGITUDE : 77° 48' 49.1130"E to 77° 48' 40.8039"E

**LOCATION PLAN**

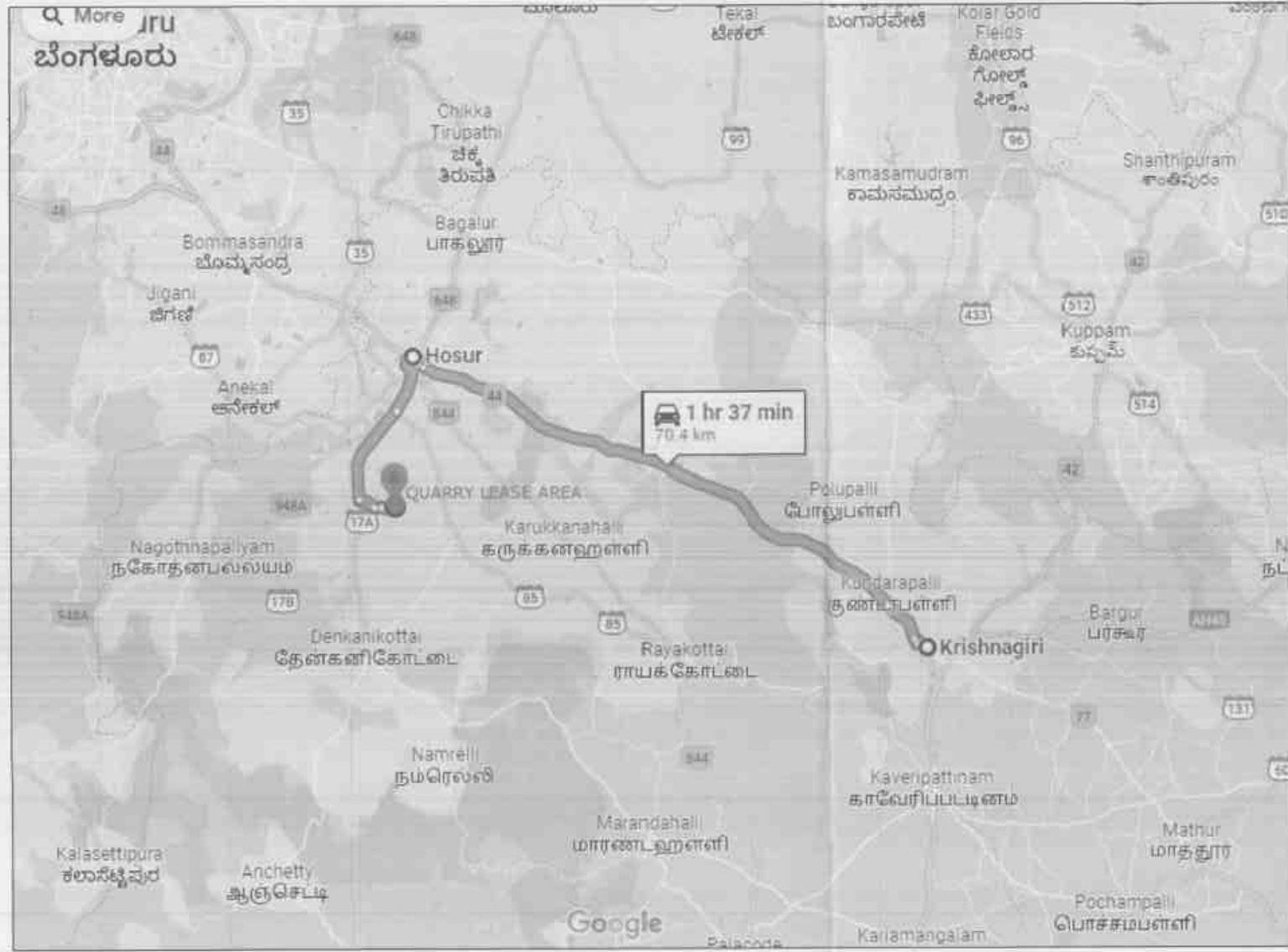
NOT TO SCALE

**PREPARED BY:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

*S. Nathan Prakash*

S.NATHAN PRAKASH, M.Sc., M.PHIL.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNR/270/2016/A




**PLATE NO:IA**  
 DATE OF SURVEY: 25-04-2022  
**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635-112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**  
 QUARRY LEASE AREA   
 ROAD 

**ROUTE MAP**  
 NOT TO SCALE

Prepared By:  
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 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE  
  
 S.NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNN/270/2016

77° 48' 40.8039"E



12° 37' 56.0941"N

12° 37' 54.3668"N

77° 48' 49.1130"E



**PLATE NO:IB**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**

M/s: SRRE KRISH BUGH STONE  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVAI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112



**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE AREA :

5KM RADIUS :

TOPO SHEET NO. : 57-H/14,

LATITUDE : 12° 37' 56.0941" N to 12° 37' 54.3668" N

LONGITUDE : 77° 48' 49.1130" E to 77° 48' 40.8039" E

TOPO SHEET MAP OF THE LEASE AREA	
Symbol	Description
	Quarry Lease Area
	5KM Radius
	3.00.00 Ha Quarry Lease Area
	Boundary of the Lease Area
	Boundary of the 5KM Radius
	Boundary of the Topographic Sheet
	Boundary of the Village
	Boundary of the Taluk
	Boundary of the District
	Boundary of the State
	Boundary of the Country
	Boundary of the World

**TOPO SHEET MAP OF THE LEASE AREA**

SCALE-1:50,000

**PREPARED BY:**

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 TO THE BEST OF MY KNOWLEDGE

*S. Nathan Prakash*

S.NATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/PCNN/270/2016/212 A



12° 37' 59.2819"N  
77° 48' 41.4624"E



12° 37' 54.3668"N  
77° 48' 40.8039"E

12° 37' 56.0941"N  
77° 48' 49.1130"E

12° 37' 51.9387"N  
77° 48' 45.9251"E



PLATE NO:IC

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE BOUNDARY

500M RADIUS


300M RADIUS

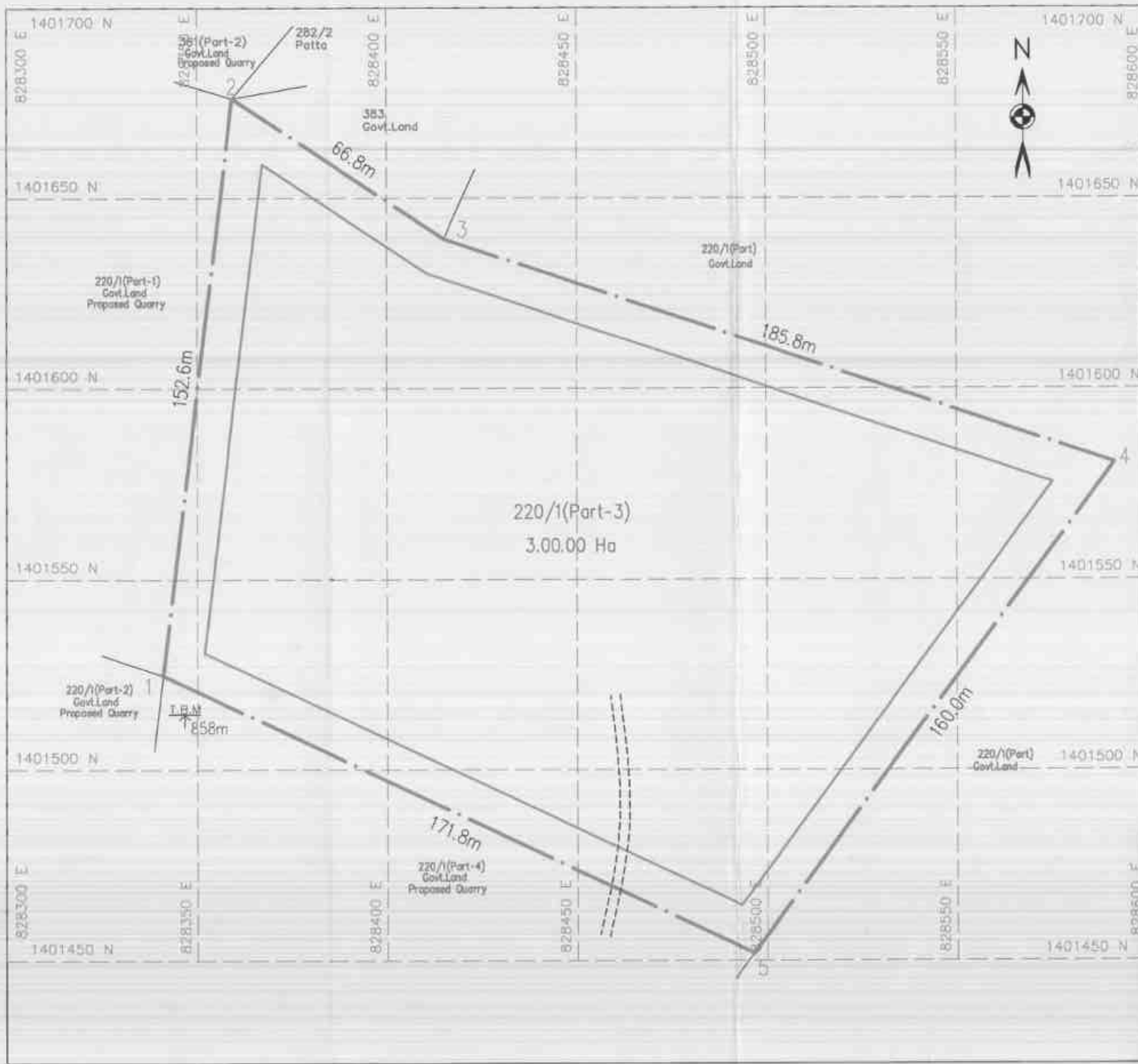
SATELLITE IMAGE  
(500m RADIUS)

SCALE 1:5000

Prepared By:

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HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

  
S.NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CIN/270/2016/213 A



220/1 (Part-3)  
BOUNDARY SURVEY DATA

LABEL	LATITUDE	LONGITUDE
1	12° 37' 54.3668" N	77° 48' 40.8039" E
2	12° 37' 59.2839" N	77° 48' 41.4624" E
3	12° 37' 58.0648" N	77° 48' 43.2944" E
4	12° 37' 56.0941" N	77° 48' 49.1130" E
5	12° 37' 51.9387" N	77° 48' 45.9251" E

**PLATE NO:II**  
DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	

**MINE LEASE PLAN**  
**SCALE 1:1000**

Prepared By:  
I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE.

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CNM/270/201 214 A



PLATE NO:III

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
ROCK OUTCROPS	
CONTOUR LINE	
STRIKE & DIP	
QUARRY ROAD	
SHRUB	

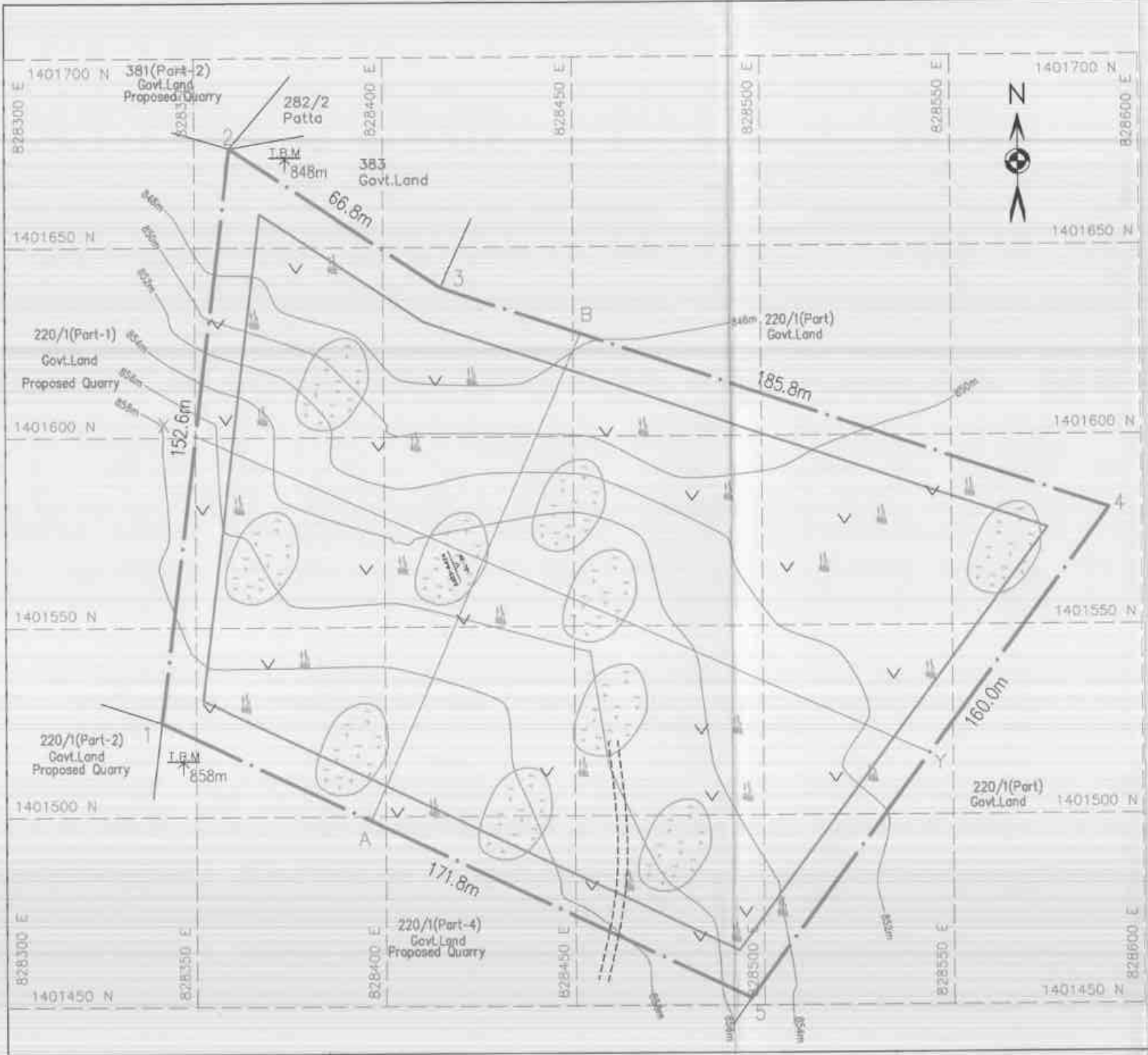
SURFACE AND GEOLOGICAL PLAN

SCALE 1:1000

Prepared By:

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HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE.

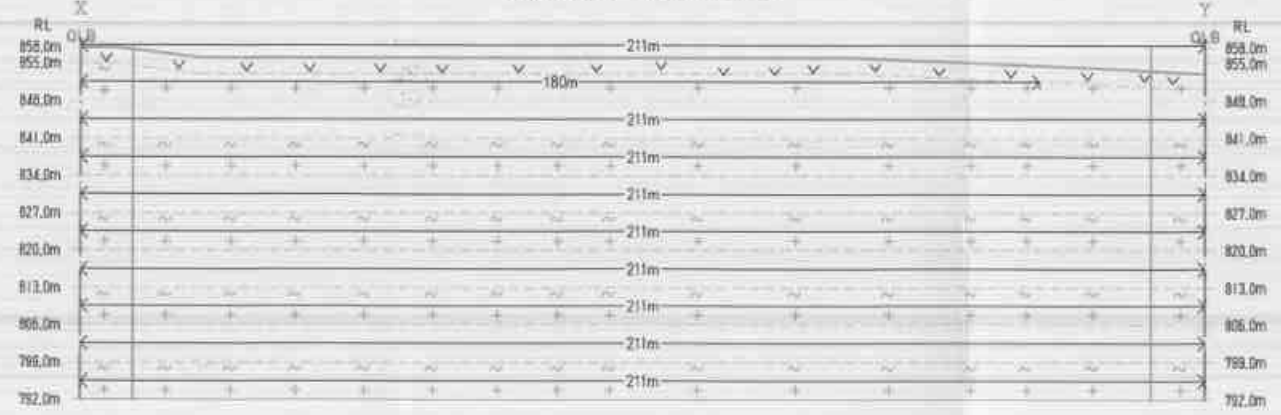
S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CIN/270/201215 A





Surface Ground Level Above Height - 10m  
Surface Ground Level Below Depth - 56m

**SECTION ALONG X-Y**



**SECTION ALONG A-B**

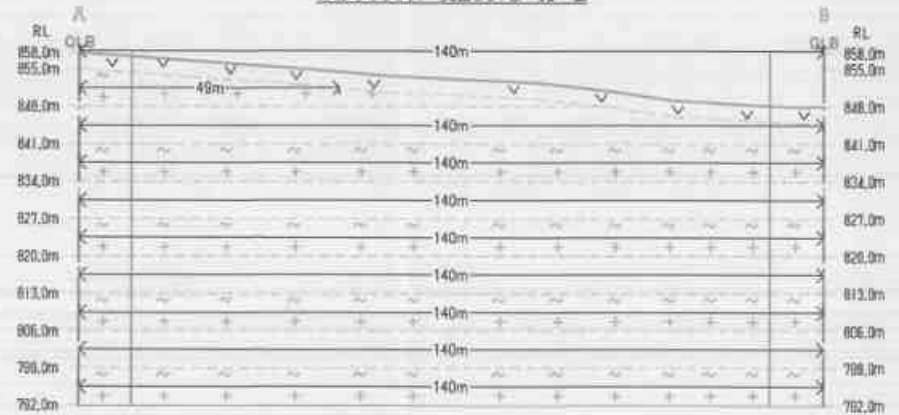


PLATE NO:III-A

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s, SRRE KRISHN ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE

**GEOLOGICAL SECTIONS**

SCALE 1:1000

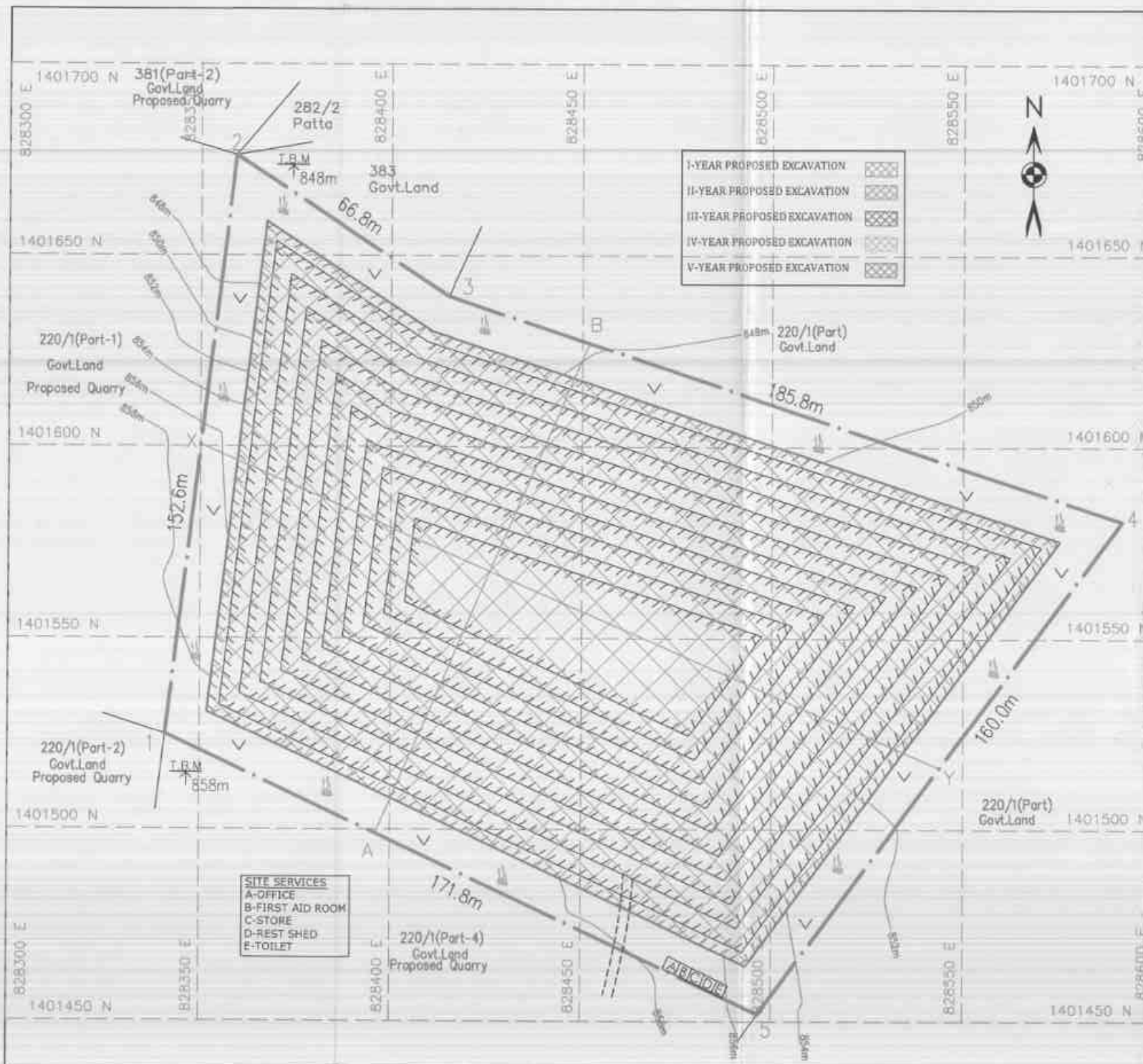
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Mathan*  
**S.MATHAN PRKASH, M.Sc., M.Phil.,**  
RECOGNIZED QUALIFIED PERSON  
RQP/CNE/270/201

GEOLOGICAL RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m.(100%)	Topsoli (Gravel) in Cu.m.
XY-AB	I	211	140	3			85620
	II	180	49	7	61740	61740	
	III	211	140	7	206780	206780	
	IV	211	140	7	206780	206780	
	V	211	140	7	206780	206780	
	VI	211	140	7	206780	206780	
	VII	211	140	7	206780	206780	
	VIII	211	140	7	206780	206780	
	IX	211	140	7	206780	206780	
	X	211	140	7	206780	206780	
<b>Total=</b>					<b>1715980</b>	<b>1715980</b>	<b>85620</b>





I-YEAR PROPOSED EXCAVATION	
II-YEAR PROPOSED EXCAVATION	
III-YEAR PROPOSED EXCAVATION	
IV-YEAR PROPOSED EXCAVATION	
V-YEAR PROPOSED EXCAVATION	



**PLATE NO:IV-A**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	

**YEARWISE DEVELOPMENT AND PRODUCTION PLAN**  
 (First Five (I-V) Years)

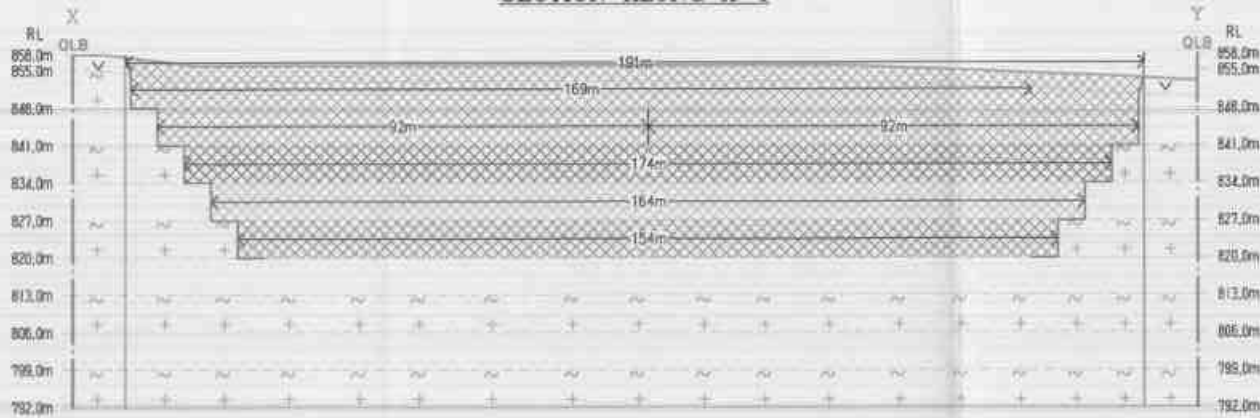
**SCALE 1:1000**

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S.MATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON -  
 RQP/CNR/270/201 217 A

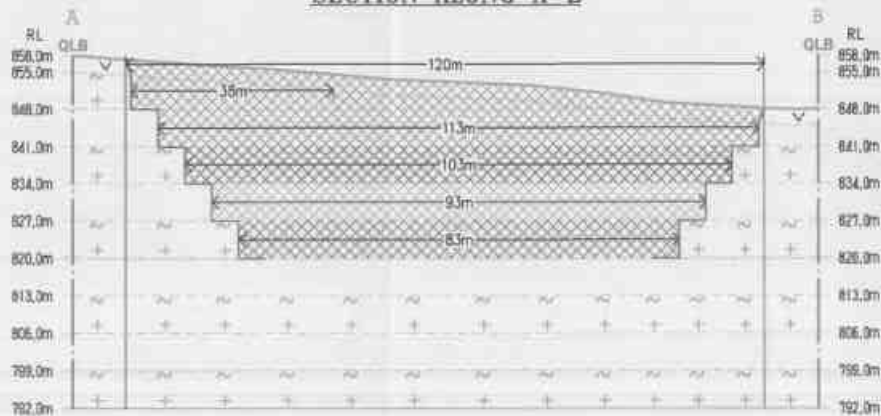


**SECTION ALONG X-Y**



SURFACE GROUND LEVEL ABOVE HEIGHT - 10m  
SURFACE GROUND LEVEL BELOW DEPTH - 28m

**SECTION ALONG A-B**



- I-YEAR PROPOSED EXCAVATION
- II-YEAR PROPOSED EXCAVATION
- III-YEAR PROPOSED EXCAVATION
- IV-YEAR PROPOSED EXCAVATION
- V-YEAR PROPOSED EXCAVATION

PLATE NO:IV-A1

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAL,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE

**YEARWISE DEVELOPMENT AND PRODUCTION (First Five (I-V)Years)**

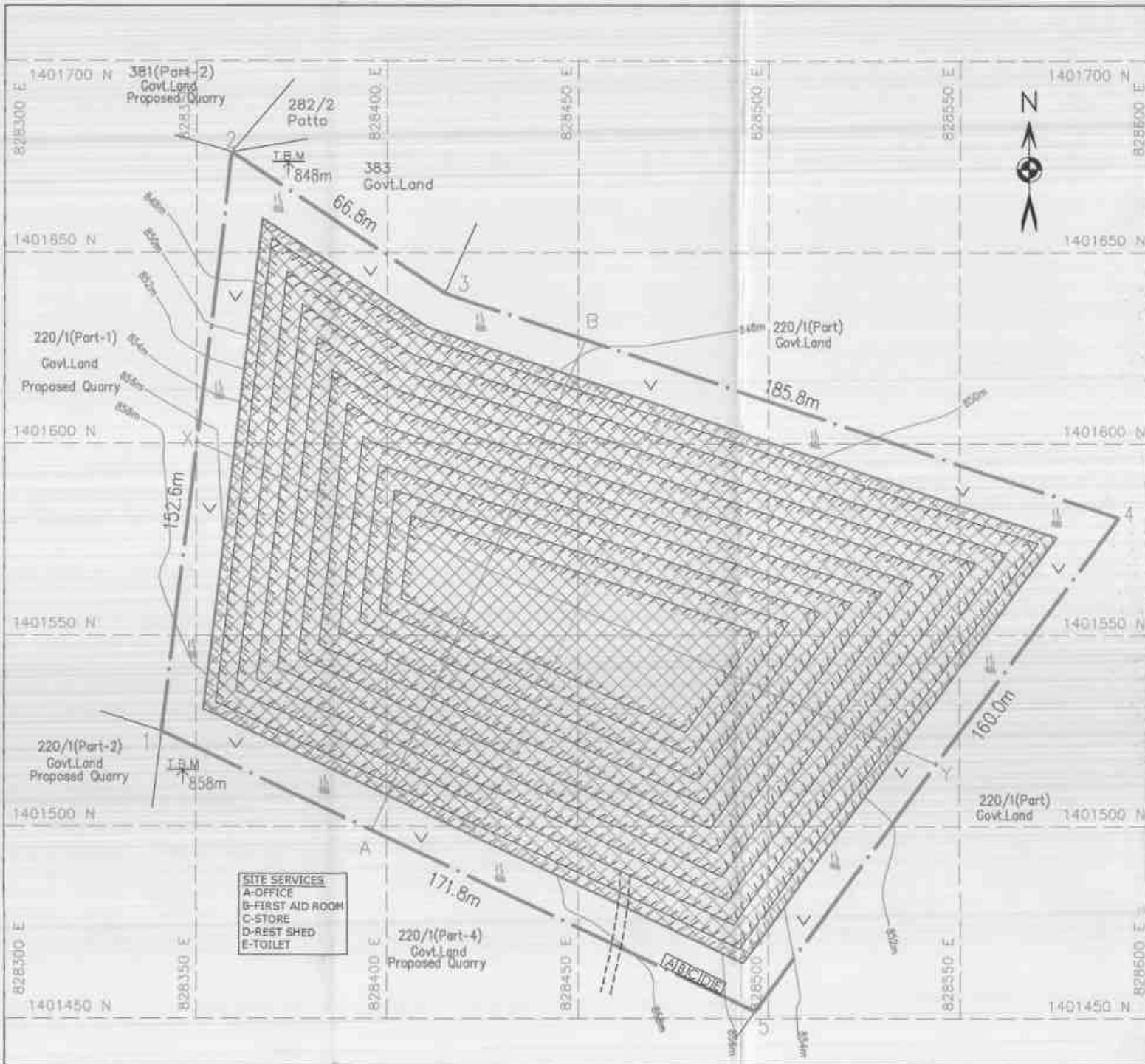
SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.MATHAN PRAKASH, M.Sc., M.PHIL,  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/201 218 A

YEARWISE DEVELOPMENT AND PRODUCTION (First Five (I-V)Years)								
YEAR	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)	Topsoil (Gravel) in Cu.m.
I-YEAR	XY-AB	I	191	120	3			68760
		II	169	38	7	44954	44954	
		III	92	113	7	72772	72772	
II-YEAR		III	92	113	7	72772	72772	
III-YEAR		IV	174	103	7	125454	125454	
IV-YEAR		V	164	93	7	106764	106764	
V-YEAR	VI	154	83	7	89474	89474		
<b>Total=</b>						<b>512190</b>	<b>512190</b>	<b>68760</b>



**PLATE NO:IV-B**  
 DATE OF SURVEY: 25-04-2022  
**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAL,  
 KARUKKANSAVAADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	

**YEARWISE DEVELOPMENT AND PRODUCTION PLAN**  
 (Second Five (VI-X) Years)  
**SCALE 1:1000**

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE  
  
**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNR/270/2016/219 A

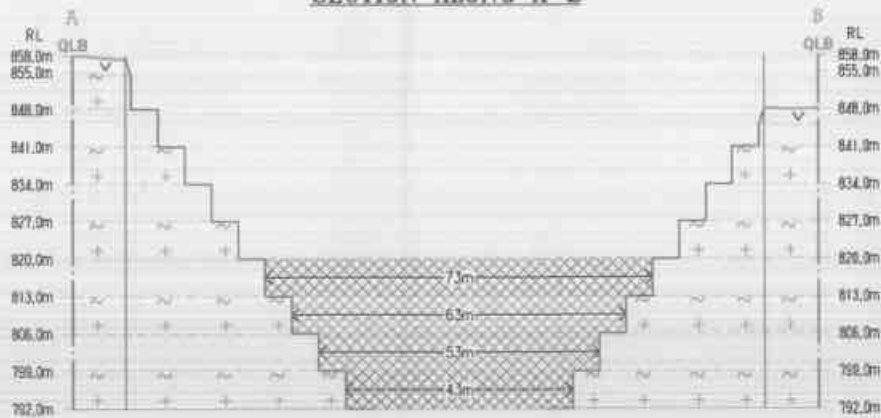


SURFACE GROUND LEVEL BELOW DEPTH - 28M

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



VI-YEAR PROPOSED EXCAVATION	
VII-YEAR PROPOSED EXCAVATION	
VIII-YEAR PROPOSED EXCAVATION	
IX-YEAR PROPOSED EXCAVATION	
X-YEAR PROPOSED EXCAVATION	

PLATE NO:IV-B1

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TOP SOIL (GRAVEL)	
ROUGH STONE	

**YEARWISE DEVELOPMENT AND PRODUCTION SECTIONS**

(Second Five (VI-X)Years)

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Nathan Prakash*

S.NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
KQP/CNN/270/2011

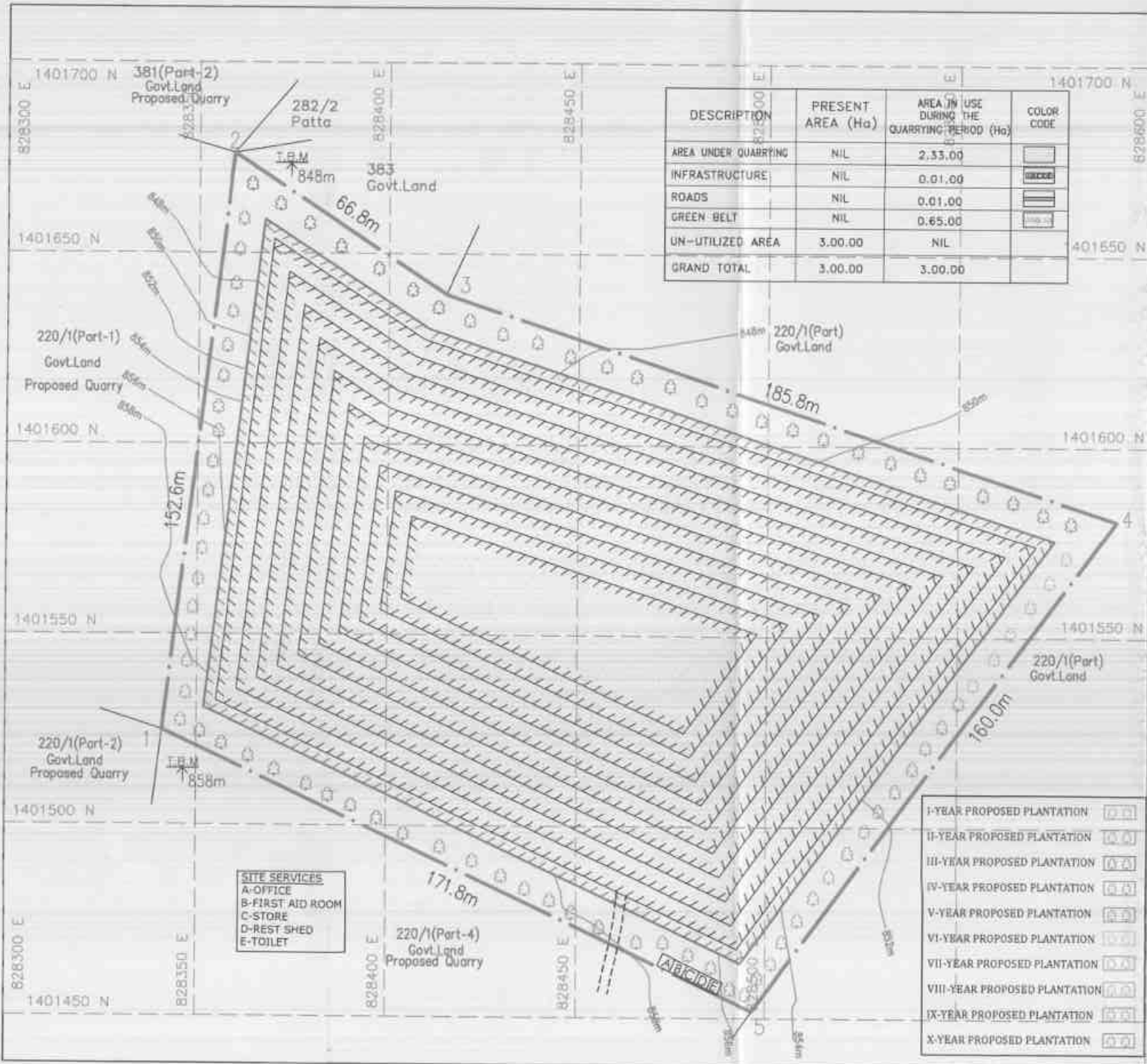
**YEARWISE DEVELOPMENT AND PRODUCTION (Second Five (VI-X)Years)**

YEAR	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)
VI-YEAR	XY-AB	VII	72	73	7	36792	36792
VII-YEAR		VII	72	73	7	36792	36792
VIII-YEAR		VIII	134	63	7	59094	59094
IX-YEAR		IX	124	53	7	46004	46004
X-YEAR		X	114	43	7	34314	34314
<b>Total=</b>						<b>212996</b>	<b>212996</b>





DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	NIL	2.33.00	
INFRASTRUCTURE	NIL	0.01.00	
ROADS	NIL	0.01.00	
GREEN BELT	NIL	0.65.00	
UN-UTILIZED AREA	3.00.00	NIL	
GRAND TOTAL	3.00.00	3.00.00	



**PLATE NO:V**

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	
MINE LAYOUT	

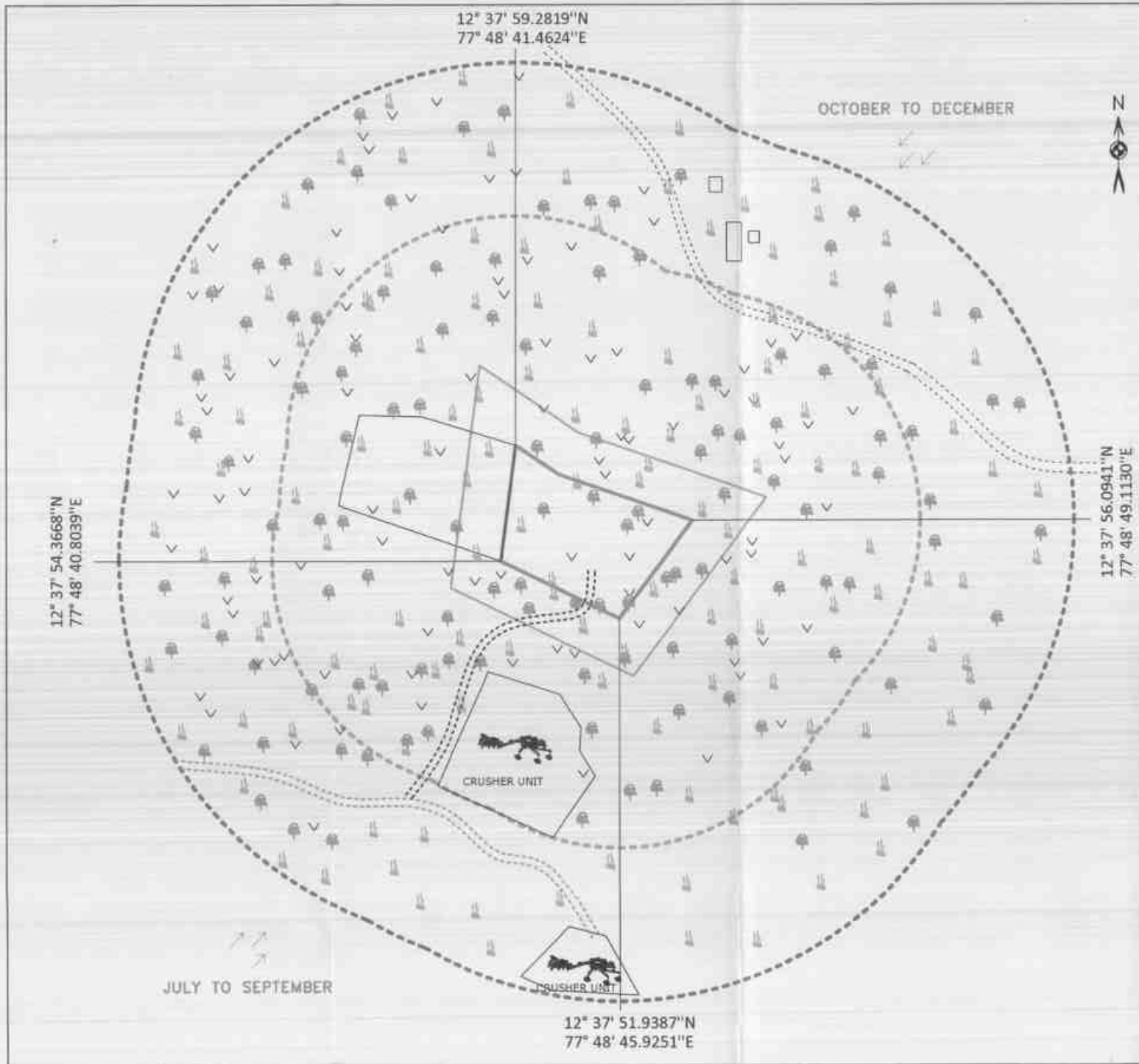
**MINE LAYOUT LAND USE PATTERN & AFFORESTATION PLAN**

**SCALE 1:1000**

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
 RECOGNIZED QUALIFIED PERSON  
 RQP/JMN/270/2014-221 A



**PLATE NO:VI**

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:  
M/s. SRREKSH BONGMISTONE  
D.No.212, GOUNDRKOTTAI,  
KARUKKANGAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635.112.

LOCATION OF QUARRY:  
EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
500M RADIUS	
300M RADIUS	
60M RADIUS	
APPROACH ROAD	
QUARRY ROAD	
TREES	
SHRUB	
WIND DIRECTION	
ADJACENT QUARRY	
CRUSHER UNIT	
INFRASTRUCTURES	
DRY AGRICULTURAL LAND	

**ENVIRONMENT PLAN**

SCALE 1:5000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/2016/

222 A

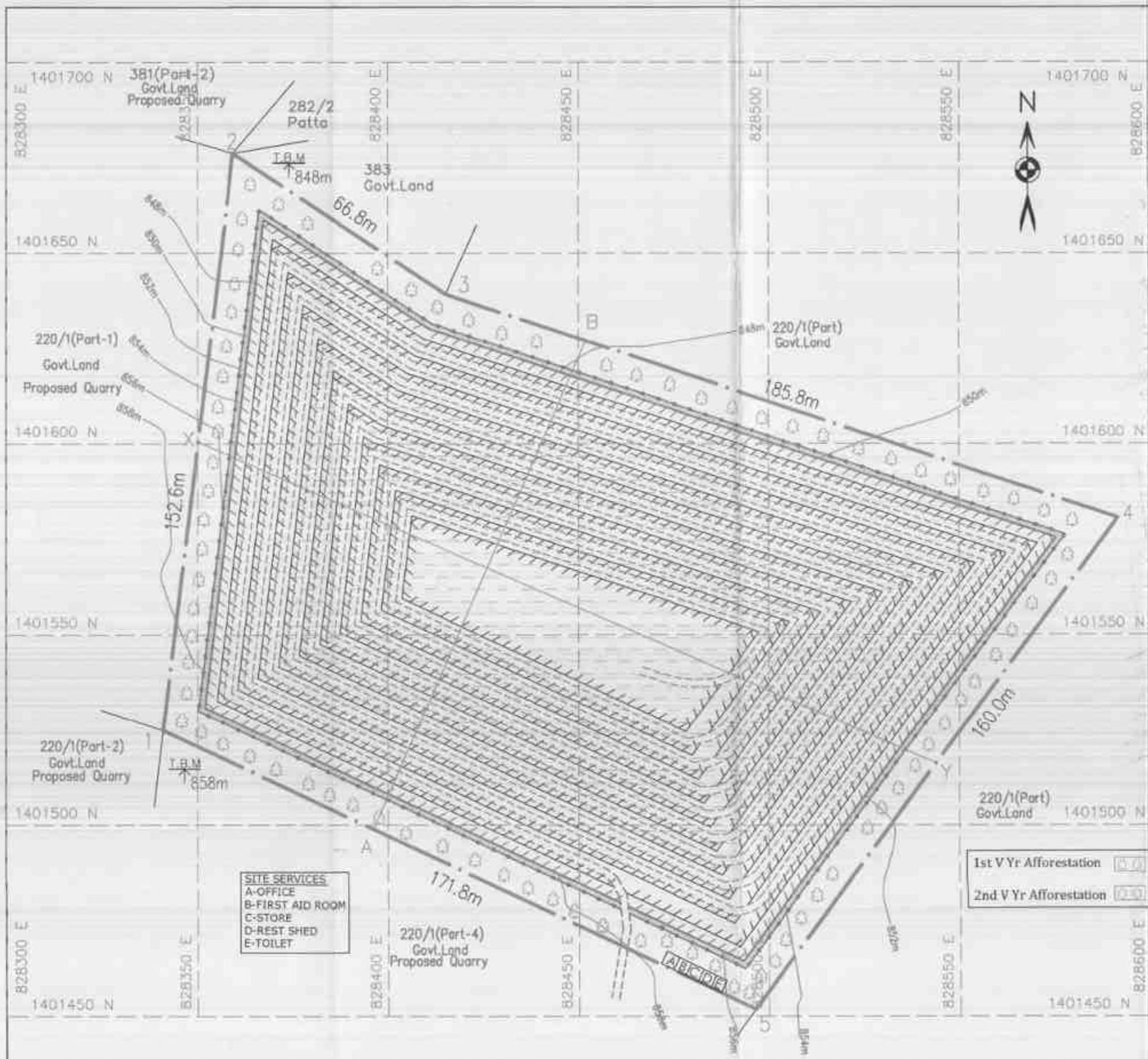


PLATE NO: VII

DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TOP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
TRUCK ROAD (QUARRY ROAD)	
FENCING	
PARAPET WALL	
ULTIMATE PIT LIMIT	
PROPOSED WATER STORAGE	

**CONCEPTUAL & FINAL MINE CLOSURE PLAN**

SCALE 1:1000

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Nathan Prakash*  
S.NATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CHN/270/201223 A

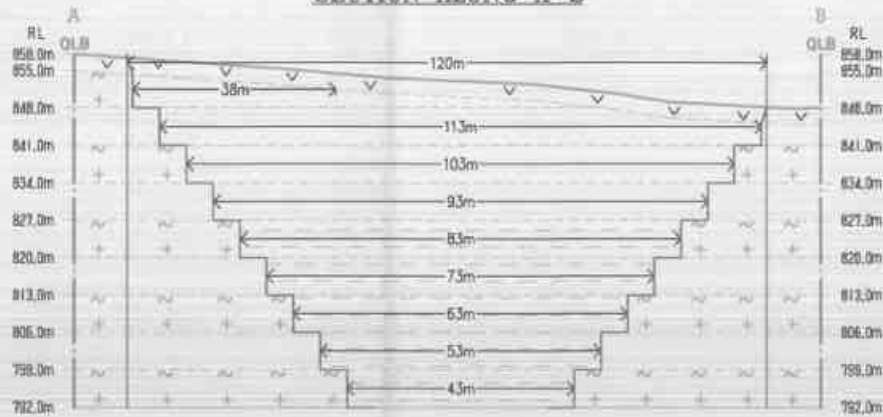
SECTION ALONG X-Y



Surface Ground Level Above Height : 40m  
Surface Ground Level Below Depth : 56m



SECTION ALONG A-B



ULTIMATE PIT DIMENSION  
= 191.0m(L) X 120.0m(W) X 56.0m(D)

PLATE NO:VII-A

DATE OF SURVEY: 25-04-2022

APPLICANT ADDRESS:

M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

LOCATION OF QUARRY:

EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

- QUARRY LEASE BOUNDARY
- 10.0m SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STONE
- ULTIMATE PIT SLOPE
- PROPOSED WATER STORAGE

CONCEPTUAL & FINAL  
MINE CLOSURE SECTIONS

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

*S. Mathan Prakash*

S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CNU/270/2016/15

MINEABLE RESERVES							
Section	Bench	Length In (m)	Width In (m)	Depth In (m)	Volume In (Cu.m.)	Recoverable Reserve In Cu.m(100%)	Topsoil (Gravel) In Cu.m.
XY-AB	I	191	120	3			68760
	II	169	38	7	44954	44954	
	III	184	113	7	145544	145544	
	IV	174	103	7	125454	125454	
	V	164	93	7	106764	106764	
	VI	154	83	7	89474	89474	
	VII	144	73	7	73584	73584	
	VIII	134	63	7	59094	59094	
	IX	124	53	7	46004	46004	
	X	114	43	7	34314	34314	
Total=					725186	725186	68760



**Conceptual Plan and Sections Showing Regulation to Quarry Common Boundary as Stipulated in Rule (III)3 of Metalliferous Mines Regulations 1961, after getting Permission from DGMS, if needed.**

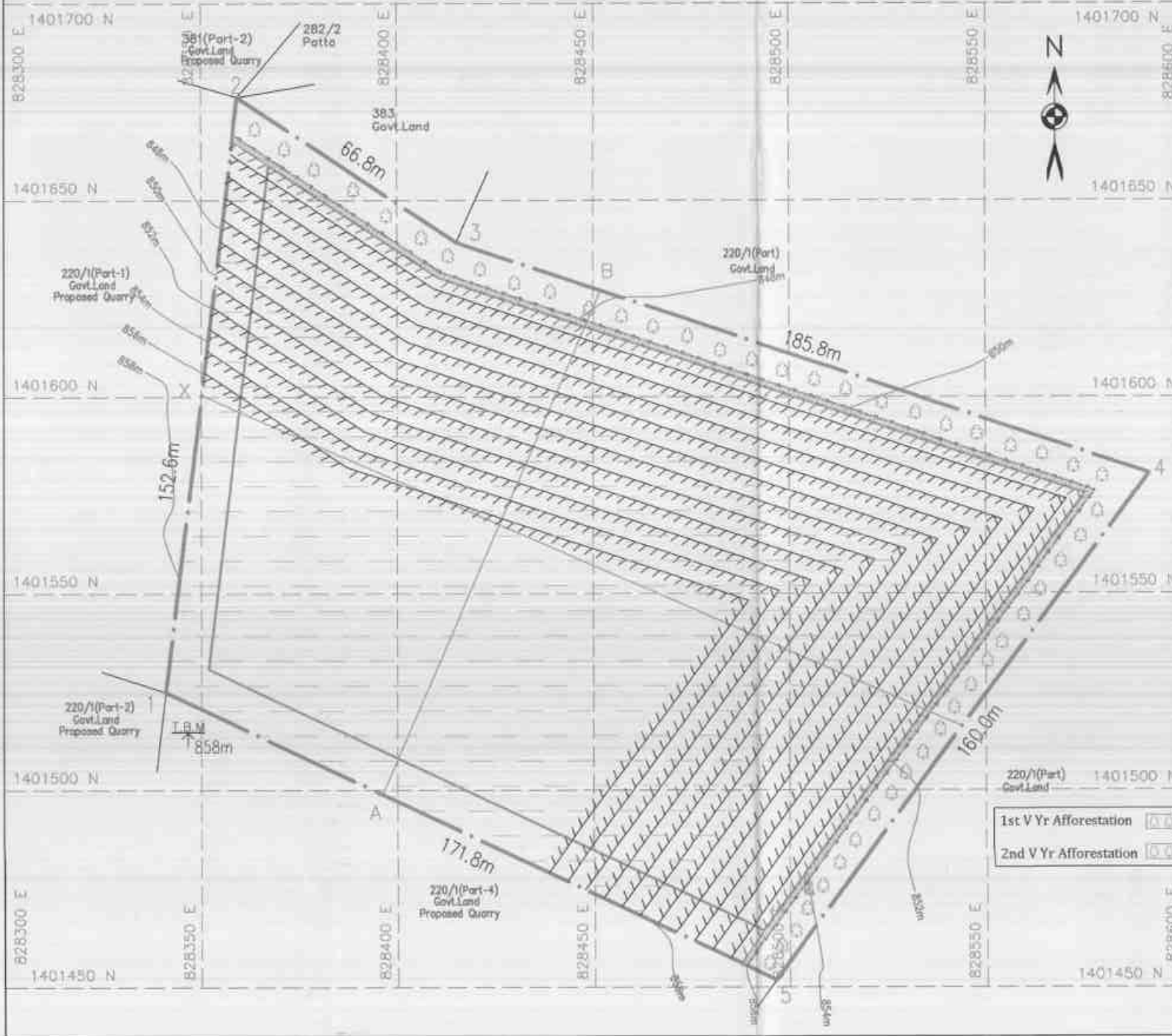


PLATE NO: VIII  
 DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE BOUNDARY	
10.0m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
TDP SOIL (GRAVEL)	
ROUGH STONE	
CONTOUR LINE	
QUARRY ROAD	
FENCING	
PARAPET WALL	
ULTIMATE PIT LIMIT	
PROPOSED WATER STORAGE	

**CONCEPTUAL PLAN  
 COMMON BOUNDARY**

**SCALE 1:1000**

**Prepared By:**  
 I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE.

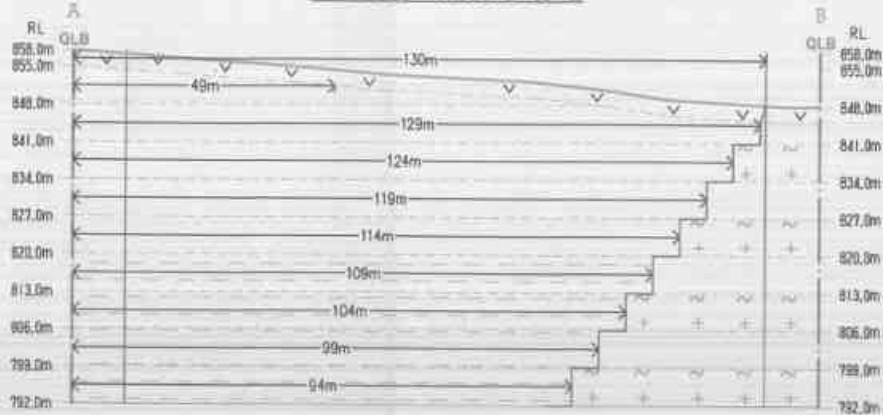
**S. NATHAN PRAKASH, M.Sc., M.Phil.,**  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNN/270/201

Conceptual Plan and Sections Showing Regulation to Quarry Common Boundary as Stipulated in Rule (III)3 of Metalliferous Mines Regulations 1961, after getting Permission from DGMS, if needed.

**SECTION ALONG X-Y**



**SECTION ALONG A-B**



ULTIMATE PIT DIMENSION  
= 201.0m(L) X 130.0m(W) X 56.0m(D)

MINABLE RESERVES - COMMON BOUNDARY							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m(100%)	Topsoll (Gravel) in Cu.m.
XY-AB	I	201	130	3			78390
	II	180	49	7	61740	61740	
	III	200	129	7	180600	180600	
	IV	195	124	7	169260	169260	
	V	190	119	7	158270	158270	
	VI	185	114	7	147630	147630	
	VII	180	109	7	137340	137340	
	VIII	175	104	7	127400	127400	
	IX	170	99	7	117810	117810	
	X	165	94	7	108570	108570	
Total-					1208620	1208620	78390

Surface Ground Level Above Height - 10m  
Surface Ground Level Below Depth - 56m

10 JUL 2022

**PLATE NO:VIII-A**  
DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
M/s. SRRE KRISH ROUGH STONE,  
D.No.212, GOUNDARKOTTAI,  
KARUKKANSAVADI,  
ERRAHALLI POST,  
KAVERIPATTINAM,  
KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
EXTENT : 3.00.00 Ha,  
S.F.NO : 220/1 (Part-3)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

- INDEX**
- QUARRY LEASE BOUNDARY
  - 7.5m & 10.0m SAFETY DISTANCE
  - TOP SOIL (GRAVEL)
  - ROUGH STONE
  - ULTIMATE PIT SLOPE
  - PROPOSED WATER STORAGE

**CONCEPTUAL SECTIONS  
COMMON BOUNDARY**

SCALE 1:1000

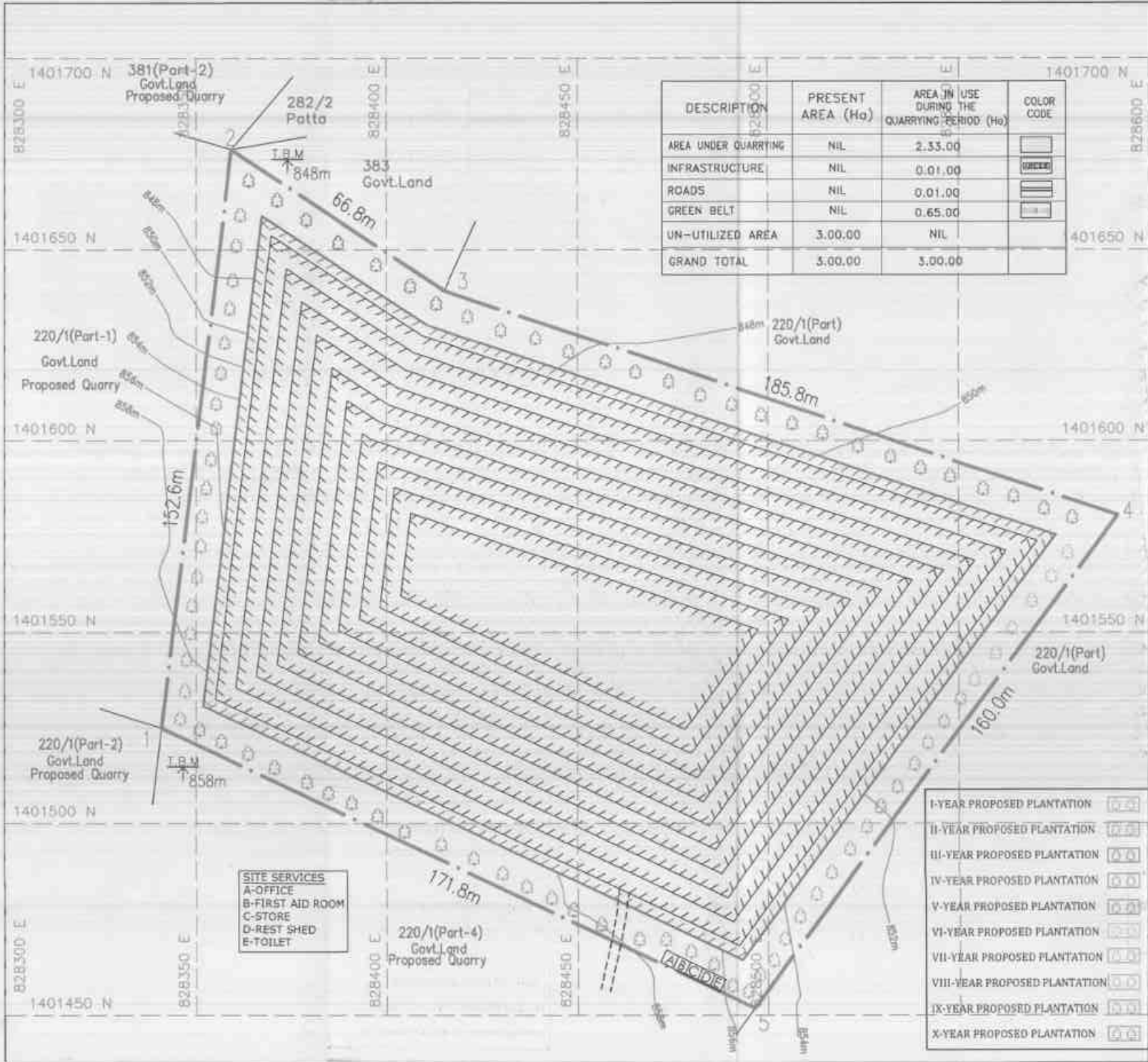
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.MATHAN PRAKASH, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/2014



DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	NIL	2.33.00	[Symbol]
INFRASTRUCTURE	NIL	0.01.00	[Symbol]
ROADS	NIL	0.01.00	[Symbol]
GREEN BELT	NIL	0.65.00	[Symbol]
UN-UTILIZED AREA	3.00.00	NIL	[Symbol]
GRAND TOTAL	5.00.00	3.00.00	



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

- I-YEAR PROPOSED PLANTATION [Symbol]
- II-YEAR PROPOSED PLANTATION [Symbol]
- III-YEAR PROPOSED PLANTATION [Symbol]
- IV-YEAR PROPOSED PLANTATION [Symbol]
- V-YEAR PROPOSED PLANTATION [Symbol]
- VI-YEAR PROPOSED PLANTATION [Symbol]
- VII-YEAR PROPOSED PLANTATION [Symbol]
- VIII-YEAR PROPOSED PLANTATION [Symbol]
- IX-YEAR PROPOSED PLANTATION [Symbol]
- X-YEAR PROPOSED PLANTATION [Symbol]

**PLATE NO:IX**  
 DATE OF SURVEY: 25-04-2022

**APPLICANT ADDRESS:**  
 M/s. SRRE KRISH ROUGH STONE,  
 D.No.212, GOUNDARKOTTAI,  
 KARUKKANSAVADI,  
 ERRAHALLI POST,  
 KAVERIPATTINAM,  
 KRISHNAGIRI DISTRICT - 635 112.

**LOCATION OF QUARRY:**  
 EXTENT : 3.00.00 Ha,  
 S.F.NO : 220/1 (Part-3)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY [Symbol]
- 10.0m SAFETY DISTANCE [Symbol]
- TEMPORARY BENCH MARK [Symbol]
- TOP SOIL (GRAVEL) [Symbol]
- ROUGH STONE [Symbol]
- CONTOUR LINE [Symbol]
- QUARRY ROAD [Symbol]
- MINE LAYOUT [Symbol]

**PROGRESSIVE MINE CLOSURE PLAN**  
 SCALE 1:1000

**Prepared By:**  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Mathan Prakash*  
 S.MATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQ/CNV/270/201227 A

കിരീടം, മൂന്നാം ഘട്ടം, മൂന്നാം ഘട്ടം, മൂന്നാം ഘട്ടം  
 2000, 85-ഭാഗം, 85-ഭാഗം, 85-ഭാഗം, 85-ഭാഗം  
 (Part-3) 3.00.0 മൂന്നാം ഘട്ടം, 2000  
 M/s മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 500 മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 മൂന്നാം ഘട്ടം, 2000, 2000, 2000  
 മൂന്നാം ഘട്ടം, 2000, 2000, 2000

B.A. Thiruv  
 Village Administrative Officer  
 No. 85, Gopanapalli, Village,  
 Hosur Taluk, Krishnagiri Dist.



**TOPOGRAPHICAL VIEW OF GOPANAPALLI ROUGHSTONE  
QUARRY LEASEAPPLIED AREA**



Name of the Applicant : M/s. SreeKrish Rough Stone,  
Address : D.No.212, Goundarkottai,  
Karukkansavadi, Errahalli Post,  
Kaveripattinam, Krishnagiri District,  
Tamil Nadu State – 635 112.

**LOCATION DETAILS**

Extent : 3.00.0ha  
S.F.No. : 220/1 (Part-3)  
Village : Gopanapalli  
Taluk : Hosur  
District : Krishnagiri  
State : Tamil Nadu

Signature of the applicant

For M/s. SreeKrish Rough Stone

**For Sree Krish Rough Stone**  
S. Govindasami  
*S. Govindasami*  
(Managing Partner)  
**Partner.**

(Village Administrative Officer)

Attestation

*B.S. Prasad*  
Village Administrative Officer  
No. 85, Gopanapalli, Vill.  
Hosur Taluk, Krishnagiri District

# **ROUGH STONE QUARRY**

**S.F.No: 457 (PART-2), HOSAPPURAM VILLAGE,  
DENKANIKOTTAI TALUK, KRISHNAGIRI DISTRICT,  
TAMILNADU**

**QUARRY LEASE AREA – 3.70.0HA  
ROUGH STONE PRODUCTION – 75786M<sup>3</sup> /YEAR**

**FORM -1, PREFEASIBILITY REPORT,  
MINING PLAN**

**APPLICANT**

**THIRU.P. VENKATA REDDY,  
S/o. PEDHA OBUL REDDY,  
3/213, PERIYA KODIPALLI VILLAGE,  
KEMPATTI, MUTTUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.**

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**Form-1, Prefeasibility Report, Mining Plan for Rough Stone for  
S.F.No: 457 (Part-2), HOSAPPURAM Village , DENKANIKOTTAI Taluk , KRISHNAGIRI  
District Tamil Nadu of  
THIRU.P.VENKATA REDDY.  
(Extent – 3.70.0Ha)**

**FORM -1**

**FORM – I**

**THIRU.P.VENKATA REDDY.**

**(I) Basic Information**

<b>S.No</b>	<b>Ite</b>	<b>Detail</b>
1	Name of the project/s	<b>HOSAPPURAM</b> Village Rough stone Quarry project.
2	S.No. in the schedule	1 (a)
3	Proposed capacity/area/length /tonnage to be handled /command area/lease area /number of wells to be drilled.	Rough stone for 5 <b>Years = 378932m<sup>3</sup></b> Top soil = <b>85023m<sup>3</sup></b> in <b>3.70.0Hectares.</b>
4	New/Expansion/Modernization	Existing Quarry
5	Existing Capacity/Area etc.	Top Soil = PART-II – 1491.0 Sq.m X Depth 3.0m = 4473 Cbm Rough Stone = PART-II – 1491.0 Sq.m X Depth 7.0m =10437 Cbm
6	Category of Project i.e. ‘A’ or ‘B’	Category – B (B2)
7	Does it attract the general condition? If Yes, please specify.	No. It doesn’t attract any items mentioned in the general conditions
8	Does it attract the specific condition? If Yes, please specify.	No. It doesn’t attract the specific Conditions
9	Location:	
	Plot/Survey/Khasra No.	457 (Part-2)(Government Poramboke land)
	Village	HOSAPPURAM
	Taluk	DENKANIKOTTAI
	District	KRISHNAGIRI
10	State	TAMILNADU
	Nearest railway station/airport along with distance in kms	DENKANIKOTTAI Railway station 17Km BANGALORE – 50kms
	Nearest Town, city, district Headquarters along with distance in kms.	Town - HOSUR– 12Km city - HOSUR– 12Km District - K R I S H N A G I R I – 60 Km
	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village - HOSAPPURAM Panchayat - HOSAPPURAM Taluk - DENKANIKOTTAI District - KRISHNAGIRI
	Name of the applicant	THIRU.P.VENKATA REDDY
13	Registered Address	S/o. PEDHA OBUL REDDY, 3/213, PERIYA KODIPALLI VILLAGE, KEMPATTI, MUTTUR POST, DENKANIKOTTAI TALUK, KRISHNAGIRI DISTRICT.
14	Address for correspondence:	Same as above
	Name	THIRU.P.VENKATA REDDY
	Designation (Owner/Partner /CEO)	Owner

	Address	Same as above
15	Pin code	
	E-mail	geodhana@yahoo.co.in
	Mobile No.	81051-14820.
	Fax No.	Nil
16	Details of Alternative Sites examined, if Any. Location of these sites should be shown on a topo sheet.	There is no alternative site examined as The project is site specific.
17	Interlinked Projects	There is no inter linked projects
18	Whether separate application of Interlinked project has been submitted?	There is no inter linked projects
19	If yes, date of submission	Does not arise
20	If no, reason	Since the project involves rough stone Operation only, there is no interlinked projects.
21	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. i. The Forest (Conservation) Act, 1980? ii. The Wildlife (Protection) Act, 1972? iii. The C.R.Z. Notification, 1991?	(i)The project doesn't attract the Forest (Conservation) Act 1980. There is no Forest land involved within the quarry lease applied area (ii) There is no wild life with in 10 km radius from the project site area under the Wildlife (protection) Act1972. (iii) The quarry is located 190 km away from Bay of Bengal. Hence, the project doesn't attract the C.R.Z. Notification, 1991.
22	Whether there is any Government Order/Policy relevant/ relating to the site.	The Proponent has obtained Precise area Letter from the District Collector, KRISHNAGIRI vide letter. Rc. No. <b>112/2016/Mines dated: 29.02.2016</b> and the Mining Plan was approved by The Assistant Director of Mines and Geology, KRISHNAGIRI vide Roc. <b>112/2016/Mines-1 dated 06.04.2016.</b>
23	Forest Land involved ( hectares)	No Forest land is involved in the core zone.
24	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? a) Name of the Court b) Case No. c) Orders/directions of the Court, if any and its relevance with the proposed project.	No litigation is pending with court as against this project.

## (II) Activity

**Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	Nil
1.2	Clearance of existing land, Vegetation and buildings?	No	Not required, since the project is dry, vacant, uncultivable area, strewn with boulders of various sizes, few shrubs and weeds, No cutting of trees or demolition of buildings involved.
1.3	Creation of new land uses?	No	The total quarrying activity is proposed to be carried out within the quarry lease applied area and hence there is no proposal for the creation of new land use
1.4	Pre-construction investigations E.g. bore holes, soil testing?	No	Not Applicable
1.5	Construction works?	Yes	Office building will be constructed in The quarry leases hold area.
1.6	Demolition works?	No	No demolition work is involved.
1.7	Temporary sites used for construction works or housing of construction workers?	No	No temporary site for construction works is involved.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or	No	There will not any high rise buildings
1.9	Underground works including mining or tunnelling?	No	No underground working is involved.
1.10	Reclamation works?	No	There is no proposal for backfilling. The Quarrying operation will be performed to exploit 90% of the total reserves.
1.11	Dredging?	No	There is no scope for dredging
1.12	Offshore structures?	No	There is no such activities involved
1.13	Production and Manufacturing Process	Yes	<b>Rough stone Production for Five Years = 378932M<sup>3</sup></b> and there is no manufacturing process here.

1.14	Facilities for storage of goods or Materials?	Yes	The top soil of the lease area and the wastes are generated during the mining period is <b>127127m<sup>3</sup></b> shall be proposed to Dumping the All Side of the 10.0m Boundary Barrier of the lease area to facilitate the afforestation and Green belt Development.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	The top soil of the lease area and the wastes are generated during the mining period is <b>127127m<sup>3</sup></b> shall be proposed to Dumping the All Side of the 10.0m Boundary Barrier of the lease area to facilitate the
1.16	Facilities for long term housing of operational workers?	No	The proposed project is for a period of Five Years where local people will be employed and there is no scope for long term housing for workers.
1.17	New road, rail or sea traffic During construction or operation?	No	The existing road is adequate. It will be properly laid or strengthened.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Not required.
1.19	Closure or diversion of existing Transport routes or infrastructure leading to changes in traffic movements?	No	This project will not cause any changes to the existing traffic movement
1.20	New or diverted transmission lines or pipelines?	No	The project doesn't involve diversion of transmission or pipe lines
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	The project does not involve impoundment, damming, culverting, realignment or other changes.
1.22	Stream crossings?	No	There is no stream crossing within the proposed area
1.23	Abstraction or transfers of water Form ground or surface waters?	No	About 2.5 KLD water will be used for dust suppression, green belt and domestic sanitary needs.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	No changes in the water bodies or the land surface under this project.
1.25	Transport of personnel or Materials for construction, operation or de commissioning?	No	There is no proposal for transport of personnel or material for construction, operation or de-commissioning



1.26	Long-term dismantling or Decommissioning or restoration works?	No	No dismantling, De-commissioning or restoration works required or planned
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No such type of activities involved in the Project
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Considering the small magnitude of the operation of the employment of locals mainly, no major influx of the people will happen.
1.29	Introduction of alien species?	No	No introduction of any species is Involved
1.30	Loss of native species or genetic diversity?	No	As the area is devoid of any vegetation and habitation, there is no loss of any native species.
1.31	Any other actions?	No	None

**2. Use of Natural resources for Construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):**

S.No.	Information/checklist confirmation	Yes/ No	Details there of (with approximate quantities /rates, wherever possible) with source of information data								
2.1	Land especially undeveloped or agricultural land (ha)	Yes	The mining area of <b>3.70.0 Hectares</b> is a Undeveloped <b>Government Poramboke land</b> . The land dry, uneven and unfit for any other use. It becomes fit for rainwater storage use after removal of Rough Stone.								
2.2	Water (expected source & competing users) unit: KLD	Yes	About 2.5 KLD water will be used for dust suppression, green belt and domestic sanitary needs. <table border="1"> <tr> <td>Drinking &amp; Domestic Purposes (in KLD)</td> <td>0.750 KLD</td> </tr> <tr> <td>Dust Suppression (in KLD)</td> <td>1.500 KLD</td> </tr> <tr> <td>Green belt (in KLD)</td> <td>0.250 KLD</td> </tr> <tr> <td>Total</td> <td>2.500 KLD</td> </tr> </table>	Drinking & Domestic Purposes (in KLD)	0.750 KLD	Dust Suppression (in KLD)	1.500 KLD	Green belt (in KLD)	0.250 KLD	Total	2.500 KLD
Drinking & Domestic Purposes (in KLD)	0.750 KLD										
Dust Suppression (in KLD)	1.500 KLD										
Green belt (in KLD)	0.250 KLD										
Total	2.500 KLD										
2.3	Minerals (MT)	Yes	Top Soil = <b>85023m3</b> Rough stone = <b>378932m3</b> for <b>Five Years</b> Rough stone /year = <b>75786m3</b>								
2.4	Construction material –stone, aggregates, Sand /soil (expected source – MT)	No	The proposed working is open cast Mechanised mining method for quarrying Rough stone. After removal of overburden drilling and blasting will be required for obtaining blasted boulders.								

2.5	Forest and Timber (Source-MT)	No	Not Applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Diesel will be utilized for operating compressors and other machineries. Electricity will be used only for administrative and other buildings.
2.7	Any other natural resources (use appropriate standard units)	No	None.

**3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	No hazardous materials used in this Project.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not envisaged
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Welfare of the nearby people will get improved due to the employment generation activities of this project.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	There is no effect for the mentioned Vulnerable groups.
3.5	Any other causes	No	No other cause envisaged

**4. Production of solid wastes during operation or decommissioning (MT/month)**

No	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	Yes	The top soil of the lease area and the wastes are generated during the mining period is <b>127127m<sup>3</sup></b> shall be proposed to Dumping the All Side of the 10.0m Boundary Barrier of the lease area to facilitate the afforestation and Green belt Development.
4.2	Municipal waste (domestic and or commercial wastes)	No	No Municipal waste will be generated during this project
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	The proposed quarrying of boulders will Not produce any hazardous waste.

4.4	Other industrial process wastes	No	No industrial process is undertaken and There by no such waste is generated.
4.5	Surplus product	No	No Surplus product developed.
4.6	Sewage sludge or other sludge from effluent treatment	No	No sewage sludge or other sludge is generated this project activity.
4.7	Construction or demolition wastes	No	Does not involve any construction or demolition activities.
4.8	Redundant machinery or equipment	No	No machinery is left redundant
4.9	Contaminated soils or other materials	No	There is no contaminated soil or other material noticed in the area
4.10	Agricultural wastes	No	No agricultural waste envisaged
4.11	Other solid wastes	No	The project does not generate any other solid waste than the items mentioned against 4.1 above.

#### 5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Only minor quantities of gaseous pollutants due to operation of diesel operated machineries like hydraulic excavators, compressors, transport vehicles, etc. But these will be controlled through proper effective remedial measures and proper environment management plan.
5.2	Emissions from production processes	Yes	Due to simple process of small drilling and soft blasting no major emission of gases from the process involved.
5.3	Emissions from materials handling including storage or transport	Yes	Fugitive emissions will be abated to insignificant minimal levels due to water sprinkling on roads, black topping of roads, good maintenance practices, green belt development, etc.
5.4	Emissions from Construction activities including plant and equipment	No	No construction activities are Planned.

5.5	Dust or odours from handling of materials including mining materials, sewage and waste	Yes	No sewage will be generated from this project. There is no Sewage System available in the Mining proposed area. There will be dust emission with in permissible limit during handling of over burden, drilling and transport by excavator and tippers which will be controlled by sprinkling water and wet drilling. The project will not have any odours, since it is removal of Blasted boulders only.
5.6	Emissions from incineration of waste	No	The project does not involve waste incineration.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	No incineration of solid waste or materials
5.8	Emissions from any other sources	No	There are no emissions from other Sources.

#### 6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with Approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	During drilling the noise will be Under permissible limit. During blasting delay electric detonators will be used for control of noise and vibration. The sound produced during vehicle movement will be under permissible limit.
6.2	From industrial or similar processes	No	There is no processing plant involved
6.3	From construction or demolition	No	No construction or demolition work envisaged
6.4	From blasting or piling	No	During drilling the noise will be Under permissible limit. During blasting delay electric detonators will be used for control of noise and vibration.
6.5	From construction or operational traffic	Yes	Noise generation will be from Excavator and tippers. It should be maintained less than 85dB as prescribed by DGMS
6.6	From lighting or cooling systems	No	No lighting or cooling system required
6.7	From any other sources No	No	Nil

**7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:**

<b>S.No</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with Approximate quantities/rates, wherever possible) with source of information data</b>
7.1	From handling, storage, use or spillage of hazardous materials	No	No hazardous materials area used or spilled in the quarry lease area. However, for sake of precaution the provisions of hazardous waste (Management and Handling) rules 1989 and subsequent amendments of same will be strictly observed, in case of need. Hence no risk is involved in this regard.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	No sewage or disposal of effluents or waste
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	All the emissions from the quarry operations will be controlled and will be in compliance with CPCB/SPCB norms.
7.4	From any other sources	No	The project does not utilize any other sources which can cause risk of contamination.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	There is no scope for long term built up of pollutants in this project

**8. Risk of accidents during construction or operation of the Project, which could affect**

<b>Human health or the environments</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with Approximate quantities/rates, wherever possible) with source of information data</b>
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	During blasting explosions will be produced and in the blasted area Nitrous Oxide gas will be generated. For safety working all persons will be kept more than 300mts away of the vicinity of the blasting labours will be permitted to work in the quarry face. All regulations under MMR 1961 will be followed.
8.2	From any other causes	Yes	Mines safety precautions will be followed while Quarrying. The labours will be provided with safety equipments. No unauthorised persons will be allowed inside the quarry while working in the quarry face.

8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The quarrying area is in the safe zone as far as the earthquake is concerned. There are no major water bodies in the area to cause flooding of the mine.
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**9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality**

S.No	Information/Cheeklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. Utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: <ul style="list-style-type: none"> <li>• Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)</li> <li>• housing development</li> <li>• extractive industries</li> <li>• supply industries</li> <li>• other</li> </ul>	Yes	The supporting infrastructure like roads of the area will be improved leading to improved transportation facilities. The socio-economic condition will be improved by way of generation of direct/indirect employment opportunities, improved water facilities, etc.
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	After excavation the excavated Area will be used as water reservoir and this will enable to increase the ground water potentiality in the nearby areas.
9.3	Set a precedent for later developments	Yes	This project will be set precedence in the area for environmental preservation and socio-economic improvement.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	No such effects will occur

### (III) Environmental Sensitivity

S.No	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary			
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	No.			
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains,	No	There are no sensitive water bodies, biospheres, national parks, sanctuaries, reserve forest in 15 kms radius from proposed project site. No Coastal zone is located in the nearby area. Bay of Bengal lies more than 124 kms.			
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Nil.			
4	Inland, coastal, marine or underground waters	No	Nil.			
5	State, National boundaries	No	Nil			
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	There are no routes or facilities used by the public for access to recreation or other tourist in the proposed project site			
7	Defence installations	No	There are no Defence installations nearby			
8	Densely populated or built-up area	Yes	<b>Direction</b>	<b>Village</b>	<b>Distance in Kms</b>	<b>Population</b>
			<b>North</b>	Goolisandram	1.5Kms	250
			<b>East</b>	Koottur	1.0Kms	200
			<b>South</b>	Hosappuram	1.0kms	300
			<b>West</b>	Mugalur	1.0Kms	190
9	Areas occupied by sensitive man- made land uses (hospitals, schools, places of worship, community facilities)	No	There is no hospital or Primary school, village temples and primary health centres within 500m radius of the quarry.			

10	Areas containing important, high quality or scarce Resources ( <i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i> )	No	There is no high quality or scarce resources such as ground water resources, surface resources, forestry, agriculture, fisheries, tourism, and rare minerals near the site.
11	Areas already subjected to pollution or environmental damage. ( <i>those where existing legal environmental standards are exceeded</i> )	No	It is an Fresh quarry.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems ( <i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i> )	No	None. Area is not prone to earthquakes, floods etc.

“I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.”

Date:

Place: Hosur

**P.VENKATA REDDY**

Signature of Project Proponent\Applicant





# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18098

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ1 Core Zone - 12°37'55.67"N 77°48'43.03"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/23 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/24 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period:hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	62.5	23.5	46.9	8.5	27.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	64.3	22.1	47.7	7.3	25.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	65.5	23.4	45.5	7.9	26.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.2	23.9	46.4	8.2	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	63.7	24.1	45.3	8.1	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	63.9	23.5	46.0	7.5	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	64.7	24.8	45.5	9.2	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	64.9	23.5	46.8	9.7	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	63.5	24.3	45.9	9.3	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	63.8	23.6	45.2	9.9	25.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.1	24.1	46.4	9.1	26.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	64.8	23.8	46.2	8.4	25.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	65.9	22.8	46.6	7.9	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.7	22.1	45.0	7.3	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	66.6	23.6	45.3	7.8	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	66.1	23.8	46.7	6.2	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	66.7	24.5	45.0	6.9	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	67.5	24.3	46.9	6.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	60.2	23.1	45.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	62.3	23.8	45.6	8.5	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	61.4	23.6	46.5	8.9	24.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	63.7	24.1	45.3	8.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	63.5	23.5	46.2	7.8	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	62.2	24.2	45.6	7.4	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	64.5	24.6	46.1	8.8	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	64.8	24.8	46.2	8.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:**BDL: Below Detection Limit ; DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*[Signature]*  
Reviewed & Authorized By  
**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District - Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18099

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ 2 - Core Zone- 12°37'57.88"N 77°48'38.13"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/25 & 29.11.2023

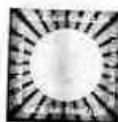
Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/26 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	65.2	45.3	22.2	8.5	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	64.2	43.1	21.0	8.3	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	63.3	42.5	22.2	8.0	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.2	42.1	20.3	8.5	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	60.2	43.2	21.1	8.3	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	62.3	43.8	22.4	8.1	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	63.8	42.6	21.3	8.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	64.5	41.8	21.4	8.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	60.1	42.1	20.3	8.2	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	62.2	43.6	22.3	8.3	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	68.8	45.2	22.1	9.0	18.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	67.1	44.3	21.3	8.5	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	66.2	45.1	22.5	8.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.3	43.5	22.3	8.2	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	67.1	42.1	21.0	8.3	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.2	43.1	20.3	8.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	66.3	43.2	21.2	8.8	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	64.2	44.1	22.1	9.0	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	68.3	45.3	22.6	8.3	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	60.2	44.5	22.2	8.1	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	62.3	42.1	21.0	9.0	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	64.1	45.1	20.2	8.6	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	65.2	44.3	20.2	8.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	64.2	42.2	21.1	8.3	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	63.2	43.3	22.1	8.2	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	62.5	41.0	21.2	8.0	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL Below Detection Limit ; DL Detection Limit ; NH<sub>3</sub> BDL (DL:20); O<sub>3</sub> BDL (DL:20); CO BDL (DL:1.0); Pb BDL (DL:0.1); Ni BDL (DL:1.0); As BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub> BDL (DL:1.0); BaP BDL (DL:0.1)  
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*P. Kavitha*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED®

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18100

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ3 – Gulisandiram - 12°38'18.68"N 77°48'37.51"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/27 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/28 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period:hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	63.2	43.5	22.1	6.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.1	44.2	22.0	6.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	60.1	43.2	21.2	6.3	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	68.2	42.1	21.1	6.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	65.2	40.2	20.1	6.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	64.3	41.3	20.2	5.2	18.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	62.2	43.3	21.2	5.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	60.1	45.2	22.1	6.8	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	63.4	44.1	22.0	5.2	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.5	43.2	22.1	6.1	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.2	40.2	22.3	5.6	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	68.2	42.3	22.5	6.6	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	60.2	44.2	23.6	6.4	24.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	62.3	43.1	24.5	6.0	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	61.3	45.2	25.2	6.3	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	60.2	44.2	26.1	7.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	62.3	43.3	22.1	7.4	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	61.2	41.2	21.2	7.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	62.2	40.1	22.2	6.3	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	67.3	42.3	20.2	6.5	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	68.2	43.6	21.3	6.5	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	66.1	44.5	22.5	6.3	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	65.3	45.2	22.4	5.4	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	68.2	44.2	22.5	5.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	60.2	43.1	20.1	6.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	62.5	42.5	21.2	6.9	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0);  
Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)  
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*P. Kavitha*  
Reviewed & Authorized By  
**P. KAVITHA**  
Technical Manager  
Authorised Signatory





# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459  
Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18101

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ4 – Gopanapalli- 12°39'0.48"N 77°47'45.05"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/29 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/30 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>5</sub> H <sub>8</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	63.5	48.2	22.1	7.5	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.5	47.2	22.3	7.1	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	62.1	42.3	21.2	7.8	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	61.0	46.0	20.0	7.2	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	60.2	48.3	22.1	8.3	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	68.2	43.5	22.5	8.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	67.3	47.3	21.3	7.0	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	65.2	47.4	22.2	7.4	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	64.2	44.5	22.1	7.6	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	63.2	45.5	22.3	7.3	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	61.2	49.2	22.1	8.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	60.2	49.2	21.2	8.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	62.3	48.3	22.1	7.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	64.2	47.6	23.2	6.2	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	68.2	48.2	22.1	9.1	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	60.2	44.5	22.5	8.4	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	62.4	45.2	20.1	8.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	63.5	46.1	20.1	7.4	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	60.2	45.3	22.1	8.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	63.2	44.4	21.2	8.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	62.1	45.0	20.0	8.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	60.2	46.0	21.0	8.6	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	62.3	47.2	22.1	7.4	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	64.2	47.1	21.2	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	68.3	45.2	22.1	8.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	69.1	44.5	21.3	8.4	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit; DL: Detection Limit; NH<sub>3</sub>: BDL (DL 20); O<sub>3</sub>: BDL (DL 20); CO: BDL (DL 1.0);

Pb: BDL (DL 0.1); Ni: BDL (DL 1.0); As: BDL (DL 1.0); C<sub>5</sub>H<sub>8</sub>: BDL (DL 1.0); BaP: BDL (DL 0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459  
Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18102

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ5 – Kelamangalam - 12°36'20.43"N 77°50'52.97"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/31 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/32 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	68.8	44.5	20.1	8.4	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	69.6	41.4	22.5	8.3	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	67.4	42.6	20.2	7.9	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	69.3	43.7	21.2	8.1	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	68.7	42.6	22.7	8.3	25.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	66.5	41.5	21.5	8.4	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	63.3	41.9	21.4	7.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	62.4	42.8	21.3	7.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	61.6	45.5	23.1	8.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	64.5	44.9	22.5	8.5	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	62.5	43.1	22.8	7.6	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	63.5	42.6	21.3	7.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	70.5	42.8	22.5	8.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	71.5	42.5	22.4	8.4	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	68.7	41.4	21.8	7.6	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.3	42.3	22.3	7.9	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	70.7	40.6	21.8	8.3	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	69.9	41.4	21.5	8.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	70.5	40.3	20.2	7.3	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	69.9	42.4	21.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	68.3	40.4	21.3	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	67.8	41.9	20.6	9.0	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	69.4	41.6	21.2	7.2	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	68.5	40.1	21.7	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	68.4	41.2	21.3	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	67.9	41.3	20.6	8.4	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL Below Detection Limit ; DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*[Signature]*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459  
Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18103

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring  
Location of Sampling : AAQ 6 – Saragapalli- 12°36'13.94"N 77°46'2.00"E  
Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07  
Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/33 & 29.11.2023  
Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/34 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period,hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	65.2	45.3	22.4	6.5	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.5	44.5	22.2	6.4	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	63.2	45.6	23.3	5.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	62.5	42.4	21.2	6.5	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	68.4	43.5	22.3	6.3	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	69.5	44.3	22.5	5.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	60.4	42.8	21.4	6.3	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	62.5	43.1	22.0	6.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	61.5	44.5	22.3	7.4	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.8	42.3	20.4	5.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	64.5	41.1	21.2	5.1	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	62.8	43.6	22.4	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	60.6	42.3	21.0	7.3	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	68.5	45.2	22.4	6.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	66.4	42.4	21.8	7.3	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	64.5	44.3	22.3	7.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	63.4	44.6	22.6	6.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	64.4	45.8	22.5	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	65.4	42.6	21.2	8.2	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	64.3	43.0	21.5	6.2	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	65.5	42.3	22.6	6.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	67.8	44.6	21.8	6.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	70.5	42.9	22.5	7.6	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	72.4	41.5	20.4	7.9	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	73.9	42.4	21.6	7.2	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	75.2	43.5	22.4	7.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ; DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*P. Kavitha*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory





# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

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Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18104

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ7 – Karukondapalli - 12°39'25.44"N 77°51'52.21"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/35 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/36 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	67.4	45.2	23.1	7.6	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	68.3	45.5	24.2	7.7	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	69.2	43.6	24.3	7.2	18.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	68.4	45.3	24.5	8.3	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	67.5	47.1	23.1	9.2	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	68.6	47.6	23.3	9.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	66.5	42.8	23.0	8.1	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	68.4	44.6	24.3	6.2	17.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	67.6	43.8	24.4	7.8	17.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	68.7	44.9	23.2	8.3	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	69.4	45.5	23.5	7.3	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	68.4	46.6	24.3	7.1	18.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	68.5	42.5	24.2	7.3	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	65.4	45.8	24.4	6.8	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	69.3	44.0	23.4	6.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	69.7	45.6	24.0	8.1	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	67.4	46.2	24.3	7.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	65.6	46.3	24.4	6.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	64.3	43.2	23.1	7.3	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	67.4	42.9	24.3	7.5	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	65.3	43.5	24.2	8.4	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	68.2	44.9	23.4	7.6	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	72.5	45.8	24.5	7.4	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	71.9	47.7	25.3	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	72.4	48.6	24.2	6.5	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	70.6	45.1	23.4	6.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ; DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0);

Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



*P. Kavitha*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



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Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18105

Test Certificate Date : 06.06.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ8 – Idayanallur – 12°40'45.91"N 77°48'30.44"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/37 & 29.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/38 & 29.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	NH <sub>3</sub>	O <sub>3</sub>	CO	Pb	Ni	As	C <sub>6</sub> H <sub>6</sub>	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>	ng/m <sup>3</sup>	µg/m <sup>3</sup>	ng/m <sup>3</sup>
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.03.2023	7:00-7:00	64.5	45.5	22.5	6.2	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.03.2023	7:15-7:15	62.4	41.6	23.8	7.8	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.03.2023	7:00-7:00	69.3	45.5	21.0	6.6	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.03.2023	7:15-7:15	67.7	42.8	21.9	5.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.03.2023	7:00-7:00	66.9	43.5	22.5	5.9	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.03.2023	7:15-7:15	67.6	42.1	21.8	6.3	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.03.2023	7:00-7:00	68.4	41.6	23.6	6.9	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.03.2023	7:15-7:15	69.8	42.5	21.3	5.3	24.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.03.2023	7:00-7:00	67.4	43.5	22.5	5.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.03.2023	7:15-7:15	66.9	44.1	23.1	5.8	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.04.2023	7:00-7:00	68.7	42.3	21.8	5.4	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2023	7:15-7:15	67.8	43.6	24.2	6.9	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.04.2023	7:00-7:00	66.8	41.6	22.5	5.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2023	7:15-7:15	69.4	41.5	21.8	5.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.04.2023	7:00-7:00	65.2	42.6	22.4	5.3	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2023	7:15-7:15	67.4	43.9	23.9	7.6	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.04.2023	7:00-7:00	68.8	41.8	21.4	8.5	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2023	7:15-7:15	69.3	42.5	21.9	8.9	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.05.2023	7:00-7:00	67.9	43.6	22.1	7.2	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.05.2023	7:15-7:15	66.4	42.8	24.3	7.8	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.05.2023	7:00-7:00	69.9	41.3	21.4	8.6	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2023	7:15-7:15	68.4	44.6	23.9	8.5	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.05.2023	7:00-7:00	67.2	43.9	21.4	7.5	24.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2023	7:15-7:15	66.6	42.8	22.1	7.2	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.05.2023	7:00-7:00	69.4	43.9	23.4	8.5	25.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2023	7:15-7:15	67.7	42.8	21.1	8.7	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

**Note:** BDL: Below Detection Limit ; DL: Detection Limit ; NH<sub>3</sub>: BDL (DL:20); O<sub>3</sub>: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C<sub>6</sub>H<sub>6</sub>: BDL (DL:1.0); BaP: BDL (DL:0.1)

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory







# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032, Tamil Nadu, INDIA  
Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459  
Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

ISSUED TO: M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18106

Test Certificate Date : 06.06.2023

Sample Description : Ambient Noise Monitoring  
Location of Sampling : N1 – Core zone - 12°37'55.14"N 77°48'44.90"E  
Location of Sampling : N2 – Core Zone - 12°37'59.89"N 77°48'36.36"E  
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10  
Sampling Instrument : CML/ENV/SLM/001 & CML/ENV/SLM/002

Sampling Date : 18.03.2023

Loction	N1 – Core zone			N2 – Core zone		
	Min	Max	Result	Min	Max	Result
Parameter	dB(A)					
Time	dB(A)					
06:00-07:00	38.5	44.6	42.5	33.6	40.2	38.0
07:00-08:00	36.7	42.7	40.7	36.1	46.6	44.0
08:00-09:00	40.9	46.3	44.4	37.5	46.9	44.4
09:00-10:00	41.8	48.3	46.2	37.2	48.1	45.4
10:00-11:00	42.5	47.3	45.5	38.1	48.5	45.9
11:00-12:00	44.3	45.3	44.8	38.4	47.2	44.7
12:00-13:00	40.9	45.5	43.8	34.9	43.4	41.0
13:00-14:00	43.4	46.1	45.0	37.2	48.8	46.1
14:00-15:00	41.9	42.9	42.4	36.2	43.7	41.4
15:00-16:00	39.6	40.4	40.0	35.9	46.3	43.7
16:00-17:00	35.1	38.7	37.3	31.6	38.4	36.2
17:00-18:00	35.5	39.9	38.2	32.5	40.9	38.5
18:00-19:00	34.8	45.2	42.6	34.4	43.4	40.9
19:00-20:00	38.1	45.9	43.6	31.2	39.7	37.3
20:00-21:00	35.2	44.9	42.3	36.9	46.5	43.9
21:00-22:00	39.6	45.3	43.3	32.5	40.8	38.4
22:00-23:00	35.4	38.7	37.4	35.4	44.3	41.8
23:00-00:00	32.7	37.6	35.8	34.1	42.4	40.0
00:00-01:00	33.8	38.8	37.0	32.9	40.7	38.4
01:00-02:00	31.3	34.3	33.1	32.3	42.9	40.3
02:00-03:00	32.6	37.1	35.4	33.7	41.2	38.9
03:00-04:00	32.4	36.7	35.1	34.6	38.5	37.0
04:00-05:00	32.4	35.5	34.2	34.1	40.7	38.5
05:00-06:00	33.6	34.8	34.2	35.6	39.5	38.0
Result	Day Means		42.3	Day Means		41.9
	Night Means		35.0	Night Means		38.7

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032, Tamil Nadu, INDIA  
Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459  
Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

**ISSUED TO:** M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18107

Test Certificate Date : 06.06.2023

Sample Description : Ambient Noise Monitoring  
Location of Sampling : N3 – Gulisandiram - 12°38'18.47"N 77°48'37.70"E  
Location of Sampling : N4 – Gopanapalli- 12°39'0.48"N 77°47'45.50"E  
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10  
Sampling Instrument ID : CML/ENV/SLM/001 & CML/ENV/SLM/002

Sampling Date : 18.03.2023						
Loction	N3 – Gulisandiram			N4 – Gopanapalli		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	35.1	39.5	37.8	33.8	42.6	39.6
07:00-08:00	35.4	40.2	38.4	35.6	43.3	40.1
08:00-09:00	35.6	41.6	39.6	35.7	44.5	41.0
09:00-10:00	35.1	41.2	39.1	31.6	46.9	42.0
10:00-11:00	34.9	43.4	41.0	36.4	48.3	44.0
11:00-12:00	36.2	45.7	43.2	32.8	45.7	45.6
12:00-13:00	34.1	48.2	45.4	34.6	43.2	42.9
13:00-14:00	32.9	49.3	46.4	32.9	41.4	40.8
14:00-15:00	38.4	49.7	47.0	37.4	49.3	39.0
15:00-16:00	34.6	47.9	45.1	32.6	40.7	46.6
16:00-17:00	32.9	40.8	38.4	32.7	40.3	38.3
17:00-18:00	34.1	43.4	40.9	31.6	38.5	38.0
18:00-19:00	33.6	41.6	39.2	31.8	38.3	36.3
19:00-20:00	32.8	40.8	38.4	32.4	40.4	36.2
20:00-21:00	34.1	43.4	40.9	33.6	41.3	38.0
21:00-22:00	36.9	45.5	43.1	32.9	40.2	39.0
22:00-23:00	32.7	41.9	39.4	31.7	39.7	37.9
23:00-00:00	34.2	43.6	41.1	32.6	40.4	37.3
00:00-01:00	32.6	40.8	38.4	33.9	37.1	38.1
01:00-02:00	31.3	35.5	33.9	35.2	38.7	35.8
02:00-03:00	32.8	36.9	35.3	34.6	35.9	37.3
03:00-04:00	34.1	37.3	36.0	33.7	36.5	35.3
04:00-05:00	35.5	37.1	36.4	32.6	35.5	35.3
05:00-06:00	33.9	38.5	36.8	32.1	42.2	34.3
Result	Day Means		41.4	Day Means		40.3
	Night Means		36.8	Night Means		36.2

**Note:** CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



*[Signature]*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Email : test@mettexlab.com | Web : www.mettexlab.com

## TEST REPORT

**ISSUED TO:** M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18108

Test Certificate Date : 06.06.2023

Sample Description : Ambient Noise Monitoring  
Location of Sampling : N5 – Kelamangalam - 12°36'20.93"N 77°50'52.08"E  
Location of Sampling : N6 – Saragapalli - 12°36'13.91"N 77°46'1.72"E  
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10  
Sampling Instrument ID : CML/ENV/SLM/003 & CML/ENV/SLM/004

Sampling Date : 09.05.2023						
Loction	N5 - Kelamangalam			N6 – Saragapalli		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	31.2	39.9	37.4	34.5	43.2	40.7
07:00-08:00	33.7	41.5	39.2	33.7	40.4	38.2
08:00-09:00	34.5	42.8	40.4	32.8	41.8	39.3
09:00-10:00	35.5	44.5	42.0	33.9	38.1	36.5
10:00-11:00	36.1	45.1	42.6	34.7	40.6	38.6
11:00-12:00	38.2	43.3	41.5	34.1	40.2	38.1
12:00-13:00	38.3	41.7	40.3	32.8	38.5	36.5
13:00-14:00	36.7	42.4	40.4	34.7	43.2	40.8
14:00-15:00	32.7	45.9	43.1	32.6	40.6	38.2
15:00-16:00	31.5	40.5	38.0	31.3	38.9	36.6
16:00-17:00	32.5	41.7	39.2	32.6	41.2	38.8
17:00-18:00	36.5	44.3	42.0	33.5	42.7	40.2
18:00-19:00	34.2	43.7	41.2	34.4	43.2	40.7
19:00-20:00	33.8	41.4	39.1	32.9	40.6	38.3
20:00-21:00	31.2	39.5	37.1	33.6	41.4	39.1
21:00-22:00	32.8	40.6	38.3	31.5	38.6	36.4
22:00-23:00	33.9	41.4	39.1	32.5	40.1	37.8
23:00-00:00	31.4	38.5	36.3	31.7	38.2	36.1
00:00-01:00	32.8	40.1	37.8	32.3	39.3	37.1
01:00-02:00	33.5	36.2	35.1	33.9	38.4	36.7
02:00-03:00	35.7	39.5	38.0	31.5	35.5	33.9
03:00-04:00	36.1	39.2	37.9	32.4	36.3	34.8
04:00-05:00	35.2	38.1	36.9	34.1	35.8	35.0
05:00-06:00	34.6	36.9	35.9	32.6	33.6	33.1
Result	Day Means		40.0	Day Means		38.5
	Night Means		36.8	Night Means		35.2

**Note:** CPCB Norms Residential Area Day Time: 55 dB(A); Night Time: 45 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory



# CHENNAI METTEX LAB PRIVATE LIMITED<sup>®</sup>

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## TEST REPORT

**ISSUED TO:** M/s. Gopanapalli Rough Stone Quarries,  
Gopanapalli Village, Hosur Taluk, Krishnagiri District – Cluster Extend- 17.50.0 ha

Test Certificate No : CML/23-24/18109

Test Certificate Date : 06.06.2023

Sample Description : Ambient Noise Monitoring  
Location of Sampling : N7 – Karukondapalli - 12°39'26.12"N 77°51'51.48"E  
Location of Sampling : N8 – Idayanallur - 12°40'45.58"N 77°48'31.36"E  
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10  
Sampling Instrument ID : CML/ENV/SLM/003 & CML/ENV/SLM/004

Sampling Date : 09.05.2023						
Location	N7 - Karukondapalli			N8 - Idayanallur		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	33.9	40.5	38.3	31.5	38.1	35.9
07:00-08:00	36.1	43.6	41.3	32.6	40.7	38.3
08:00-09:00	33.2	44.9	42.2	33.9	41.4	39.1
09:00-10:00	34.7	43.2	40.8	31.4	39.5	37.1
10:00-11:00	31.6	40.9	38.4	32.5	40.2	37.9
11:00-12:00	32.5	41.2	38.7	33.8	41.4	39.1
12:00-13:00	36.2	43.2	41.0	35.6	43.6	41.2
13:00-14:00	35.9	44.8	42.3	31.8	38.4	36.2
14:00-15:00	31.9	39.1	36.8	33.9	41.7	39.4
15:00-16:00	33.6	41.4	39.1	32.5	40.9	38.5
16:00-17:00	31.5	39.2	36.9	34.8	43.6	41.1
17:00-18:00	32.8	40.7	38.3	32.6	40.4	38.1
18:00-19:00	32.6	40.3	38.0	35.1	43.1	40.7
19:00-20:00	32.7	41.7	39.2	36.1	40.2	38.6
20:00-21:00	33.9	42.5	40.1	34.2	43.6	41.1
21:00-22:00	34.2	43.1	40.6	36.5	47.1	44.5
22:00-23:00	36.1	45.9	43.3	33.8	41.2	38.9
23:00-00:00	33.8	41.7	39.3	33.9	42.1	39.7
00:00-01:00	31.9	40.3	37.9	31.5	39.4	37.0
01:00-02:00	33.1	41.9	39.4	32.9	40.2	37.9
02:00-03:00	32.9	33.9	33.4	33.4	41.7	39.3
03:00-04:00	31.3	34.8	33.4	31.7	38.5	36.3
04:00-05:00	33.8	36.5	35.4	32.6	40.8	38.4
05:00-06:00	31.9	38.5	36.3	31.3	38.6	36.3
Result	Day Means		39.7	Day Means		39.2
	Night Means		36.5	Night Means		37.9

**Note:** CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



*P. Kavitha*  
Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory





# CHENNAI METTEX LAB PRIVATE LIMITED

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

## TEST REPORT

Page No.1 of 2

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha

Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

**Cust. Ref :** SRF Dated : 27.05.2023.

**Lab No :** 24017897

**T.C Date :** 06.06.2023

**T.C No :** CML/23-24/18110

**Date Of Receipt :** 29.05.2023

**Analysis Commenced On:** 29.05.2023

**Analysis Completed On :** 06.06.2023

**Sample Description :** Surface Water (SW-1) – Nanjappan Kodigai Eri  
(as stated by customer)

TEST	PROTOCOL	RESULTS
<b>Discipline: Chemical</b>		<b>Group: Water</b>
Colour	IS 3025 Part 4:1983 (Reaff.2017)	10 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	7.55
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	1053 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	5.1 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	621 mg/l
Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff.2019)	192.74 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	32.1 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	27.4 mg/l
Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff.2019)	277 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	135.5 mg/l
Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff.2019)	76.1 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.16 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.55 mg/l
Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff.2019)	17.2 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

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# CHENNAI METTEX LAB PRIVATE LIMITED

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

Lab No: 24017897 T.C No: CML/23-24/18110 Dated : 06.06.2023

Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	6.2 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	36 mg/l
Dissoived Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.3 mg/l
Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	1.2 mg/l
Sulphide as H <sub>2</sub> S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	15.5 mg/l
Discipline: Biological	Group: Water	
Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	920 MPN/100ml
Escherichia coli	APHA 23 <sup>rd</sup> Edn. 2017:9221F	120 MPN/100ml

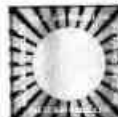
**Note** : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorized By

**G.S. RADHA**  
Technical Manager  
Authorised Signatory



Reviewed & Authorized By

**P. KAVITHA**  
Technical Manager  
Authorised Signatory

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## TEST REPORT

Page No.1 of 2

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha  
Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

**T.C Date :** 06.06.2023

**T.C No :** CML/23-24/18111

**Date Of Receipt :** 29.05.2023

**Analysis Commenced On:** 29.05.2023

**Analysis Completed On :** 06.06.2023

**Cust. Ref :** SRF Dated : 27.05.2023.

**Lab No :** 24017898

**Sample Description :** Surface Water (SW-2) – Gopanapalli Lake  
(as stated by customer)

TEST	PROTOCOL	RESULTS
<b>Discipline: Chemical</b>		<b>Group: Water</b>
Colour	IS 3025 Part 4:1983 (Reaff.2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	7.02
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	1281 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	2.2 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	455 mg/l
Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff.2019)	133.34 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	25.1 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	17.2 mg/l
Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff.2019)	197 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	80.6 mg/l
Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff.2019)	57.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.14 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.22 mg/l
Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff.2019)	11.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

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### TEST REPORT

Page No. 1 of 2

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha  
Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

**T.C Date :** 06.06.2023

**T.C No :** CML/23-24/18112

**Date Of Receipt :** 29.05.2023

**Analysis Commenced On:** 29.05.2023

**Analysis Completed On :** 06.06.2023

**Cust. Ref :** SRF Dated : 27.05.2023.

**Lab No :** 24017899

**Sample Description :** Surface Water (SW-3) – Near Project Area  
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff:2017)	10 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.97
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	1203 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	3.9 NTU
Total Dissolved Solids	IS:3025 Part 16:1984 (Reaff:2017)	710 mg/l
Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff:2019)	234.3 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	40.2 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	32.6 mg/l
Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff:2019)	274 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	134.5 mg/l
Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff:2019)	110 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.29 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.32 mg/l
Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff:2019)	27.3 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)

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*[Signature]*

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## TEST REPORT

Page No 1 of 2

ISSUED TO : M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha  
Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

T.C Date : 06.06.2023

T.C No : CML/23-24/18113

Date Of Receipt : 29.05.2023

Analysis Commenced On: 29.05.2023

Analysis Completed On : 06.06.2023

Cust. Ref : SRF Dated : 27.05.2023.

Lab No : 24017900

Sample Description : Ground Water (WW-1) - Karukondapalli  
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff:2017)	5
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.73
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	831 $\mu$ mhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	1.2 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	490 mg/l
Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff:2019)	154.04 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	27.3 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	20.9 mg/l
Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff:2019)	171.5 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	120 mg/l
Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff:2019)	55 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.11 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.26 mg/l
Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff:2019)	5.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)

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## TEST REPORT

Page No.1 of 2

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha  
Gopanapalli Village, Hosur taluk,  
Krishnaairi District.

**T.C Date :** 06.06.2023  
**T.C No :** CML/23-24/18115  
**Date Of Receipt :** 29.05.2023  
**Analysis Commenced On:** 29.05.2023  
**Analysis Completed On :** 06.06.2023

**Cust. Ref :** SRF Dated : 27.05.2023.

**Lab No :** 24017902

**Sample Description :** Ground Water (BW-2) – Idayanallur  
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff:2017)	5
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.88
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	969 $\mu$ mhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	1.2 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	572 mg/l
Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009 (Reaff:2019)	179.29 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	30.5 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	25.1 mg/l
Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986 (Reaff:2019)	210.1 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	133 mg/l
Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986 (Reaff:2019)	64.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.22 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F.D	0.27 mg/l
Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988 (Reaff:2019)	7.7 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)

...Contd....2

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**TEST REPORT**

Page No.1 of 1

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50 ha  
Gopanapalli Village, Hosur taluk,  
Krishnagiri District.**T.C Date :** 06.06.2023**T.C No :** CML/23-24/18117**Date Of Receipt :** 29.05.2023**Analysis Commenced On:** 29.05.2023**Analysis Completed On :** 06.06.2023**Cust. Ref :** SRF Dated : 27.05.2023.**Lab No :** 24017904**Sample Description :** Soil - 2 - Core Zone  
(as stated by customer)

S. No	Test Parameters	Protocols	Results	
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	8.98	
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	550 µmhos/cm	
03	<b>Texture :</b>			
	Clay	Gravimetric Method	39.4 %	
	Sand		36.2 %	
	Silt		24.4 %	
04	Water Holding Capacity	By Gravimetric Method	46.3 %	
05	Bulk Density	By Cylindrical Method	1.01 g/cm <sup>3</sup>	
06	Porosity	By Gravimetric Method	48 %	
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	169.5 mg/kg	
08	Magnesium as Mg		130 mg/kg	
09	Manganese as Mn		24 mg/kg	
10	Zinc as Zn		1.71 mg/kg	
11	Boron as B		1.6 mg/kg	
12	Chloride as Cl		APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	203.5 mg/kg
13	Total Soluble Sulphate as SO <sub>4</sub>		IS 2720 Part 27 : 1977 (Reaff:2015)	0.0045 %
14	Potassium as K		USEPA 3050 B - 1996 & USEPA 6010 C - 2000	51 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.2 mg/kg	
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	530 mg/kg	
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)	
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)	
19	Copper as Cu		BDL (DL : 1.0 mg/kg)	
20	Lead as Pb		0.67 mg/kg	
21	Iron as Fe		2.8 mg/kg	
22	Organic Matter		IS : 2720 Part 22 : 1972 (Reaff: 2015)	2.77 %
23	Organic Carbon	IS : 2720 Part 22 : 1972 (Reaff: 2015)	1.61 %	
24	Cation Exchange Capacity	USEPA 9080 - 1986	38.6 meq/100g of soil	

----- End of Report -----

For Chennai Mettex Lab Private Limited



Reviewed &amp; Authorized By

P. KAVITHA

Technical Manager  
Authorized Signatory

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Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

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## TEST REPORT

Page No.1 of 1

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha

Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

**Cust. Ref :** SRF Dated : 27.05.2023.

**Lab No :** 24017905

**T.C Date :** 06.06.2023

**T.C No :** CML/23-24/18118

**Date Of Receipt :** 29.05.2023

**Analysis Commenced On:** 29.05.2023

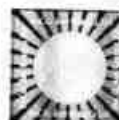
**Analysis Completed On :** 06.06.2023

**Sample Description :** Soil - 3 - Gopanapalli  
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.10
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	560 μmhos/cm
03	<b>Texture :</b>		
	Clay	Gravimetric Method	37.8 %
	Sand		38.5 %
	Silt		23.7 %
04	Water Holding Capacity	By Gravimetric Method	45.9 %
05	Bulk Density	By Cylindrical Method	0.94 g/cm <sup>3</sup>
06	Porosity	By Gravimetric Method	42.9 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	270 mg/kg
08	Magnesium as Mg		76 mg/kg
09	Manganese as Mn		24.5 mg/kg
10	Zinc as Zn	USEPA 6010 C - 2000	4.1 mg/kg
11	Boron as B		1.6 mg/kg
12	Chloride as Cl		140 mg/kg
13	Total Soluble Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	0.012 %
14	Potassium as K	IS 2720 Part 27 : 1977 (Reaff.2015)	0.012 %
15	Total Phosphorus as P	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	35 mg/kg
16	Total Nitrogen as N	IS 10158 : 1982 (Reaff. 2019)	1.06 mg/kg
17	Cadmium as Cd	IS 14684 : 1999 (Reaff.2019)	463 mg/kg
18	Total Chromium as Cr	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
19	Copper as Cu		1.07 mg/kg
20	Lead as Pb		BDL (DL : 1.0 mg/kg)
21	Iron as Fe	USEPA 6010 C - 2000	0.31 mg/kg
22	Organic Matter		1.86 mg/kg
23	Organic Carbon		IS : 2720 Part 22: 1972 (Reaff: 2015)
24	Cation Exchange Capacity	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.29 %
		USEPA 9080 - 1986	42.8 meq/100g of soil

End of Report

For Chennai MettEx Lab Private Limited



*[Signature]*

Reviewed & Authorized By

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Authorized Signatory







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**CHENNAI METTEX LAB PRIVATE LIMITED**

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

**TEST REPORT**

Page No:1 of 1

**ISSUED TO :** M/s. Gopanapalli Rough Stone Quarries,  
Cluster Extend - 17.50.0 ha  
Gopanapalli Village, Hosur taluk,  
Krishnagiri District.

**T.C Date :** 06.06.2023  
**T.C No :** CML/23-24/18121  
**Date Of Receipt :** 29.05.2023  
**Analysis Commenced On:** 29.05.2023  
**Analysis Completed On :** 06.06.2023

**Cust. Ref :** SRF Dated : 27.05.2023.

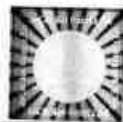
**Lab No :** 24017908

**Sample Description :** Soil - 6 - Idayanallur  
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	7.90
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	528 µmhos/cm
03	<b>Texture :</b>		
	Clay		40.1 %
	Sand	Gravimetric Method	32.2 %
	Silt		27.7 %
04	Water Holding Capacity	By Gravimetric Method	48.5 %
05	Bulk Density	By Cylindrical Method	1.10 g/cm <sup>3</sup>
06	Porosity	By Gravimetric Method	47.6 %
07	Calcium as Ca		130 mg/kg
08	Magnesium as Mg	USEPA 3050 B - 1996 &	96.7 mg/kg
09	Manganese as Mn	USEPA 6010 C - 2000	22.5 mg/kg
10	Zinc as Zn		4.4 mg/kg
11	Boron as B		0.91 mg/kg
12	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B.	130.7 mg/kg
13	Total Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.015 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	44 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.8 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	477.1 mg/kg
17	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		1.55 mg/kg
19	Copper as Cu	USEPA 3050 B - 1996 &	BDL (DL : 1.0 mg/kg)
20	Lead as Pb	USEPA 6010 C - 2000	0.76 mg/kg
21	Iron as Fe		2.13 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.83 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.06 %
24	Cation Exchange Capacity	USEPA 9080 - 1986	40.1 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited



*(Signature)*  
Reviewed & Authorized By  
**P. KAVITHA**  
Technical Manager

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## National Accreditation Board for Education and Training

# Certificate of Accreditation

### Geo Exploration & Mining Solutions, Salem

No. 17, Advaita Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals opencast only	1	1 (a) (i)	A
2	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
3	Building and construction projects	38	8(a)	B

**Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Jan 06, 2023 and posted on QCI-NABET website.**

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Sr. Director, NABET  
Dated: Feb 20, 2023

Certificate No.  
NABET/EIA/2225/RA 0276

Valid up to  
August 06, 2025

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