

## **EXECUTIVE SUMMARY**

### **DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT OF GREY COLOUR GRANITE QUARRY**

(As per EIA Notification, 2006 dated 14.09.2006 and amendments)

Category: B<sub>1</sub>

Extent : 1.10.0 Ha  
S. F. Nos. : 373/1A and 373/1B (P)  
Village : Chendarapalli  
Taluk : Bargur  
District : Krishnagiri

## **PROPONENT**

**Thiru. B. Syednazar Babulal**

S/o.Babulal

No.114, Jagadevipalayam Village & Post  
Bargur Taluk, Krishnagiri District-63 5203

Email: [asgrnazrakb@gmail.com](mailto:asgrnazrakb@gmail.com)

Mob: 9994043767

## **CONSULTANT**

**AADHI BOOMI MINING & ENVIRO TECH (P) LTD**

**(QCI/NABET Accredited EIA Organization)**

3/216, K.S.V Nagar Narasothipatti,

Alagapuram (Po), Salem – 636004

Website: [www.abmenvirotec.com](http://www.abmenvirotec.com)

Email: [abmenvirotech@gmail.com](mailto:abmenvirotech@gmail.com), [suriyakumarsemban@gmail.com](mailto:suriyakumarsemban@gmail.com)

Mob: 9842729655

## 1. EXECUTIVE SUMMARY

**Chendarapalli Grey Colour Granite Quarry of B. Syednazar Babulal**, over an extent of 1.10.0 hectare is located in S.F. No: 373/1A and 373/1B (P) of Chendarapalli Village, Bargur Taluk, Krishnagiri District. The area is marked in the survey of India Toposheet No. 57L/7. The area lies between northern latitude of 12°29'33.04" to 12°29'37.77"N and eastern longitude from 78°18'10.76" to 78°18'16.25"E. The mining plan was approved in favor Thiru. B. Syednazar Babulal vide Rc.No.5403-1/MM4/2020, dated 12.02.2021.

As per the Environmental Impact Assessment (EIA) Notification dated 14<sup>th</sup> September 2006, the project falls under 1(a) mining of minerals, Category – B1(cluster) in view of lease area >5 and<100 Ha(Cluster). In view of the above the proponent submitted the online application to SEIAA/SEAC on 01.03.2021. The proposal has been placed in 213<sup>th</sup> STATE APPRAISAL COMMITTEE MEETING on 11.06.2021 and granted Terms of Reference vide Lr. No. SEIAA-TN/F. No.8401/SEAC/TOR-982/2021 dated 05.07.2021.

### 1.1 SCOPE OF THE PROJECT

The proposal for Environmental Clearance of Granite quarry of **Thiru. B. Syednazar Babulal** requires Draft EIA report for conducting public hearing and Final EIA Report as per Lr. No. SEIAA-TN/F. No.8401/SEAC/TOR-982/2021 dated 05.07.2021.

### 1.2 PROJECT DESCRIPTION

**Table No 1. 1 Project Details**

Project Details	
Proponent	Thiru. B. Syednazar Babulal
Total Mine Lease Area	1.10.0 Hectares (Patta land)
Survey No.	373/1A and 373/1B(P)
Site Location	Chedarapalli Village, Bargur Taluk, Krishnagiri District
Geographical Co-ordinates	Latitude: 12°29'33.04" to 12°29'37.77"N Longitude: 78°18'10.76" to 78°18'16.25"E
Toposheet No.	57L/7
Elevation	478 m above MSL
Accessibility	
Nearest Habitation	420 m - North Direction
Nearest Village	420 m – Balinayanapalli (N)

Nearest Town	Krishnagiri – 8.4 km– North West																				
Nearest Roadway	NH- 66– Krishnagiri to Kannandahalli – 0.65 km – South SH-131 - Bargur - Tirupattur Road – 6.8 km – North East MDR-157 Kaveripattinam - Kakkangarai Road 10.6km – South Chendarapalli Village Road – 209 m – West																				
Nearest Railway station	Patchur Railway Station – 20.6 km – Northeast																				
Nearest Airport	Bangalore Airport – 100 km – North West																				
<b>Environmental Sensitiveness</b>																					
Interstate Boundary	Tamil Nadu- Andhra Pradesh Interstate Boundary – 14.0 km – North																				
Coastal Zone	Bay of Bengal – 180 km – East Hence the area does not attract the C.R.Z. Notification, 1991.																				
Reserve Forest	Varadanapalli R.F. – 6.53 km – North East Bargur R.F. – 9.05 km – North East Thogarapalli R.F – 3.97 km – South East																				
Wildlife sanctuary	No wildlife sanctuary is located within 10km radius. Hence the area does not attract the Wildlife Protection Act, 1972.																				
Water bodies	<ol style="list-style-type: none"> <li>1. Narayanapuram lake near lease area is found at a distance of 100m in east direction</li> <li>2. Marudepalli Lake – 3.63 km – North West</li> <li>3. Marachandiram Lake – 8.98 – North West</li> <li>4. Krishnagiri Lake – 9.00 km – West</li> <li>5. Avathanapatti Lake – 9.30 km – West</li> <li>6. Sundekuppam Lake – 9.45 km – South West</li> <li>7. Orappam Lake – 5.45 km – North West</li> <li>8. Barur lake – 6.7m- SW</li> <li>9. Kathinapalli lake – 7.6km-SE</li> <li>10. Karadigollapatti Lake – 10.00km – South East</li> <li>11. A Lake near Malayandahalli – 9.25km – South West</li> <li>12. Badatalav Eri – 8.30km – North West</li> </ol>																				
Habitations	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Name of Village</th> <th style="width: 20%;">Direction</th> <th style="width: 20%;">Distance from Mines (Km)</th> <th style="width: 30%;">Population (Approx.)</th> </tr> </thead> <tbody> <tr> <td>Chendarapalli</td> <td rowspan="2" style="text-align: center;">SW</td> <td style="text-align: center;">1</td> <td rowspan="2" style="text-align: center;">6467</td> </tr> <tr> <td>Golrur</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Jagadevipalayam</td> <td style="text-align: center;">E</td> <td style="text-align: center;">2</td> <td style="text-align: center;">6747</td> </tr> <tr> <td>Srinivasapuram</td> <td style="text-align: center;">SE</td> <td style="text-align: center;">3.7</td> <td style="text-align: center;">2340</td> </tr> </tbody> </table>			Name of Village	Direction	Distance from Mines (Km)	Population (Approx.)	Chendarapalli	SW	1	6467	Golrur	2	Jagadevipalayam	E	2	6747	Srinivasapuram	SE	3.7	2340
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Srinivasapuram	SE	3.7	2340																		

	Modikuppam	S	3	2525
	Rasipalli	N, NW	2	2441
	Anjur		1.6	
	Gettur		0.52	
	Nayakkanur	S	2.2	2525
	Sulamalai	W	3.6	1966
	Total			25011
Defense Installations	Nil within 10km radius			
Quarries around 500m radius (AD Letter furnished)	5 Existing Quarries with total area of 7.55.5 Ha and 9 abandoned quarries are situated within the 500m radius from the lease boundary of proposed quarry as per AD Letter Roc.No.161/2018/Mines dated 19.02.2021			
Seismic Zone	Zone-III, Low damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002			
<b>Mining Details</b>				
Method of Mining	Open Cast – Semi Mechanized Mining Method			
Geological resources	2,19,220m <sup>3</sup> or 76,728m <sup>3</sup> @ of 35% recovery			
Mineable reserves	60,570 m <sup>3</sup> or 21,200m <sup>3</sup> @ of 35% recovery			
Production @ 35%	7500m <sup>3</sup> for five years			
Topsoil	4736 m <sup>3</sup> for the plan period			
Granite Rejects @ 65%	13930 m <sup>3</sup> for the next five year			
Depth of Mining	23m bgl			
Water Table	62-64m bgl			
Overall Pit Slope	45°			
Ore to waste ratio	1:3.0			
Period of Lease	20 years from the date of execution			
Project Cost	Rs. 212.04 Lakhs			
EMP Cost	Rs. 3.8 Lakhs			

## 2.0 Description of the Environment

### 2.1 Base line Environmental study

Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during March 1<sup>st</sup>, 2021- May 31<sup>st</sup>, 2021 to assess the existing environmental scenario in the area. For the purpose of EIA studies, mine lease area was considered as the core zone

and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone.

**Table No 1.2 Baseline Data**

Particulars	Details	Standards
<b>Meteorology (March 1st, 2021 - May 31st, 2021)</b>		
Rainfall (Avg.)	56.205 mm (Study period)	--
Temperature (Avg.)	29°C (Study period)	--
Wind speed	2.2 m/s	--
Wind Direction	From N, SW, S and NE	
<b>Ambient Air Quality (NAAQS)</b>		
PM <sub>10</sub>	40-52 µg/m <sup>3</sup>	100 µg/m <sup>3</sup>
PM <sub>2.5</sub>	17-31 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>
SO <sub>2</sub>	5-13 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>
NO <sub>x</sub>	7-15 µg /m <sup>3</sup>	80 µg/m <sup>3</sup>
<b>Noise Level (CPCB Standards)</b>		
Day time (6:00 am - 10:00 pm)	Core zone –40.5 – 42.5 dB (A) Buffer zone – 40.1- 42.7 dB (A)	<b>Industrial Area</b> Day Time - 75 dB (A) <b>Residential Area</b> Day Time – 55 dB (A)
Night time (10:00pm - 06:00 am)	Core zone – 30.9– 33.5 dB (A) Buffer zone – 32.1-34.4 dB(A)	<b>Industrial Area</b> Night Time – 70 dB(A) <b>Residential Area</b> Night Time – 45 dB (A)
<b>Water Quality IS 10500:2012 (Desirable limits)</b>		
pH	7.72-7.88	6.5 to 8.5
TDS	446-922 mg/l	500 mg/l
THCaCO <sub>3</sub>	206-500 mg/l	200 mg/l
<b>Soil Quality</b>		
pH	7.11 – 8.68	slightly acidic
Bulk density	0.914-0.99 g/cc	Favorable physical condition for plant growth.
<b>Hydro Geology</b>		
Depth of Mining	23m bgl	
Water Table	62-64m bgl	

## **2.2 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

### **2.2.1 Air Environment**

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by adopting semi-mechanized methods which involves Jack Hammer drilling and blasting, excavation, loading and transportation.

AERMOD was used for prediction of impact of PM<sub>10</sub> during conditions i) Loading/unloading and transportation of Grey granite and weathered rock by trucks on Haul roads ii) Blasting by using area source model to predict GLC of PM<sub>10</sub> during these conditions. Total predicted 24-h maximum GLC of PM<sub>10</sub> at project site for scenario 1 i.e loading-unloading and transportation and scenario 2 i.e blasting was 75.9 µg/m<sup>3</sup> and 48.9 µg/m<sup>3</sup> respectively occurred at the project site after superposition of base-line value 48 µg/m<sup>3</sup> over the incremental 27.9 µg/m<sup>3</sup> and 0.9 µg/m<sup>3</sup> respectively due to combined impact of loading and unloading and transportation over the haul road and due to blasting. Meteorological data under worst case scenario providing 24-h maximum average GLC was discussed above.

### **2.2.2 Noise Environment**

Noise pollution poses a major health risk to the mine workers. The sources of noise in the proposed open cast granite quarry are such as Drilling, Blasting, and during movement of vehicles.

The noise generated by the mining activity is dissipated within the core zone. This is because of distance involved and other topographical features adding to the noise attenuation. From the results, it can be seen that the ambient noise levels (day time and night time) at all the locations will remain within permissible limits prescribed by CPCB and 90dB (A) norms of DGMS. At present there is no mining activity carried out. However, the expected noise levels are not likely to have any effect. Precaution will be made to keep down the noise exposure level of 85 dB (A) to the operating personnel for 8 hrs duration. The charge per blast of 150kg is well below the Peak Particle Velocity below 5mm/s. But the proponent proposes to use only 5.1kg of explosives per day. However, as per statutory requirement additional control measures needs to be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

### **2.2.3 Water Environment**

Mining operations can affect groundwater quality in several ways. The most obvious occurs in the mining below the water table, either in underground workings or open

pits. This provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water. But this granite mine is devoid of any such impacts.

The impact due to mining on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during mining process. Based on the water quality index it is found that the water samples from the core zone (project site), Jagadevi and Kettur village are having poor water quality. The water sample from the core zone (project site), Jagadevi and Kettur village is high in Total Hardness, TDS. Chlorides was found high in Jagadevi and Kettur village. Few numbers of total coliform in was observed in Core Zone, Jagadevi and Kettur village. The water quality index of Anjur village shows good water quality, though there is an increase in permissible limit of Total Hardness.

Prolonged consumption of water containing high TDS causes cancer, liver failure, kidney failures and nervous system disorders and weaken immunity. Prolonged consumption of water having high chlorides content causes bladder cancer in human body. For the excellent quality of drinking the water must be treated with reverse osmosis process to overcome above mentioned such impacts on human body.

#### **2.2.4 Soil Environment**

Soil characteristics indicate favorable condition for plant growth. The top soil generated for the entire life of the mine will be 4,736m<sup>3</sup>. The excavated topsoil will be temporarily spread out along the boundary barrier and it will be used for plantation purpose

#### **2.2.5 Waste Dump**

The top soil generated for the entire life of the mine will be 4,736 m<sup>3</sup>. Top soil shall be removed and stacked separately along lease boundary as earth bund which will be used for afforestation purposes. The proposed rate of production of Grey colour Granite is about 7,500m<sup>3</sup> for five years at the rate of 35% recovery up to permissible depth. The rejects of 65% is about 13,930 m<sup>3</sup>. Total waste produced during the mining plan period will be around 22,592m<sup>3</sup> (including weathered rock) and is dumped on the southwest side.

<b>Proposed Dump Dimension</b>
103m (L) x 18m (B) x 12.13m (H)

### **2.2.6 Biological Environment**

There are no notified endangered species in the area, which may be affected due to the mining activities; therefore the biological environment will not have significant impact due to mining activity. The impact on the biological environment due to amount of dust generation is minimized by well-developed green belt in and around mining lease area.

### **2.2.7 Land Environment**

The Granite Quarry project will result in disturbance of the land use pattern of the mine lease area. The land degradation is unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. So reclamation of mined out land and proper formation of benches will be given due importance. The land use analyses show that the area is of predominantly Agriculture followed by buffer zones of the study area, which clearly indicates that the development of agriculture land increases over a period of time. At the end of the project, the quarried pit will be act as water storage pond. The stored water will be used for developing agricultural activity around the mining lease area. It will improve the livelihood of village people. The evaporation rate of the water in the pit is detail given in the report.

### **2.2.8 Socio Economic Environment**

The quarrying activity will definitely increase the employment opportunity (directly as well as indirectly) in the project area. Some of these impacts would be beneficial. The expectation of the people of area is concerned towards employment, education, road and health facilities. The literacy rate may be increased with the economic benefits which may arise from the quarrying activities.

Direct Employment - 34 person

Indirect Employment - 100 person.

Indirect employment is that people will keep shops such as tea shops, hotels, spare parts store, mechanic shed, etc. around the quarry depending on the proposed projects. Population rate is increased day by day in India. It is necessary to create employment to all people for their livelihood and country's economic development.



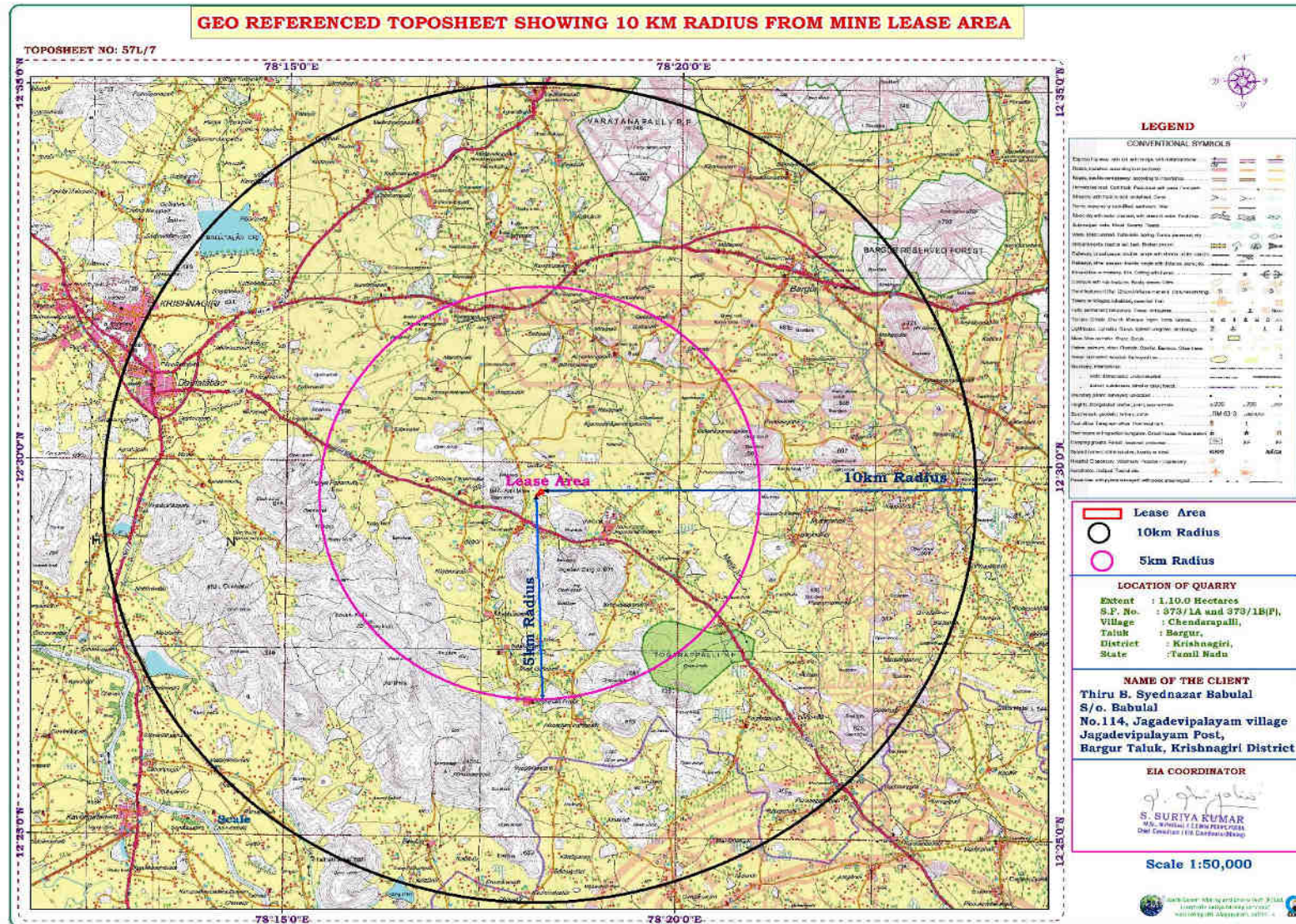


Fig No 11.1 Toposheet showing location of the lease area



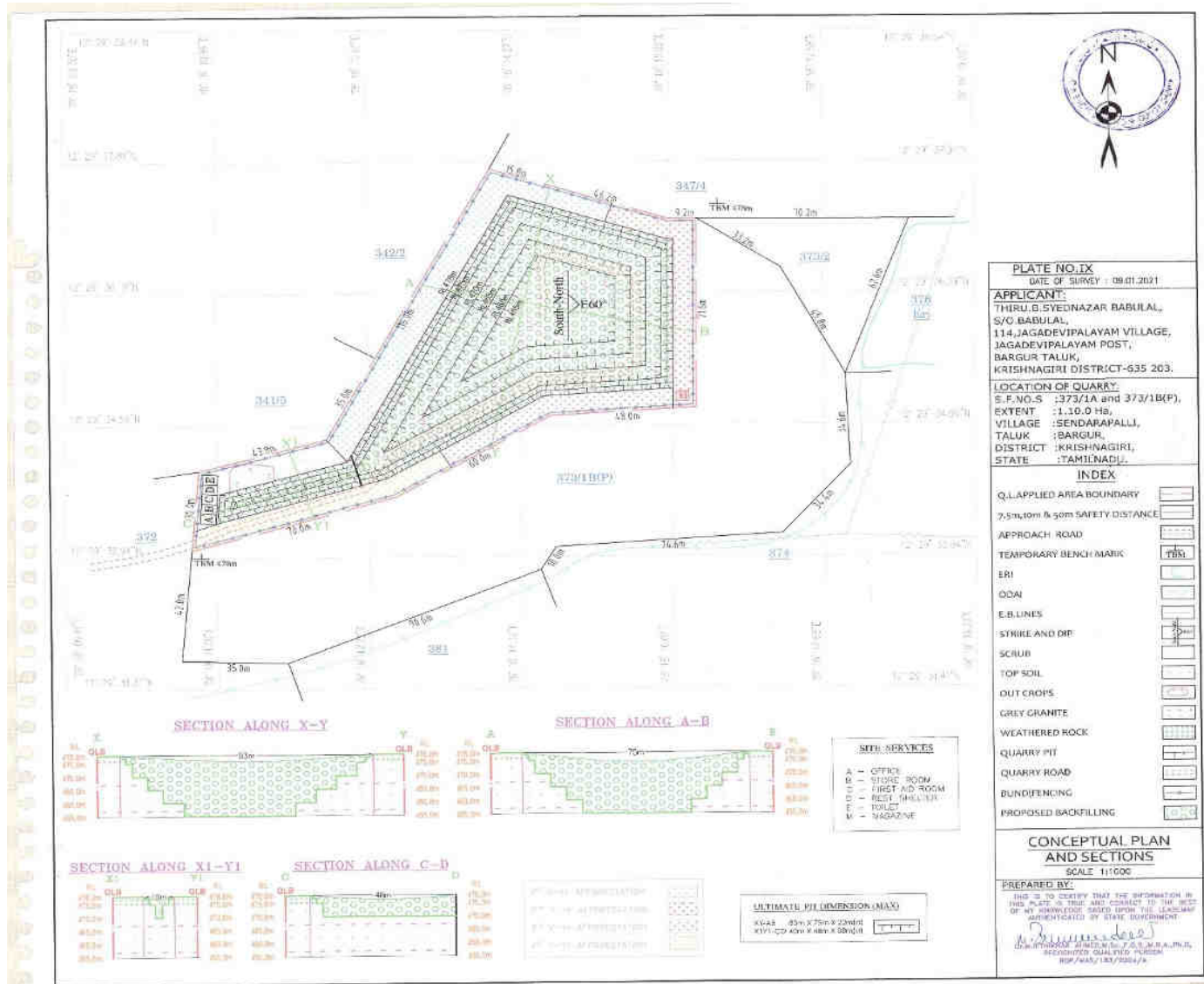


Fig No 11.3 Conceptual plan of the proposed project

**Table 1.3 Environmental Management Plan**

S.No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	<ul style="list-style-type: none"> <li>★ Dust extractor or wet drilling to be followed to control dust at source of emission</li> <li>★ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator</li> </ul>
		Blasting	<ul style="list-style-type: none"> <li>★ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution</li> </ul>
		Loading	<ul style="list-style-type: none"> <li>★ Water sprinkling be done before loading by making it moist</li> </ul>
		Transportation	<ul style="list-style-type: none"> <li>★ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste</li> <li>★ Overloading will be prevented</li> <li>★ Trucks/Dumpers covered by tarpaulin covers</li> </ul>
		DG Sets	<ul style="list-style-type: none"> <li>★ DG sets will be used only during power failure</li> <li>★ Adequate stack height for DG sets will be provided as per CPCB norms</li> </ul>
		General measures	<ul style="list-style-type: none"> <li>★ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust.</li> <li>★ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, goggles as per the MMR, 1961 amendments and circulars of DGMS.</li> <li>★ Regular health check-up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be</li> </ul>

**Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District**

			<p>carried out as per the Factories Act</p> <ul style="list-style-type: none"> <li>★ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.</li> </ul>
2	Water Environment	Surface water	<ul style="list-style-type: none"> <li>★ Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.</li> </ul>
		Ground water	<ul style="list-style-type: none"> <li>★ The mining activity will not intersect the ground water table</li> <li>★ Desilting will be carried out before and immediately after the monsoon season</li> </ul>
		Storm water	<ul style="list-style-type: none"> <li>★ Pit will be used for Storage of rainwater</li> <li>★ Rain water will be collected in sump in the mining pit 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 onwards and such sites where dust likely to be generated and for developing green belt.</li> <li>★ The proponent will collect and judiciously utilize the rainwater as part of rain water harvesting</li> </ul>
		General measures	<ul style="list-style-type: none"> <li>★ Regular monitoring and analyzing the quality of water</li> </ul>
3	Noise	Drilling	<ul style="list-style-type: none"> <li>★ Limiting time exposure of workers to excessive noise</li> </ul>

**Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District**

	Environment	Blasting	<ul style="list-style-type: none"> <li>★ Carrying out blasting only during day time and not on cloudy days</li> <li>★ Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.</li> <li>★ Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment</li> </ul>
		Transportation	<ul style="list-style-type: none"> <li>★ Proper and regular maintenance of vehicles, machinery and other equipments.</li> <li>★ The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.</li> <li>★ Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles.</li> <li>★ Adequate silencers will be provided in all the diesel engines of vehicles.</li> <li>★ Minimum use of horns and speed limit of 10 km/hr in the village area.</li> <li>★ It will be ensured that all transportation vehicles carry a valid PUC Certificates</li> </ul>
		General measures	<ul style="list-style-type: none"> <li>★ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas</li> <li>★ Provision of Quiet areas, where employees can get relief</li> </ul>

**Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District**

			<p>from workplace noise.</p> <ul style="list-style-type: none"> <li>★ The development of green belts around the periphery of the mine to attenuate noise.</li> <li>★ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.</li> </ul>
4	Vibration	Blasting	<ul style="list-style-type: none"> <li>★ No deep hole blasting envisaged.</li> <li>★ Small dia shot holes are used for breaking boulders.</li> <li>★ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios as per studies.</li> <li>★ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone</li> <li>★ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring</li> </ul>
5	Soil Environment	Topsoil	<ul style="list-style-type: none"> <li>★ Humus top soil shall be preserved for reuse in afforestation and agriculture</li> <li>★ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the quarry premises</li> <li>★ Garland drains will be provided around the mine and dumps to arrest any soil from the quarry area being carried away by the rain water. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability</li> </ul>

**Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District**

			of the benches
6	Waste Dump	Stabilization of Dumps	<ul style="list-style-type: none"> <li>★ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to form vegetation</li> <li>★ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.</li> </ul>
7	Plantation	Quarry lease boundary and waste dump	<ul style="list-style-type: none"> <li>★ Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise</li> <li>★ Stabilization of Dump with plantation</li> <li>★ It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation.</li> <li>★ The plant should be planted taken from nursery, where the survival rate is high.</li> </ul>
8	Land Environment		<ul style="list-style-type: none"> <li>★ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil.</li> <li>★ Provision of Garland drainage around the dumps</li> <li>★ Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land</li> <li>★ Appropriate measures will be taken for Green belt development.</li> </ul>



**Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District**

			<ul style="list-style-type: none"> <li>★ The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.</li> </ul>
9	Socio Economic		<ul style="list-style-type: none"> <li>★ Good maintenance practices will be adopted for machinery and equipment, which will help to avert potential noise problems.</li> <li>★ Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.</li> <li>★ Drilling, blasting etc at specified location will be followed with proper schedule.</li> <li>★ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone.</li> <li>★ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication.</li> <li>★ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards).</li> <li>★ As a part of CSR activities, community welfare activities will be undertaken by the proponent which leads to socio economic development</li> </ul>
10	Occupational Health		<ul style="list-style-type: none"> <li>★ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955</li> </ul>

## Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District

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			<ul style="list-style-type: none"><li>★ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B &amp; 45 (A).</li><li>○ Insurance will be taken in the name of the labourers working in the quarry</li><li>★ Workers involved in quarrying work shall be provided protective equipment's such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc...</li></ul>
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### 3.0 Analysis of Alternatives

The quarrying site is dependent on the geology and mineral deposition of the area. Hence, this project is mineral and site specific and no alternative site considered for this project.

### 3.1 Environmental Monitoring Program

Success of any environmental management programme depends upon the efficiency of the organizational set up responsible for the implementation of the programme. Regular monitoring of the various environmental parameters is also necessary to evaluate the effectiveness of the management programme. Environmental Monitoring Programme will be conducted for various environmental components as per conditions stipulated in the Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

**Table No: 1.4 Post Project Environmental Monitoring Program**

S. No	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub>	6 locations (One station in the core zone and at least one in nearby residential, area, one in the upwind, two station on the downwind direction and one in cross wind direction).	8 hours	Once in six months	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	-	Once in six months	Physico-chemical, microbiological characteristics
4	Hydrogeology	Water level in open wells in buffer zone	-	Once in 6months	Water level monitoring

## Thiru. B. Syednazar Babulal, Grey Colour Granite Quarry, Krishnagiri District

		around 1km at specific wells			devices may be used.
5	Noise	Mine Boundary, high noise generating areas within the lease and at the nearest residential area	24 hours	Monthly Once	Sound level meter
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Once in six months	Physical and Chemical characteristics

### 4.0 Project Benefits

The proponent is very much conscious of their obligations to society at large. Under plantation program, it is suggested to develop green belt further all along the boundary of mining lease area. Apart from the green belts and aesthetic plantation for eliminating fugitive emission and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community. The mining activity will create rural employment. In addition there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation of Granite to destinations, sanitation, supply of goods and services to the mine and other community services, etc...The local population will have preference to get an employment. Part of the royalty is given to local bodies by the State Govt. for the welfare and development of the village. The proponent help in socio economic development of the village by providing education facilities to children's, procuring sports equipments, welfare amenities like drinking water to school, road facilities to villages and employment opportunities to nearby villagers. CSR budget is allocated as 2.5% of the profit.

<b>CER Activity</b>	<b>Project Cost (Rs. In Lakhs)</b>	<b>CER Cost @ 2% of Project Cost (Rs. In Lakhs)</b>
1. Developing Facilities such as Water Purifier, Fan, Cot and Bed to the Jagadevipalayam Dispensary	212.04	4.2408
2. Developing facilities such as Water Purifier and Computer facilities to the Govt. School		
<b>Total Cost Allocation</b>	<b>212.04</b>	<b>4.2408</b>

### **5.0 Environmental Management Plan**

The Environmental Management Plan (EMP) must be integrated into the process of quarry planning so that the ecological balance of the area is well maintained and adverse effects are minimized. EMP includes all preventive as well as mitigation measures to minimize the impacts on the environment. The Quarry Plan is for the production of Granite without deep hole drilling and heavy blasting. Only controlled blasting is undertaken. Such limited quarrying activity is not likely to cause any impact adversely on the environment as far as pollution of air, water, land and noise is concerned.

### **6.0 Conclusion**

As discussed, it is safe to mention that the project is not likely to cause significant impacts on the ecology and environment of the area, as adequate preventive measures will be adopted to contain the pollutants within permissible limits. The total operations shall be carried out with ease & minimum risk to the workers. The proposed Environmental Management Plan will keep the area in a safe environment with negligible impact on the environment. Plantation will substantiate the impact due to the quarrying activity. Quarrying activity will help in improving the socio-economic benefits in areas like Employment, Business, communication and infrastructure development.