EXECUTIVE SUMMARY

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT OF LIMESTONE QUARRY

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

Category: B

Extent	: 4.15.8 Ha
S. F. Nos.	: 824/1B(Part), 824/2(Part), 824/3(Part),825/1B(Part), 825/2B & 825/3B
Village	: Varavanai
Taluk	: Kadavur
District	: Karur

PROPONENT

Shri.N.Krishnamoorthy

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Thiruvakavandanur, Salem – 636 005

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1. Executive Summary

The Limestone Mine of **Shri.N.Krishnamoorthy** over an extent of 4.15.8 hectare is located in S.F. No: 824/1B(Part), 824/2(Part), 824/3(Part), 825/1B(Part), 825/2B & 825/3B Varavanai Village, Kadavur Taluk of Karur District. The area is marked in the survey of India Toposheet No.58J/2. The area lies at northern latitude of 10°45'05.41" N to 10°45' 12.83"N and eastern longitude of 78°13'21.47"E to 78°13'30.22"E. The mining lease was initially granted vide Rc.No.14384/MM4/1995 dated 29.07.2005 for a period of 20 years from the execution of lease deed on 14.10.2005. The lease will expire on 13.10.2025. However as per the recent MMDR Amendment Act 2015, the validity of the Mining Lease is extended upto 13.10.2055. Now, the scheme of mining [2021-22 to 2025-26] along with PMCP was submitted to Indian Bureau of Mines for approval under Rule 12(2) & 23 (B) of MCDR, 1988 and approved by IBM vide Letter No. TN/KRR/LST/MS/1650.MDS dated 21.06.2021. As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006, the project falls under 1(a) mining of minerals, Category – B in view of Major Mineral and lease area less than 100 Ha. In view of the above the proponent submitted the online application to SEIAA/SEAC on 02.04.2018. The proposal has been placed in 107th STATE APPRAISAL COMMITTEE MEETING on 13.04.2018 and granted Terms of Reference under violation vide Lr. No. SEIAA-TN/F. No.6221/TOR-347/2018 dated 14.05.2018.

1.1 SCOPE OF THE PROJECT

The proposal for Environmental Clearance of Limestone Mine of **Shri.N.Krishnamoorthy** requires Draft EIA report, Public Consultation and Final EIA Report including Ecological damage assessment, remediation plan, natural resource augmentation and community resource augmentation as per Terms of Reference vide Lr. No. SEIAA-TN/F. No.6221/TOR-347/2018 dated 14.05.2018.

1.2 PROJECT DESCRIPTION

Table No 1. 1 Project Details

Project Details	
Proponent	Shri.N.Krishnamoorthy
Total Mine Lease Area	4.15.8 Hectares (Patta land)
Survey No.	824/1B(Part), 824/2(Part), 824/3(Part), 825/1B(Part), 825/2B & 825/3B
Site Location	Varavanai Village, Kadavur Taluk of Karur District
Geographical Co-ordinates	Latitude: 10°45'05.41" N to 10°45' 12.83"N Longitude: 78°13'21.47"E to 78°13'30.22"E
Toposheet No.	58J/2
Elevation	176m above MSL

<table>
<tr><th colspan="2">Accessibility</th></tr>
<tr><td>Nearest Habitation</td><td>175 m – South</td></tr>
<tr><td>Nearest Village</td><td>Varavanai– 175m South</td></tr>
<tr><td>Nearest Town</td><td>Karur- 25km-NE</td></tr>
<tr><td>Nearest Roadway</td><td>NH- 67– Karur to Trichy – 20 km – North
SH 199 – 8m- East
MDR 280 – Mylampatty – Palayam Road- 2.18km South
Varavanai Village Road – 95m West</td></tr>
<tr><td>Nearest Railway station</td><td>Palayam railway Station – 10.8 km Southwest</td></tr>
<tr><td>Nearest Airport</td><td>Trichy Airport – 53 km – East</td></tr>
<tr><th colspan="2">Environmental Sensitiveness</th></tr>
<tr><td>Interstate Boundary</td><td>Tamil Nadu – Kerala Interstate Boundary - 119 Km SW side</td></tr>
<tr><td>Coastal Zone</td><td>Bay of Bengal – 128 m (SE)
Hence the area does not attract the C.R.Z. Notification, 1991.</td></tr>
<tr><td>Reserve Forest</td><td>Vaiyamalai Reserved forest – 8.4 Km – SE.
But the proposed project does not cause any harm to the forest products.</td></tr>
<tr><td>Wildlife sanctuary</td><td>No wildlife sanctuary is located within 10km radius.
Hence the area does not attract the Wildlife Protection Act, 1972.</td></tr>
<tr><td>Water bodies</td><td>Karunakulam – 2.10km – NW
Punjapattikulam – 9.33 km – NE
Tharagampattikulam – 3.9 km – S
P.Udayapattikulam – 3.3 km – NE
Ottakulam – 4.9 km – N
Poovaeekulam – 4.67 km – NW
Mavathur Kulam – 6.5 km - S</td></tr>
<tr><td>Habitations</td><td>
<table>
<tr><th>Sno</th><th>Village Name</th><th>Total population as per 2011 census</th></tr>
<tr><td>1</td><td>Varavanai</td><td rowspan="4">4985</td></tr>
<tr><td>2</td><td>Sundukulipet</td></tr>
<tr><td>3</td><td>Kulathur</td></tr>
<tr><td>4</td><td>Mamarathupatti</td></tr>
<tr><td>5</td><td>Mylampatti</td><td rowspan="2">5275</td></tr>
<tr><td>6</td><td>Chinthamanipatti</td></tr>
</table>
</td></tr>
</table>

	7	Vellapatti	3854
	8	Sinnandipatti	
	9	Tharagampatti	
	10	Thennilai	4323
		Total	18437
Defense Installations	Nil within 10km radius		
Quarries around 500m radius (AD Letter furnished)	Three numbers of quarries with 6.5 Ha is found within 500m radius from the periphery of the lease boundary. AD Letter. No: Roc.No101/Mines/2017 dated 30.01.2017		
Seismic Zone	Zone II, Low damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002.		
Mining Details			
Method of Mining	Manual Method of Mining using Jack hammer drilling and blasting		
Geological resources	707901 MT (100%) & 424741 MT(60% Recovery)		
Mineable reserves	497498 MT (100%) & 298499 MT(60% Recovery)		
Production (60%)	Average Production: 35360.2 MT/annum		
Topsoil	17685 MT for next plan period		
Side burden	97368 MT for next plan period		
Limestone Rejects @ 40%	117867 MT for next five years		
Depth of Mining	19 m bgl		
Water Table	40 m bgl during rainy season and 50m bgl during summer season		
Overall Pit Slope	45°		
Period of Lease	50 Years as per the recent MMDR Amendment Act 2015		
Project Cost	Rs. 10 Lakhs		
EMP Cost	Rs. 1.05 Lakhs		

1.3 Description of the environment

1.3.1 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 October 1st, 2019 - December 31st, 2019 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
Meteorology (October1st – December 31st, 2019)		
Rainfall (Avg.)	745 mm (yearly)	--
Temperature (Avg.)	22-35°C (Study period)	--
Wind speed	3.05 m/s	--
Wind Direction	From N, SW, S and NE	
Ambient Air Quality (NAAQS)		
PM_{10}	39-43 µg/m^3	100 µg/m^3
$PM_{2.5}$	19-24 µg/m^3	60 µg/m^3
SO_2	7-8 µg/m^3	80 µg/m^3
NO_x	11-12 µg /m^3	80 µg/m^3
Noise Level (CPCB Standards)		
Day time (6:00 am - 10:00 pm)	Core zone – 37.9 – 41.1 dB (A) Buffer zone – 37.7-39.1 dB (A)	**Industrial Area** Day Time - 75 dB (A) **Residential Area** Day Time – 55 dB (A)
Night time (10:00pm - 06:00 am)	Core zone – 32.6 – 34.1 dB (A) Buffer zone – 34.8-36.2 dB(A)	**Industrial Area** Night Time – 70 dB(A) **Residential Area** Night Time – 45 dB (A)
Water Quality IS 10500:2012 (Desirable limits)		
pH	7.21– 7.71	6.5 to 8.5
TDS	294 - 436 mg/l	500 mg/l
$THCaCO_3$	233-331 mg/l	200 mg/l
Soil Quality		
pH	7.87 – 8.81	Neutral to slightly acidic
Bulk density	1.37-1.42 g/cc	Favorable physical condition for plant growth
Hydro Geology		
Depth of Mining	19m bgl	
Water Table	40 m bgl during rainy season and 50m bgl during summer season	

1.3(A) Year Wise Production Details

S.No	Year of Production	Production proposed in Mining period in MT	Actual production achieved in MT
Mining Plan			
1	2006-2007	1318	266
2	2007-2008	1318	706
3	2008-2009	1318	680
4	2009-2010	1318	425
5	2010-2011	1318	1175
6	2011-2012	-	3202
Total		**6590**	**6454**
	scheme of mining		
7	2011-2012	-	3202
8	2012-2013	8663	5229
9	2013-2014	22241	5437
10	2014-2015	63398	4480
11	2015-2016	86668	4840
Total		**180970**	**23188**
	Second scheme of mining		
12	2016-2017	23231	6658.550
13	2017-2018	38667	-
14	2018-2019	42333	-
15	2019-2020	40820	-
15	2020-2021	42247	-
	Total	**187298**	**6658.550**
16	2021-22	35555	-
17	2022-23	35424	-
18	2023-24	35064	-
19	2024-25	35505	-
20	2025-26	35253	-
Total		**176801**	-

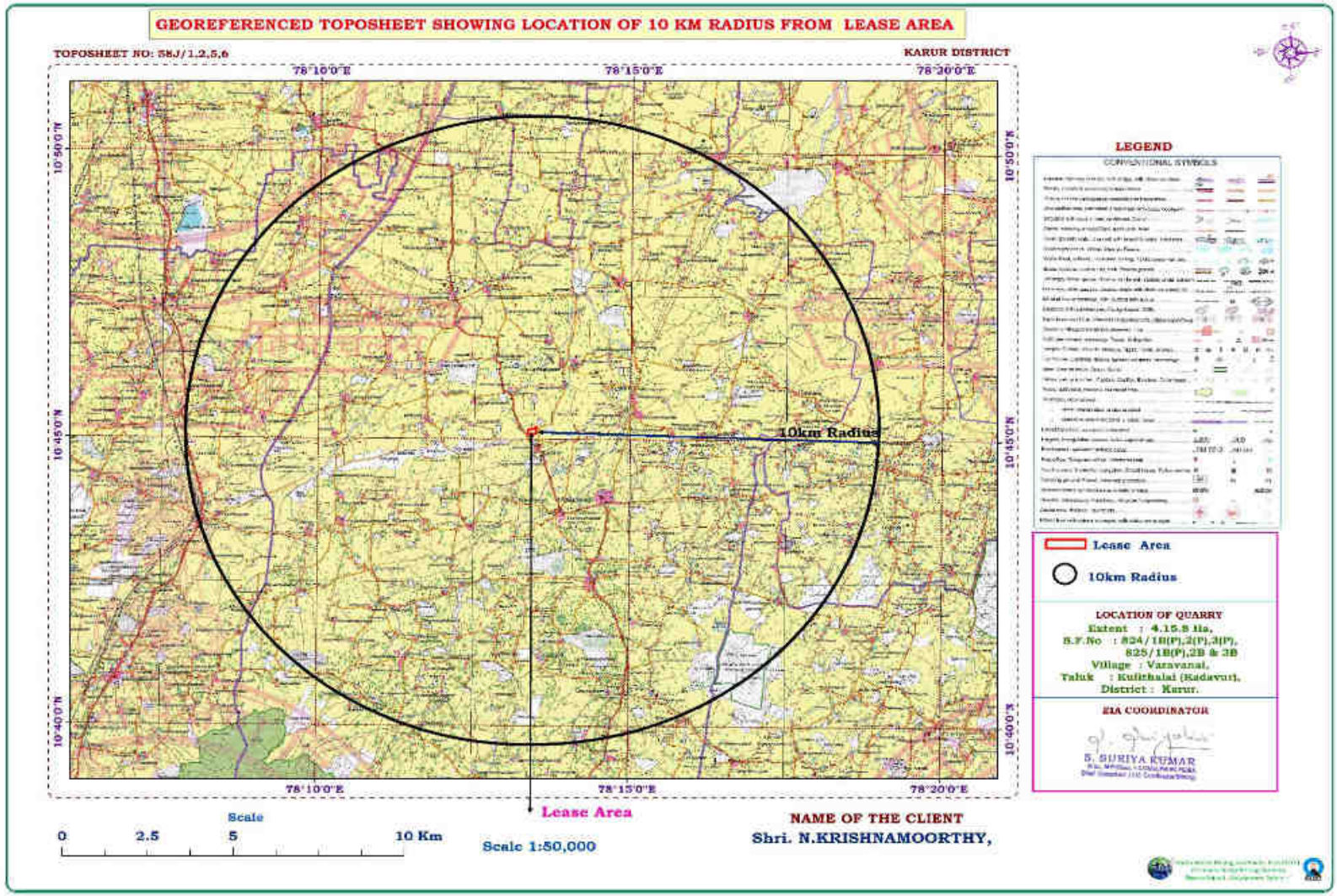

Fig No: 1 Geo Referenced Toposheet showing 10km radius around lease area

Fig No: 2 Photos showing general view of the Varavanai limestone mine

1.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

1.4.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by adopting open cast Manual Method of Mining which involves Jack Hammer drilling and blasting, excavation, loading and transportation.

AERMOD was used for prediction of impact of PM_{10} during conditions i) Unloading and transportation of Limestone by trucks on Haul roads ii) Blasting by using area source model to predict GLC of PM_{10} during these conditions. Total predicted 24-h maximum GLC of PM_{10} at project site for scenario 1 i.e. loading-unloading, transportation & open pit and scenario 2 i.e. Blasting 72/m^3 and 56 µg/m^3 respectively occurred at the project site after superposition of base-line value 43µg/m^3 over the incremental GLC 29 µg/$m^3$and 13 µg/m^3 respectively due to combined impact of loading, unloading, open pit 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.

1.4.2 Noise Environment

Noise pollution poses a major health risk to the mine workers. The sources of noise in the existing Limestone Mines 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 28kg is well below the Peak Particle Velocity below 5mm/s. The proponent will be advised to use the explosives less than 28kg per blast. 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.

1.4.3 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious impact occurs in 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 groundwater. But this limestone 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. The water sample from all locations has high Total Hardness in the range of 233mg/l, 310 mg/l and 331mg/l and all other Physico Chemical parameters are within the acceptable limits. Then the water sample from Core zone and Kurunikulathupatti village contain Total Coliform and E.Coli. Based on the Water Quality Index calculated, water quality in all locations is excellent which is suitable for the drinking purpose. Since the water sample from core zone and Kurunikulathupatti contain Total Coliform and E.Coli, boiling the water is better for consumption.

1.4.4 Soil Environment

The top soil generation for the next five years is 17685 MT. It will be stored and used for afforestation purposes.

1.4.5 Waste Dump

Overburden generated for the next five years will be 17685MT and side burden generated for the next five years will be 97368 MT. The proposed rate of production of Limestone is about 176801MT for five years at the rate of 60% recovery up to permissible depth. The rejects of 40% is about 117867 MT. All the overburden, side burden and rejects will be dumped in West and southeast of the lease area.

1.4.6 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.

1.4.7 Land Environment

The limestone mines 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 around the core zone is poor in agriculture. Insufficient water in the villages may be the reason for poor agriculture. At the end of the mine, the mined out pit will be used to store rain water and it will increase the ground water table indirectly. This process greatly induces the agriculture development in the nearby villages.

1.4.8 Socio Economic Environment

The mining 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 mining activities.

Table 1.3 Environmental Management Plan

S.No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	✶ Dust extractor or wet drilling to be followed to control dust at source of emission. ✶ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator
		Blasting	✶ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution
		Loading	✶ Water sprinkling be done before loading by making it moist
		Transportation	✶ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste ✶ Overloading will be prevented ✶ Trucks/Dumpers covered by tarpaulin covers
		DG Sets	✶ DG sets will be used only during power failure ✶ Adequate stack height for DG sets will be provided as per CPCB norms
		General measures	✶ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust. ✶ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, gogglesas per the MMR, 1961 amendments and circulars of DGMS. ✶ 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 carried out as per the Factories Act ✶ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.
2	Water Environment	Surface water	✶ Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
		Ground water	✶ The mining activity will not intersect the ground water table. ✶ Desilting will be carried out before and immediately after the monsoon season
		Storm water	✶ Pit will be used for Storage of rainwater ✶ 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. ✶ The proponent will collect and judicially utilize the rainwater as part of rain water harvesting
		General measures	✶ Regular monitoring and analyzing the quality of water
3	Noise	Drilling	✶ Limiting time exposure of workers to excessive noise

	Environment	Blasting	✶ Carrying out blasting only during day time and not on cloudy days ✶ Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes. ✶ Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
		Transportation	✶ Proper and regular maintenance of vehicles, machinery and other equipments. ✶ The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. ✶ Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles. ✶ Adequate silencers will be provided in all the diesel engines of vehicles. ✶ Minimum use of horns and speed limit of 10 km/hr in the village area. ✶ It will be ensured that all transportation vehicles carry a valid PUC Certificates
		General measures	✶ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas

			✶ Provision of Quiet areas, where employees can get relief from workplace noise. ✶ The development of green belts around the periphery of the mine to attenuate noise. ✶ Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	✶ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios. ✶ Milli second detonators shall be used preferably 25–50ms per delay to control vibrations. ✶ 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. ✶ 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.
5	Soil Environment	Topsoil	✶ Humus top soil shall be preserved for reuse in afforestation and agriculture. ✶ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises ✶ Garland drains will be provided around the mine and dumps to arrest any soil from the mine 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 of the benches
6	Waste Dump	Stabilization of Dumps	✶ 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 ✶ 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.
7	Plantation	Mine lease boundary and waste dump	✶ Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise ✶ Stabilization of Dump with plantation ✶ It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation. ✶ The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		✶ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil. ✶ Provision of Garland drainage around the dumps ✶ Fast growing trees and other native shrubs would be

			planted to stabilize the reclaimed land ✶ Appropriate measures will be taken for Green belt development. ✶ 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.
9	Socio Economic		✶ Good maintenance practices will be adopted for machinery and equipment, which will help to avert potential noise problems. ✶ Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines. ✶ Drilling, blasting etc at specified location will be followed with proper schedule. ✶ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone. ✶ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication. ✶ 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). ✶ As a part of CSR activities, community welfare activities will

			be undertaken by the proponent through local Panchayat which leads to socio economic development
10	Occupational Health		✶ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955 ✶ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A). ✶ Insurance will be taken in the name of the labourers working in the mines ✶ Workers involved in mining work shall be provided protective equipment's such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc…

1.5 Analysis of Alternatives

The Mining 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.

1.6 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 – $PM_{2.5}$, PM_{10}, SO_2 and NO_x	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 around 1km at	-	Once in 6months	Water level monitoring devices may be

		specific wells			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

1.7 Project Benefits

The proponent is very much conscious of their obligations to society at large. Under plantation programme, it is suggested to develop green belt further all along the boundary of the 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 Limestone 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 will help in socio economic development of the village by providing educational facilities to children's, procuring sports equipments, welfare amenities like drinking water to school; road and medical facilities to villages and employment opportunities to nearby villagers. CSR budget is allocated as 2.5% of the profit.

1.8 Environmental Management Plan

The Environmental Management Plan (EMP) must be integrated into the process of mine 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 mine Plan is for the

production of Limestone without deep hole drilling and heavy blasting. Only controlled blasting is undertaken. Such limited mining activity is not likely to cause any impact adversely on the environment as far as pollution of air, water, land and noise is concerned.

1.9 Conclusion

As discussed, it is safe to mention that the project is not likely to cause significant impact 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 mining activity. Mining activity will help in improving the socio–economic benefits in areas like employment, communication and infrastructure development etc.