



### **Government of India** Ministry of Environment, Forest and Climate Change (Issued by the State Environment Impact Assessment Authority(SEIAA), Tamil Nadu)

To,

The Managing Director M/S. TAMIL NADU MINERALS LIMITED

M/s. Tamil Nadu Minerals Limited (Government of Tamil Nadu undertaking) 31 Kamarajar Salai, Chepauk, Chennai, Tamil Nadu - 600005 -600005

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/59723/2018 dated 08 Jan 2021. The particulars of the environmental clearance granted to the project are as below.

1. EC Identification No. EC24B001TN174512

2. File No. 4045/2015

3. **Project Type**  New

4. Category

6.

5. Project/Activity including

Name of Project

1(a) Mining of minerals

Schedule No.

SENGUNAM COLOR GRANITE QUARRY

7. Name of Company/Organization M/S. TAMIL NADU MINERALS LIMITED

8. **Location of Project**  Tamil Nadu

9. **TOR Date**  20 Feb 2020

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 04/06/2024

(e-signed) A R Rahul Nadh IAS **Member Secretary** SEIAA - (Tamil Nadu)



Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

This is a computer generated cover page.



### THIRU. A.R. RAHUL NADH, I.A.S. MEMBER SECRETARY

### STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU

3<sup>rd</sup> Floor, Panagal Maaligai, No.1, Jeenis Road, Saidapet, Chennai - 600 015. Phone No. 044-24359973 Fax No. 044-24359975

### ENVIRONMENTAL CLEARANCE

### Lr.No.SEIAA-TN/F.No.4045/2015/1(a)/EC.No:6335/2024, dated:01.04.2024

To,

M/s. Tamil Nadu Minerals Limited No. 31, Kamarajar Salai, "TWAD House" Chepauk, Post Box No. 2961, Chennai - 600 005.

#### Sir/Madam,

Sub: SEIAA, TN - Proposed Colour Granite Quarry lease over an extent of 22.88.5Ha at S.F.No. 55A/1B1 (Part) at Sengunam Village, Polur Taluk, Tiruvannamalai District, Tamil Nadu by M/s. Tamil Nadu Minerals Limited - Environmental Clearance (under violation) -Issued - Regarding.

- Ref:
- MoEF & CC Notification S.O.804(E) dated 14.03.2017
- 2. MoEF & CC Notification S.O.1030(E) dated 08.03.2018
- ToR (under violation) issued by SEIAA-TN vide Lr. No. SEIAA-TN/F. No.4045/2018/TOR-609/2019 dated 20.02.2019.
- 4. Online Application for EC vide -SIA/TN/MIN/59723/2018 dated:08.01.2021.
- 5. Proponent submitted EIA report to SEIAA-TN on 13.01.2021.
- 6. Minutes of the 218th SEAC meeting held on 09.07.2021.
- 7. Site Visted by the Sub-committee Dated:04.09.2021.
- 8. Minutes of the 234th SEAC meeting held on 22.09.2021.
- 9. Public Hearing conducted by TNPCB on 12.04.2022.

MEMBER SECRETARY SEIAA-TN

Page 1 of 53

- 10. Site Visted by the Sub-committee Dated:25.02.2023.
- 11. Minutes of the 380th SEAC meeting held on 17.05.2023.
- 12. Minutes of the 627th SEIAA meeting held on 06.06.2023.
- 13. Reply by the Project Proponent dated: 02.04.2024.
- 14. Minutes of the 707th SEIAA meeting held on 01.04.2024.

\*\*\*\*\*

This has reference to your application for Environmental Clearance to SEIAA-TN under violation category dated:13.01.2021 and along with subsequent documents & EIA report submitted for the aforesaid project to the State Level Environment Impact Assessment Authority, Tamil Nadu seeking Environmental Clearance under the Environment Impact Assessment Notification, 2006.

Sl.	Details of the Proposal	Data Furnished
No 1.	Name of the Owner/1 him	M/s. Tamil Nadu Minerals Limited, No. 31, Kamarajar Salai, "TWAD House" Chepauk, Post Box No. 2961, Chennai - 600 005.
2.	Type of quarrying	Colour Granite
3.	S.F No. of the quarry site	55A/1B1(P)
4.	Village in which situated	Sengunam
5.	Taluk in which situated	Polur
6.	District in which situated	Tiruvannamalai
7.	Extent of quarry (in ha.)	22.88.5Ha
8.	Latitude & Longitude of all corners of the quarry site	12°32'24.29"N to 12°32'41.29"N 79°08'47.42"E to 79°09'05.80"E
9.	Topo Sheet No.	57 P/2&3
10.		Open cast- Semi- mechanized Method
11.	15.50	5 Years
12.	Production (Quantity in m <sup>3</sup> )	The Lease period is for 30 years (17.10.2005 to 16.10.2025). The mining plan is for the period of five years the production should not exceed

		40,692m <sup>3</sup> of ROM Multi colour granite,
		10,173m <sup>3</sup> Recovery of Granite @ 25% &
		30,519m3 of Granite waste @ 75% with an
		ultimate depth of mining is 30m.
13.	Depth of mining	30m
14.	Depth of water table	14 BGL
15.	Man Power requirement	35 Employees
16.	Water requirement:	1.5 KLD
	Drinking water	0.5 KLD
	2. Utilized water	0.3 KLD
	3. Dust suppression	0.3 KLD
	4. Green belt	0.4 KLD
17.	Power requirement	TNEB
		Diesel Generator 125kva
18.	Precise area communication approved by the Department of G&M.	19664/MME1/2004-2, Indus, dated.11.05.2005
19.	Mining Plan approved by the Department of G&M.	Letter: 4012/MM4/2020, dated.09.12.2020 (RSoM-III)
22.	500m Cluster Letter approved by the Deputy Director, Department of G&M.	170/Kanimam/2017, dated.22.03.2017
23.	Project Cost (excluding EMP)	Rs.1.00 crore
24.	EMP cost	Rs.12.5 lakhs
25.	ToR details	Lr. No. SEIAA-TN/F. No.4045/2018/
		TOR/609/2019 dated 20.02.2019.
26.	Public hearing details	Public hearing was conducted on 12.04.2022.
27.	EIA report submitted on	13.01.2021
28.	CER cost	Rs.10 lakhs

### 29. Validity:

This Environmental Clearance is accorded for the quantity of 40,692m³ of ROM Multi colour granite, 10,173m³ Recovery of Granite @ 25% & 30,519m³ of Granite waste @ 75%

MEMBER SECRETARY SEIAA-TN

Page 3 of 53

up to depth of 30m and The Annual peak production shall not exceed 8,161m³ of ROM, 2,040m³ of Granite & 6,120m³ of Granite waste.

The Environmental Clearance issued is valid as per the approved mine plan period and as per MoEF&CC's notification S.O.1533(E) dated 14.09,2006 and S.O. 1807(E) dated 12.04.2022.

### AFFIDAVIT FURNISHED BY THE PROPONENT

The Proponent has furnished affidavit in stamp paper attested by the Notary stating that I, Dr. E.Ganesan, represents M/s. Tamil Nadu Minerals Limited, as Deputy Manager (ML) and authorized signatory of the project solemnly declare and sincerely affirm that:.

We have applied for getting Environment Clearance to SEIAA, Tamil Nadu for Sengunam Color Granite Quarry over an extent of 22.88.5Ha of Govt. poramboke land in SF No. 55A/1B1(P) of Sengunam Village, Polur Taluk, Tiruvannamalai District, Tamil Nadu. I swear to state and confirm that within 10Km area of the mine site. We have applied for environmental clearance none of the following is situated.

- a. Protected areas notified under the Wildlife (Protection) Act,1972
- b. Critically polluted areas as identified by CPCB constituted under Water (Prevention and Control of Pollution) Act,1974.
- c. Eco Sensitive areas as notified
- d. Interstate boundaries and international boundaries within 5Km radius from the boundary of the proposed site.
- 1. TAMIN will complete the Corporate Environment Responsibility (CER) activities as directed by SEAC/SEIAA as per MoEF&CC, OM dated 20.10.2020. All the activities proposed by Project Proponent or presecribed by the EAC or SEAC, as the case may be, shall be part of the Environment Management Plan. Accordingly, necessary Environment Management Plan will be submitted to TNPCB and the same will be implemented during the course of mining operation as recurring cost.
- There will not be any hindrance or disturbance to the people living on enroute / nearby my mine site while transporting the mined out material and due to mining / mining activities.

- No approved habitations as per Rule 36(1) of Tamil Nadu Minor Mineral Concession Rules, 1959 located within 500 meters radius from the periphery of my mine.
- 4. We swear that afforestation will be carried out during the course of mining operation and maintained.
- 5. The required insurance will be taken in the name of the labourers working in my mine site.
- 6. We will not engage any child labour in my mine site.
- 7. All type of Safety / protective equipments will be provided to all the labourers working in my mine.
- No approved permanent structures, temples etc are located within 500m radius from the periphery of my mine.
- 9. The mining activity will be carried out only after obtaining environmental clearance.

We ensure to do all the Social and Environmental commitment as mentioned in the Mining Plan to the best of my knowledge.

### Appraisal by SEAC:-

Proposed Colour Granite Quarry lease over an extent of 22.88.5Ha at S.F.No. 55A/1B1 (Part) at Sengunam Village, Polur Taluk, Tiruvannamalai District, Tamil Nadu by M/s. Tamil Nadu Minerals Limited – For Environmental Clearance. (SIA/TN/MIN/59723/2019, dated: 08.01.2021)

#### The SEAC noted the following:

- The Proponent, M/s. Tamil Nadu Minerals Limited has applied seeking Environmental Clearance for the proposed Colour Granite Quarry lease over an extent of 22.88.5 Ha at S.F.No. 55A/1B1 (Part) at Sengunam Village, Polur Taluk, Tiruvannamalai District, Tamil Nadu.
- 2. The project/activity is covered under Category "B1" of Item 1(a) "Mining and Mineral Projects" of the Schedule to the EIA Notification, 2006.
- 3. As per the mining plan, the lease period is for 30 years. Production for Five years shall not exceed 40,692m³ of ROM, 10,173 m³ of Recovery @25% & 30,519 m³ of Granite rejects with an ultimate depth of mining 30m AGL. The annual peak

MEMBER SECRETARY SEIAA-TN

Page 5 of 53

production is 8,161m<sup>3</sup> of ROM (4<sup>th</sup> year), 2,040m<sup>3</sup> of Recovery @25% (4th year) & 6,120m<sup>3</sup> of Granite rejects (4<sup>th</sup> year).

- ToR Issued vide.Lr. No. SEIAA-TN/F. No.4045/2018/TOR-609/2019 dated 20.02.2019.
- 5. Public hearing was conducted on 12.04.2022.

Earlier, the proposal was placed in 218th meeting of SEAC held on 09.07.2021.

Based on the presentation made and the documents furnished by the Project proponent, SEAC directed to submit the following additional particulars

- To revise assessment of Ecological damage, remediation plan and natural & community
  resource augmentation plan by the accredited consultant and also with collection and
  analysis of data for the assessment of ecological damage, preparation of remediation
  plan and natural & community resource augmentation plan to be done by an
  Environmental laboratory duly notified under the Environment (Protection) Act, 1986,
  accredited by NABET or a laboratory of Council of Scientific and Industrial Research
  Institutions working in the field of Environment.
- To furnish details of measures taken regard to control of noise, fugitive emission and safety of wild animals and for the grievances mentioned during public hearing as per the public hearing minutes.
- The Proponent shall carry out the impact study due to mining on the environment in terms of ambient air quality considering vehicular movement & noise level and the Environment Management plan should be prepared, accordingly.
- 4. To furnish NOC from District Forest Officer, Tiruvannamalai District with regard to the existence/Non - existence of wild animals& birds as mentioned during public hearing by the general public in the proposed mining area.
- The proponent shall furnish photographs of adequate fencing, green belt along the periphery under Miyawaki method with native species including re-plantation of existing trees as per the approved mining plan.
- The proponent shall furnish details of silica/PM<sub>2.5</sub> & PM<sub>10</sub> exposure survey conducted for the nearby residents & employees.

Further, SEAC after detailed deliberations decided to make an onsite inspection to assess the present environmental settings of the project site by the sub-committee to be constituted

by the SEAC. On receipt of the aforesaid details, SEAC would further deliberate on this project and decide the further course of action.

In this connection, the site was inspected by the sub-committee on 04.09.2021(Saturday) and submitted the inspection report to the SEAC for further course of action.

### **OBSERVATIONS OF THE SUB-COMMITTEE**

- The quarry field is mountain and has its own ecology of Grass and thousands of huge rocks as shown in the photo
- During the visit, the mining operation is not found
- There are no houses nearby or within the radius of 300 m
- Many boulders brought from the top of the mountain to foot of the hills and making cut as per the size of the stone are rejected due to minor cracks and colour variation
- The native grass and native trees Pungan and Neem are not disturbed due to the quarry operation
- The proponent also planted some trees at foot of the hills which are well grown now.
- There is no human habitation either as agriculturist or as local residents.
- The committee has not found any cattle grazing nearby the quarry field.

### RECOMMENDATIONS OF THE SUB COMMITTEE

After the inspection of the field on 04-09-2021 the subcommittee furnish the following recommendation

- The quarry operation is around 22.88.5 Ha only in the mountain area. The Natural stones
  from the mountain is brought to foot and making cut for required size. So the damage on
  the ecosystem is minimal.
- Since there is no human activities nearby the hills, there shall not be any severe ecological
  damage in and around the field. But the proponent shall furnish the study of Ecological
  damage / status report.
- The proponent shall be given EC and shall be allowed to operate the Quarry to maximize the good quality of stone.
- Directed to get the NOC from the forest office about the non-existence of wild animals.

MEMBER SECRETARY SEIAA-TN

Page 7 of 53

- Few houses are seen at the entrance of the Ghat route, which is more than 1.50 km (aerial
  route) away from the quarry site. While interacting with them regarding the effects of the
  quarry on settlement they said that they are not at all affected because of this project.
- Since the quarry operation is partly in the hill and foot of the hills. So there is no need of fencing the Quarry area.
- There is no cutting of trees found and the native ecology itself has good numbers of native trees, no need of green belt promotion.

In this connection, the proposal was again placed for appraisal in 234<sup>th</sup> meeting of SEAC held on 22.09.2021.

In view of the above, SEAC after detailed deliberations directed the proponent to furnish NOC from DFO regarding movement of wild animals/birds for the proposed mining activity and to conduct and submit report on exposure survey for parameters such as silica/ $PM_{2.5}$  &  $PM_{10}$  to the nearby residents & employees.

The State Expert Appraisal Committee (SEAC) Tamil Nadu constituted a subcommittee vide its Lr.No. SEAC-TN/TAMIN/Site Inspection/2023 dated 17.02.2023 to inspect and study the field condition for the proposal seeking EC. The Committee comprises of Thiru K.Kumar, Member, SEAC and Thiru.Velazhagan, Member, SEAC.

As per the above letter the sub-committee visited the site on 25.02.2023.

The Sub Committee report has placed in 380th SEAC meeting held on 17.05.2023.

Now the proposal was placed in 380th meeting of SEAC held on 17.05.2023.

The observations made in the field and recommendation derived on the basis of the field visit are as below:

# OBSERVATIONS OF THE SEAC SUB-COMMITTEE DURING THE PROJECT SITE INSPECTION

- Sub Committee has visited Sengunam Granite Quarry during the Inspection to have over all mining scenario in the Region.
- The Lease over an extent of 22.88.5Ha is being operated in the Sengunam. It is wire fenced in all sides.
- 3. The settlements/habitations are observed in 900m from Lease boundary in eastern sides.

- 4. There was no mining activities in the quarry during the site visit.
- Rain water accumulated in the Quarry and atleast two bottom most benches are covered in water, as noticed.
- During Violation Period, environmentally friendly Mining activities, involving the Drilling & highly mild controlled Blasting and Diamond Wire Saw cutting, were carried out in the Lease.
- There was no Top Soil and Over Burden generation during the Period and thus only
  the Granite Rejects produced from the quarry are formed as waste dump within the
  Lease area.
- 8. No Ground Water-table intersection as noticed in the existing benches of the quarry.
- Dedicated Haul Roads from Quarry to Panchayat/village road and from Panchayat
  Road to the SH exists and very minimal transportation through village road (during
  the Violation Period) was carried out (maximum of 2 load trucks).
- Green Belt, was developed along the periphery of quarry pit including in Safety Barriers.
- 11. The Water tanker trucks possessing the water sprinklers were deployed along the Haul Road during the violation period and is in the working condition.
- 12. Garland Drains are partially provided along the periphery but its maintenance has to be improved.
- 13. Green belt developed along the boundaries is infested with Procopius juliflora which are to be eradicated and additional green belt shall be developed. So far the PP has raised plantation and further directed to make more plantation all along the boundary of lease hold area.
- 14. M/s. TAMIN is carrying out various CSR activities in the Region as per CSR Policy of the Company, as reported.

### STATUS OF MINING OPERATION

The mining activities were stopped on 28.04.2017 and there was no production from this Mine since then.

### MINING PLAN APPROVALS

The Director, DMG, Chennai has accorded the latest Scheme of mining for the period from form 2020-2025 Lr.No.4012/MM4/2020, dt. 09.12.2020.

PRESENT CONDITION OF THE MINES PIT AND DUMP

MEMBER SECRETARY SEIAA-TN

Page 9 of 53

> The physical nature of the Black Granite deposit:

• Strike length (m)

352 m

• Width (m)

55m

Strike direction

**NW-SE** 

• Dip

Almost vertical

• Depth proved (m)

More than 30 m as it Dolerite rock

formation

### > Pit Dimension

+ C/9 1	Length	Width	Depth
Description	(m)	(m)	(m)
Present pit size	240	60	8

➤ Waste Dump details: The dumps have been maintained at an average height of 5m and the angle of slope of dumps at 45° from horizontal. The waste dump has been earmarked in the Scheme of Mining plate Nos 4 & 5.

### STATUTORY MANPOWER (during the violation period)

Sl. No.	Name of the Post Occupied	Statutory Requirement as per MMR 1961	Manpower available during the Mining Operations
1.	Manager (Second Class Competency Certificate)		ON 1
2.	Mines Foreman	1	1
3.	Mine Mate (Will act as Blaster)	1	1

### GREEN BELT DEVELOPMENT AND PLANTATION

Since the lease area is Granite terrain TAMIN has propsed to plant predomenetly 100 native species during the Third Scheme of mining period .

#### PENALTY FOR VIOLATION

TAMIN has remitted the amount Rs.3,17,19,289/- to the Department of Geology and Mining towards 100% cost value of the mined mineral against the permitted EC quantity.

Accordingly, the Director of Geology and Mining has issued 'No Objection Certificate' to TAMIN for getting EC vide Letter Rc. No.265/MM4/2020, dt. 08.07.2020.

Tamil Nadu Pollution Control Board has filed the case under Section 19 of Environment (Protection) Act, 1986 in Hon'ble Judicial Magistrate No.1 Dharmapuri vide Calendar Case No.305/2022. Judgment pronounced.

Based on the inspection of the project site and other documents furnished by project proponent, M/s. TAMIN, SEAC Sub-Committee recommends the following Estimation made towards the Ecological remediation cost, Natural resources augmentation cost and Community resources augmentation cost under violation category for the concerned lease of Sengunam Colour Granite Mine of TAMIN, Sengunam, Polur Taluk, Tiruvannamalai District following the SEAC Guidelines after discussing the following related legal provisions made from time to time by various agencies/courts.

## 1. Extracts of the Supreme Court of India Common Cause vs Union Of India . on 2 August, 2017 WRIT PETITION (CIVIL) NO. 114 of 2014

".....In our opinion, as far as the first question is concerned, a reading of EIA 1994 read with the 1st Note implies that the base year would need to be the immediately preceding year that is 1993-94. This is obvious from the opening sentence of the 1st Note, that is, "A project proponent is required to seek environmental clearance for a proposed expansion/modernization activity if the resultant pollution load is to exceed the existing levels." (Emphasis supplied). In its report, the CEC has taken 1993-94 as the base year and we see no error in this. Even the MoEF in its circular dated 28<sup>th</sup> October, 2004 stated with regard to the expansion in production: "If the annual production of any year from 1994-95 onwards exceeds the annual production of 1993-94 or its preceding years (even if approved by IBM), it would constitute expansion." If that expansion results in an increase in the pollution load over the existing levels, then an EC is mandated...."

"....The contention of learned counsel for the mining lease holders that EIA 1994 was rather vague, uncertain and ambiguous cannot be accepted. In our opinion, on a composite reading

MEMBER SECRETARY SEIAA-TN

Page 11 of 53

of EIA 1994, it is clear that: (i) A no objection certificate from the SPCB was necessary for continuing mining operations; (ii) An expansion or modernization activity required an EC unless the pollution load was not exceeded beyond the existing levels; (iii) The base year for determining the pollution load and therefore the proposed expansion would be with reference to 1993-94; (iv) Whether an expansion or modernization would lead to exceeding the existing pollution load or not would require a certificate from the SPCB which could be reviewed by the IAA; (v) New projects require an EC; and (vi) Existing projects do not require an EC unless there is an expansion or modernization for the duration (if any) of the validity of the certificate from the SPCB. We need not say anything more on this subject since the CEC has proceeded to discuss the issue of mining in excess of the EC or in excess of the mining plan only W.P. (C) Nos. 114/2014 etc. from the year 2000-01 onwards. The prior period may, therefore, be ignored and it is the period from 2000-01 onwards which is actually relevant for the present discussion....."

"....All that we need to say on this subject is that there is no confusion, vagueness or uncertainty in the application of EIA 1994 and EIA 2006 insofar as mining operations were commenced on mining leases before 27th January, 1994 (or even thereafter). Post EIA 2006, every mining lease holder having a lease area of 5 hectares or more and undertaking mining operations in respect of major minerals (with which we are concerned) was obliged to get an EC in terms of EIA 2006...."

"....In a subsequent letter dated 12th December, 2011 addressed to the Chief Secretary in the Government of Orissa the said Ministry of Mines noted that there were violations of the actual production limit laid down in the mining plan and that the State Government had finally taken steps to curb illegal mining in respect of over-production of minerals. There was a reference to suggest (and we take it to be so) that 20% deviation from the mining plan (in terms of over-production) would be reasonable and permissible. However, it appears from a reading of the communication that illegal mining was going on beyond the 20% deviation limit and that appropriate steps were needed to curb these violations. Learned counsel for the petitioners submitted that such egregious violations must be firmly dealt with by cancellation or termination of the mining lease and a soft approach is not called for...."

MEMBER SECRETARY SEIAA-TN

Page 13 of 56

".....In this context, it is worth noting that a High Level Committee (called the Hoda Committee) on the National Mineral Policy noted in its Report dated 22nd December, 2006 in paragraph 3.47 as follows:

"3.47 An EMP [Environment Management Plan] has to be prepared under the MCDR and got approved by IBM. However, this EMP is not acceptable to the MoEF. The miner has to prepare two EMPs separately — one for IBM and another for MoEF. The Committee suggests that IBM and MoEF should prepare guidelines for a composite EMP so that IBM can approve the same in consultation with MoEF's field offices. This will eliminate anomalous situations where increase of even a few tonnes in production requires project authorities to get a fresh EMP approved from the MoEF although the IBM allows a grace of +10% per cent, keeping in view the fluctuations in the market situation and process complexities. If a single EMP is accepted in principle such anomalies can be resolved in advance. The Committee feels the MoEF should also have a cushion of +10% per cent in production while giving EIA clearance."

"....The above passage indicates that the permissible variation in production as per the Indian Bureau of Mines is +10% but according to the letter dated 12th December, 2011 issued by the Ministry of Mines, the reasonable variation limit could be +20%...."

"....In terms of Rule 22(5) of the MCR a mining plan shall incorporate a tentative scheme of mining and annual program and plan for excavation from year to year for five years. At best, there could be a variation in extraction of 20% in each given year but this would be subject to the overall mining plan limit of a variation of 20% over five years. What this means is that a mining lease holder cannot extract the five year quantity (with a variation of 20%) in one or two years only. The extraction has to be staggered and continued over a period of five years. If any other interpretation is given, it would lead to an absurd situation where a mining lease holder could extract the entire permissible quantity under the mining plan plus 20% in one year and extract miniscule amounts over the remaining four years, and this could be done without any reference to the EC. The submission of learned counsel in this regard simply cannot be accepted...."

".....A submission made by the mining lease holders was that the maximum production in any year up to 1993-94 should be considered as the base for making the calculations. Such a contention was also urged before the CEC and was rejected. We have examined this

MEMBER SECRETARY SEIAA-TN

Page 13 of 53

contention independently and are of the view that the base year of 1993-94 is most appropriate - we have already given our reasons for this. Some lessees might lose in the process while some of them might benefit but that cannot be avoided. In any event, each mining lease holder is being given the benefit of calculations only from 2000-01 and is not being 'penalized' for the period prior thereto. We think the mining lease holders should be grateful for this since it was submitted by learned counsel for the petitioners and the learned Amicus that the penalty should be levied from the date of EIA 1994. In our opinion, the cut-off from 2000-2001 (without interest) is undoubtedly reasonable and there can be hardly be any grievance in this regard...."

"....To avoid any misunderstanding, confusion or ambiguity, we make the following very clear:

- (1) A mining project that has commenced prior to 27th January, 1994 and has obtained a No Objection Certificate from the SPCB prior to that date is permitted to continue its mining operations without obtaining an EC from the Impact Assessment Agency. However, this is subject to any expansion (including an increase in the lease area) or modernization activity after 27th January, 1994 which would result in an increase in the pollution load. In that event, a prior EC is required. However, if the pollution load is not expected to increase despite the proposed expansion (including an increase in the lease area) or modernization activity, a certificate to this effect is absolutely necessary from the SPCB, which would be reviewed by the Impact Assessment Agency.
- (2) The renewal of a mining lease after 27th January, 1994 will require an EC even if there is no expansion or modernization activity or any increase in the pollution load.
- (3) For considering the pollution load the base year would be 1993-94, which is to say that if the annual production after 27th January, 1994 exceeds the annual production of 1993-94, it would be treated as an expansion requiring an EC.
- (4) There is no doubt that a new mining project after 27th January, 1994 would require a prior EC.
- (5) Any iron ore or manganese ore extracted contrary to EIA 1994 or EIA 2006 would constitute illegal or unlawful mining (as understood and interpreted by us) and compensation at 100% of the price of the mineral should be recovered from 2000-2001 onwards in terms of Section 21(5) of the MMDR Act, if the extracted mineral has been

disposed of. In addition, any rent, royalty or tax for the period that such mining activity was W.P. (C) Nos. 114/2014 etc. carried out outside the mining lease area should be recovered. (6) With effect from 14th September, 2006 all mining projects having a lease area of 5 hectares or more are required to have an EC. The extraction of any mineral in such a case without an EC would amount to illegal or unlawful mining attracting the provisions of Section 21(5) of the MMDR Act.

Further, based on the inspection report and the violation notifications issued by the MoEF&CC dated 14.03.2017 & 08.03.2018, SEAC Sub-committee classified the level of damages caused by the Project Proponent on the environment based on the following criteria:

As per the above Notifications, the estimation of Ecological Remediation cost, Natural Resources Augmentation cost and Community Resources Augmentation cost are part of the appraisal of mining projects under violation category.

### 2. Damage Assessment and Evaluation of Costs

Each mining project has its own characteristics such as mineral mined, mining lease area, mining lease period, method of mining, mined mineral output, mined material storage, waste material storage, transportation of mined material, formation of benches, green belt development, proximity to the habitations, water body and forest, market value of mined ore, pollution potential of mining project, human safety and health issues and ecological damage. Hence, the SEAC has arrived the following methodology based on major and important factors, field inspection and data collected and expertise of the members of SEAC.

In the step 1, the objective is to classify the mining project taken up for the study into either low level ecological damage category (or) high level ecological damage category. In this exercise, 11 characteristics attributed to the mining projects in general are used as criteria. Depending upon the applicability of the each of the criteria to the mining project, the mining project will become classified into either low level ecological damage category or high level ecological damage category. In the below-mentioned Table, if a minimum of 6 criteria becomes applicable for a classification, then the project is classified under the concerned type of classification (low/high).

Table 1: Classification of Mining Projects for Violation Category

MEMBER SECRETARY SEIAA-TN

Page 15 of 53

Sl. No	Criteria	Low	High
1.	Year wise Mined Mineral Output	As per approved Mining Plan	Not as per approved Mining Plan
2.	Benches formation	Formed and as per specifications	Not formed
3.	Drilling, Blasting and Heavy  Machineries use	Not used	Drilling, Blasting and Heavy Machineries used
4.	Adequate and qualified statutory personnel	Employed	Inadequate and unqualified personnel employed
5.	Waste dumps location	Within the lease hold area	Outside the lease hold area
6.	Habitations/Forest location	Away from the site by 500 m or more	Located within 500m
7.	Ground water table intersection	Not intersected	Intersected
8.	Green belt development in safety zone and as per norms of species & numbers	Developed in safety zone and as per norms	Green belt formed outside the safety zone and also not as per norms
9.	Mined Mineral storage (Ore)	Scientific and within the lease area	Unscientific and outside the lease area
10.	Surface Drainage	Constructed and as per specifications	Not constructed
11.	Mined material transport route	Away from habitations atleast by 500 m	Passing through the habitations

In view of the above and based on the inspection report & the Ecological damage, remediation plan and natural & community resource augmentation plan furnished by the project proponent, the SEAC decided the fund allocation for Ecological remediation, natural

resource augmentation & community resource augmentation and penalty by following the below mentioned criteria given in Table 2.

Table 2: Damage Assessment Classification of Granite Mining Projects

Level of damages	Ecological remediation cost	Natural resource augmentation cost	Community resource augmentation cost	CER	Total
	Rs in lakhs / Ha	Rs in lakhs / Ha	Rs in lakhs / Ha	Rs in lakhs / Ha	Rs in lakhs / Ha
Low level Ecological damage	0.40	0.50	0.70	0.40	2.00
High level Ecological damage	0.75	1.00	1.25	0.75	3.75

In the step 2, the objective is to estimate the Ecological Remediation cost, Natural Resources Augmentation cost and Community Resources Augmentation cost. In this exercise, data related to the select mining projects from project proposals and field conditions have been used to calculate the damage assessment from the above Table 2.

ESTIMATION OF ECOLOGICAL REMEDIATION COST, NATURAL RESOURCES AUGMENTATION COST AND COMMUNITY RESOURCES AUGMENTATION COST UNDER VIOLATION CATEGORY – M/s. TAMIN Limited, Sengunam.

STEP - 1:

Classification of Mining Projects according to the Violation level

Sl.	Criteria	Response	Level of Damage	Concluding	Final
No				Remarks	Classifica
					tion

MEMBER SECRETARY SEIAA-TN

Page 17 of 53

1.	Year wise Mined Mineral	operation was carried out within the quantity as stipulated in the	Quarrying was carried out in accordance without prior Environmental Clearance as per the MoEF Notification S.O 1533(E) dated, 14.09.2006— High Level damage  Benches are NOT		
2.	Benches formation	formed as per the specifications given in the approved Mining Plan. BH: 10m but BW is 6 m.	formed as per the Approved Mining Plan- High Level damage	Out of 11 criteria, 7 criteria have been	Low Level
3.	Drilling, Blasting and Heavy Machineries use	No Heavy Blasting operations were carried out. Instead, the mild blasting operations to cause fracturing carried out at some areas but however Diamond wire saw cutting (non-explosive) technique has been adopted.	were adopted along with the Diamond Wire Saw Cutting for the Extraction of Dimension Stones but the HEMM were used- Low Level	scored for Low Level of Damage.	Ecological Damage
4.		Required: 3			

	Adequate and qualified statutory personnel	Sanctioned & Available:3	Three number of statutory personnel employed – Low Level damage	
5.	Waste dumps location	Low quantity of waste produced due to low stripping ratio. However, the mineral rejects were produced also stored in the mine lease holed area.	The waste dump placed within the mine lease hold area in the non-mineralized zone  Low Level damage	
6.	Habitations/ Forest location	Kunanture village located in the SW Part at 900 m range where about 900 persons are living.	Habitations are NOT located within 500 m  - Low level damage	
7.	Ground water intersection	Not intersecting the Ground Water Table.	Mining operations are not intersecting the Ground Water Table – Low level damage	
8.	Green belt development in safety zone and as per norms in terms of species & numbers	Yes, provided. About 100 Trees in an extent of 1.75 Ha, predominantly local species like Neem, Pungan, etc. are planted and maintained with	Green belt developed around the safety zone – Low level damage	

		about 90.0% Survival Rate in this Lease.		-
9.	Mined Mineral storage	It is being stored in the mine lease area currently with a systematic & scientific manner in the non-mineralized zone.	Further, Reserve Ore Stock is being maintained in the mine lease area — Low level damage	
10.	Surface Drainage	Not Constructed as per the specifications.	Garland drains are not constructed due to hilly deposit—High level damage	
11.	Mined Material transport route	Necessarily Passing through the village	Trucks carrying the Granite blocks are necessarily pass through the villages for a stretch of atleast 500 m distance as the alternative route is not available High level damage	

Step 2: (i) Application of SEAC Methodology

	Esslagical	Natural	Community		
Level of	Ecological	Resource	Resource	CER	Total
Damage	Remediation	Augmentation	Augmentation		
	Cost	Cost	Cost		

	Rs. in lakhs /	Rs. in lakhs / Ha	Rs. in lakhs /	Rs. in lakhs /	Rs. in lakhs / Ha
	2.44		7.14	На	110
SEAC Scale	0.40	0.50	0.70	0.40	2.00
Actual Amount	40000 × 22.88.5	50000 × 22.88.5	70000 × 22.88.5	40000 × 22.88.5	200000 × 22.88.5
	9,15,400	11,44,250	16,01,950	9,15,400	45,77,000/=

#### DAMAGE COST CALCULATION

SEAC Sub-committee inspected the project site and the documents of project cost details were verified.

The level of damages are assessed by the following criteria:

- Low level Ecological damage: Only procedural violation work/operation at site without obtaining EC.
- 2. Medium level Ecological damage:
  - a. Procedural violation started the construction at site or operation without obtaining EC.
  - Infrastructural violation such as deviation from awarded EC, CTO & Mining Plan approvals.
  - c. Non operation of the project.
- High level Ecological damage: a. Procedural violation (started the construction or operation at site without obtaining EC).
  - b. infrastructural violation such as deviation from awarded EC, CTO & Mining Plan approvals.
  - c. Under Operation (occupied) without Statutory Approvals.

Thus, the Proposal falls in **Low Level Ecological Damage** as the operations were carried out without obtaining prior EC but however the quantity excavated as per the approved Mining Plan.

MEMBER SECRETARY SEIAA-TN

Page 21 of 53

### **CONCLUSIONS:**

As the Proposal falls in Low Level Ecological Damage during the Violation Period, the Sub-Committee is of the opinion that the higher Environmental Compensation value has been arrived based on the SEAC Model - Rs. 36,61,600/- which is higher than the other estimation - Environmental Compensation values of Rs. 17,85,000/- arrived by the EIA Co-ordinator based on the EIA model. Therefore, the aforesaid value of Rs. 36,61,600/- must be compensated for Remediation, Natural Resource Augmentation and Community Resource Augmentation plan as follows:

il. No.	Activity Proposed	Total, Rs.
1	Ecological Damage Remediation Plan	9,15,400
2	Natural Resource Augmentation Plan	11,44,250
3	Community Resource Augmentation Plan	16,01,950
Grand Total		36,61,600

However, based on the SEAC-TN model for the violation cases, the CER value is estimated as Rs. 2,63,964/-. Here, the PP had committed to provide the following budget towards the Corporate Environmental Responsibility (CER) during the SEAC appraisal meeting.

Name of the Village	Particulars	CER Amount
Sengunam Govt School. Sengunam village	Education & Repairs and Maintenance of School buildings, Upliftment of Toilet facilities for the Students & Teachers, Tree Plantation and Environmental related Books for the Library etc.	Rs. 9,15,400
	Rs. 9,15,400	

### STATUTORY PROCEDURES TO BE FOLLOWED:

 The Bank Guarantee for Rs. 36,61,600/- must be given to TNPCB for successful implementation of the Schemes in a three years period. The Bank Guarantee will be

released after successful implementation of the Remediation Plan and Natural and Community Resource Augmentation Plan.

CER fund of Rs. 9,15,400 must be spent by M/s. TAMIN as committed during the
appraisal and receipt has to be produced to SEAC/SEIAA-TN for awarding the EC.

Credible Action under Section 19 of the E(P) Act shall also be complied for awarding the EC.

#### RECOMMENDATIONS

The SEAC Sub-Committee observed that the Mining of Colour Granite in an extent of 22.88.5 Ha & SF No. 55A/1B1(part) for Environmental Clearance under violation comes under the "Low level Ecological damage category" as per the SEAC Violation norms. Hence, the subcommittee opines the **grant of Environmental Clearance** for Mining of Colour Granite in an extent of 22.88.5 Ha & SF No. 55A/1B1(part) of M/s Tamil Nadu Minerals Limited **may be considered** subject to the following conditions in addition to the normal conditions:

1. The amount prescribed for Ecological remediation (Rs. 9,15,400), natural resource augmentation (Rs. 11,44,250) & community resource augmentation (Rs. 16,01,950), totaling Rs. 36,61,600. Hence the SEAC decided to direct the project proponent to remit the amount of Rs. 36,61,600in the form of bank guarantee to Tamil Nadu Pollution Control Board and submit the acknowledgement of the same to SEIAA-TN. The funds shall be utilized for the remediation plan, Natural resource augmentation plan & Community resource augmentation plan as indicated in the EIA/EMP report.

 The project proponent shall carry out the works assigned under ecological damage, natural resource augmentation and community resource augmentation within a period of three years. If not, the bank guarantee will be forfeited to TNPCB without further notice.

3. The amount committed by the Project proponent for CER (Rs. 9,15,400) shall be remitted in the form of DD to the beneficiary for the activities committed by the proponent. A copy of receipt from the beneficiary shall be submitted to SEIAA-TN. However, the PP shall supervise the work and submit the status of the work complied

MEMBER SECRETARY SEIAA-TN

Page 23 of 53

pertaining to the CER within a period of one year to the DEE/TNPCB and the SEIAA.

- 4. The project proponent shall submit the proof for the action taken by the state Government/TNPCB against project proponent under the provisions of Section 19 of the Environment (Protection) Ac, 1986 as per the EIA Notification dated: 14.03.2017 and amended 08.03.2018.
- The company shall obtain 'No Dues Certificate' from State Government i.e.
   Department of Geology & Mining within a period of two weeks and submit the same to SEAC before grant of EC, if not produced earlier.
- 6. The PP shall ensure that the plantation shall be carried out in 1.00 Ha in a phase manner as a part of mine closure activities.
- 7. The PP shall install the Environmental Management Cell headed by the statutory (I/II Class) Mines Manager of the concerned mine under violation category and the cell shall include a dedicated full-time Environmental Engineer exclusively to look into the effective implementation of Environmental Management Plan besides the reviewing the compliance reports with the regulatory authorities.
- The PP shall strictly adhere with the safety provisions as laid for the operation of Diamond Wire Saw machines and use of Cranes vide DGMS Tech Circulars No: 02 of 29.11.2019 & No. 10 of 19.07.2002 respectively.
- 9. The PP shall ensure that the Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral reject (Granite waste) dumps. The water so collected in such sump should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly de-silted and maintained properly.
- 10. The mining lease holders shall, after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- 11. The proponent shall obtain a 'Star Rating' system awarded by Anna University, Chennai annually to the mining lease being operated for their efforts and initiatives

taken for successful implementation of the Sustainable Development Framework (SDF).

12. The Project Proponent shall ensure that the funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to the MoEF & CC Ministry and its Integrated Regional Office (IRO) located in Chennai.

Based on the inspection report and documents furnished, SEAC decided to accept the recommendation made by the subcommittee and decided to recommend the proposal for the grant of Environmental Clearance for the production quantity of 40,692m<sup>3</sup> of ROM Multi colour granite, 10,173m<sup>3</sup> Recovery of Granite @ 25% & 30,519m<sup>3</sup> of Granite @ 75%. waste The peak production shall not exceed 8,161 m<sup>3</sup> of ROM, 2,040m<sup>3</sup> of Granite & 6,120m<sup>3</sup> of Granite waste with the ultimate depth of mining upto 30m subject to the standard conditions & normal conditions stipulated by MOEF &CC, in addition to the following specific conditions:

- 1. The amount prescribed for Ecological remediation (Rs. 9,15,400), natural resource augmentation (Rs. 11,44,250) & community resource augmentation (Rs. 16,01,950), totaling Rs. 36,61,600. Hence the SEAC decided to direct the project proponent to remit the amount of Rs. 36,61,600 in the form of bank guarantee to Tamil Nadu Pollution Control Board and submit the acknowledgement of the same to SEIAA-TN. The funds shall be utilized for the remediation plan, Natural resource augmentation plan & Community resource augmentation plan as indicated in the EIA/EMP report.
- The project proponent shall carry out the works assigned under ecological damage, natural resource augmentation and community resource augmentation within a period of three years. If not, the bank guarantee will be forfeited to TNPCB without further notice.
- 3. The amount committed by the Project proponent for CER (Rs. 9,15,400) shall be remitted in the form of DD to the beneficiary for the activities committed by the proponent. A copy of receipt from the beneficiary shall be submitted to SEIAA-TN. However, the PP shall supervise the work and submit the status of the work complied

MEMBER SECRETARY
SEIAA-TN

Page 25 of 53

pertaining to the CER within a period of one year to the DEE/TNPCB and the SEIAA.

- 4. The project proponent shall submit the proof for the action taken by the state Government/TNPCB against project proponent under the provisions of Section 19 of the Environment (Protection) Ac, 1986 as per the EIA Notification dated: 14.03.2017 and amended 08.03.2018.
- 5. The PP shall furnish NOC from DFO regarding movement of wild animals/birds for the proposed mining activity before grant of EC.
- The PP shall conduct and submit report on exposure survey for parameters such as silica/PM<sub>2.5</sub> & PM<sub>10</sub> to the nearby residents & employees before grant of EC.
- 7. The company shall obtain 'No Dues Certificate' from State Government i.e. Department of Geology & Mining within a period of two weeks and submit the same to SEAC before grant of EC, if not produced earlier.
- 8. The PP shall ensure that the plantation shall be carried out in 1.00 Ha in a phase manner as a part of mine closure activities.
- 9. The PP shall install the Environmental Management Cell headed by the statutory (I/II Class) Mines Manager of the concerned mine under violation category and the cell shall include a dedicated full-time Environmental Engineer exclusively to look into the effective implementation of Environmental Management Plan besides the reviewing the compliance reports with the regulatory authorities.
- 10. The PP shall strictly adhere with the safety provisions as laid for the operation of Diamond Wire Saw machines and use of Cranes vide DGMS Tech Circulars No: 02 of 29.11.2019 & No. 10 of 19.07.2002 respectively.
- 11. The PP shall ensure that the Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral reject (Granite waste) dumps. The water so collected in such sump should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly de-silted and maintained properly.
- 12. The mining lease holders shall, after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to

- their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- 13. The proponent shall obtain a 'Star Rating' system awarded by Anna University, Chennai annually to the mining lease being operated for their efforts and initiatives taken for successful implementation of the Sustainable Development Framework (SDF).
- 14. The Project Proponent shall ensure that the funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to the MoEF & CC Ministry and its Integrated Regional Office (IRO) located in Chennai.
- 15. 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 adhere the EMP of Rs,1,55,000 Lakhs as committed.
- 16. As accepted by the Project Proponent the revised CER cost is Rs. 10 lakhs and the amount shall be spent for activities of (1) construction/renovation of Girls toilet with 24/7 water facility, (2) providing free supply of sanitary napkins for three months to adult girl students through the Headmaster (3) installation of incinerator in the Girls toilet for safe disposal of sanitary napkins and (4) tree plantation in school in consultation with concerned Government school HM in Government High School, Suanur Village before obtaining CTO from TNPCB. The project proponent shall also distribute 1000 mango saplings to the people in nearby village at free of cost.
- 17. The project proponent shall strengthen the road to be used for transporting mined materials in discussion with District Collector.
- 18. The proponent shall mandatorily appoint the statutory Mines Manager and the Mining Engineer in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Granite Conservation & Development Rules, 1999 respectively.
- 19. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
- 20. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.

Page 27 of 53

- 21. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of Granite, waste, over burden, side burden and top soil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
- 22. The Proponent shall ensure that the overburden, waste rock and non-saleable granite generated during prospecting or mining operations of the granite quarry shall be stored separately in properly formed dumps on grounds earmarked. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps. Such dumps shall be properly secured to prevent the escape of material in harmful quantities which may cause degradation of the surrounding land or silting of water courses.
- 23. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
- 24. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
- 25. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.

EC Identification No. - 4045/2015 Date of Issue EC - 04/06/2024

- 26. 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 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.
- 27. 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.
- 28. Noise and Vibration Related: (i) The Proponent shall carry out only the Controlled Blasting operation using the detonating cord/fuse of low grammage PETN (or) Gun powder (or) safety fuse for the extraction of the granite blocks in the quarry. However, the proponent shall use NONEL based shock tube initiation system only while carrying out the controlled blasting operations for the excavation of overburden and side burden even though no habitations (or) forest exists around the proposed site. The proponent shall not carry out any blasting operation involving the initiation system such as detonating cord safety fuse, ordinary detonators, cord relays, in the blasting operation carried out for the excavation of overburden and side burden. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of granite boulders shall be carried out in any occasions and only other suitable non-explosive techniques involving chemical agents shall be adopted if such secondary breakage is required. The Project Proponent shall provide required number of the security sentries for guarding the danger zone of 500 m radius from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the

Page 29 of 53

blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.

- 29. The proponent shall undertake in a phased manner restoration, reclamation and rehabilitation of lands affected by the quarrying operations and shall complete this work before the conclusion of such operations and the abandonment of the granite quarryas assured in the Environmental Management Plan& the approved Mine Closure Plan.
- 30. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
- 31. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
- 32. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
- 33. The proponent shall ensure that the transportation of the quarried granite stones shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried granite stones; and transport of granite stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.
- 34. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
- 35. The Project Proponent shall take all possible precautions for the protection of environment and control of pollution while carrying out the mining or processing of granite in the area for which such licence or lease is granted, as per

- 36. The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.
- 37. The project proponent shall ensure that the provisions of the MMDR Act, 1957, the Granite Conservation and Development Rules 1999, the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
- 38. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.
- 39. The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
- 40. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.
- 41. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.
- 42. The recommendation for the issue of environmental clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.ANo.186 of 2016 (M.A.No.350/2016) and O.A.No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No.758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 &

Page 31 of 55

- M.A.No.843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016(M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).
- 43. The Project Proponent shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. The Project Proponent shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines (IBM) from time to time.
- 44. That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.
- 45. All the commitments made by the proponent during the Public Hearing, as per the minutes of Public Hearing should be implemented in total.

### Appendix -I

### List of Native Trees Suggested for Planting

- 1. Aeglemarmelos-Vilvam
- 2. Adenaantherapavonina-Manjadi
- 3. Albizialebbeck-Vaagai
- 4. Albiziaamara-Usil
- 5. Bauhinia purpurea Mantharai
- 6. Bauhinia racemosa Aathi
- 7. Bauhinia tomentosa-Iruvathi
- 8. Buchananiaaillaris-Kattuma
- 9. Borassusflabellifer- Panai
- 10. Buteamonosperma Murukkamaram
- 11. Bobaxceiba- Ilavu, Sevvilavu
- 12. Calophylluminophyllum Punnai
- 13. Cassia fistula- Sarakondrai
- 14. Cassia roxburghii- Sengondrai
- 15. Chloroxylonsweitenia Purasamaram

- 16. Cochlospermumreligiosum- Kongu, ManjalIlavu
- 17. Cordiadichotoma- Mookuchalimaram
- 18. Cretevaadansonii-Mavalingum
- 19. Dilleniaindica- Uva, Uzha
- 20. Dilleniapentagyna- SiruUva, Sitruzha
- 21. Diospyrosebenum- Karungali
- 22. Diospyroschloroxylon- Vaganai
- 23. Ficusamplissima- Kalltchi
- 24. Hibiscus tiliaceous-Aatrupoovarasu
- 25. Hardwickiabinata- Aacha
- 26. Holopteliaintegrifolia-Aayili
- 27. Lanneacoromandelica Odhiam
- 28. Lagerstroemia speciosa Poo Marudhu
- 29. Lepisanthustetraphylla- Neikottaimaram
- 30. Limoniaacidissima Vila maram
- 31. Litseaglutinosa-Pisinpattai
- 32. Madhucalongifolia Illuppai
- 33. Manilkarahexandra-Ulakkai Paalai
- 34. Mimusopselengi Magizhamaram
- 35. Mitragynaparvifolia Kadambu
- 36. Morindapubescens-Nuna
- 37. Morindacitrifolia- Vellai Nuna
- 38. Phoenix sylvestre-Eachai
- 39. Pongamiapinnata-Pungam
- 40. Premnamollissima- Munnai
- 41. Premnaserratifolia- Narumunnai
- 42. Premnatomentosa-PurangaiNaari, PudangaNaari
- 43. Prosopiscinerea Vannimaram
- 44. Pterocarpusmarsupium Vengai
- 45. Pterospermumcanescens-Vennangu, Tada
- 46. Pterospermumxylocarpum Polavu
- 47. Puthranjivaroxburghii-Puthranjivi

Page 33 of 55

- 48. Salvadorapersica— UgaaMaram
- 49. Sapindusemarginatus- Manipungan, Soapukai
- 50. Saracaasoca Asoca
- 51. Streblusasper- Pirayamaram
- 52. Strychnosnuxvomica-Yetti
- 53. Strychnospotatorum Therthang Kottai
- 54. Syzygiumcumini Naval
- 55. Terminaliabellerica- Thandri
- 56. Terminalia arjuna- Venmarudhu
- 57. Toona ciliate Sandhanavembu
- 58. Thespesiapopulnea- Puvarasu
- 59. Walsuratrifoliata-valsura
- 60. Wrightiatinctoria- Veppalai
- 61. Pithecellobium dulce Kodukkapuli

### Appendix-II

### Display Board

### (Size 6' x 5' with Blue Background and White Letters)

கரங்கங்களில் குவாரி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அனுமதி கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது suaa/------, தேதியிடப்பட்டு, கற்றுச்சூழல் அனுமதி \_\_\_\_\_\_தேதி வரை செல்லத்தக்கதாக உள்ளது.

0	குவாரியின் எல்லையைச் சுற்றி வேலி அமைக்க வேண்டும்		
பகமை பகுதி வளர்ச்சி மேம்பாட்டுக்கான சுரங்கத் திட்டம்	காங்கப் தகையின் அமம் தரைமட்டத்திலிருந்து மீட்டர்க்கு மிகாமல் இருக்க வேண்டும்.		
SERVICE CONTRACT TO THE PROPERTY OF THE PROPER	சால்லில் மாக எற்பு ரகவாறு காங்க பணிகளை மேற்கொள்ள வேண்டும்.		
<u>நடப்பட்டு</u>	வாகனங்கள் செல்லும் பாதையில் மாக ஏற்படாத அளவிறகு தணைனர் முறையாக		
பராமரிக்கப்படவேண்டிய மரங்கள்	இரைச்சல் அளவையும் தூசி மாசுபாட்டையும் குறைப்பதற்காக குவார்யான பக்கையை கள்கி அடித்தியான பக்கையும் முத்தியை ஏற்படுத்த வேண்டும்.		
கரங்கத்தில் வெடி வைக்கும்பொ	ழுது நிலஅதிர்வுகள் ஏற்படாதவாறும் மற்றும் கற்கள் பற்கொதவாரும் பாதுமாகபு		
நடவடிகளைகளை உண்டுப்படும் இன்	யல்படுத்தப்பட வேண்டும் (ச்சல் அளவு 85 டெசிபல்ஸ் (dBA) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த கட்டுப்பாடுகளை		
கரங்க சட்ட விதிகள் 1955ன் கீழ்	் கரங்கத்தில் உள்ள பணியார்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்கவதோடு ளை செய்து தர வேண்டும்.		
the same of the confidence	த வரத்தாகிகள் செவ்வரம் சாலையை வகாடர்ந்து நடிக்கு பராய்கள்கள் சம்மாகும்.		
கரங்கத்திலிருந்து கனிம் பொருட்	களை எடுத்துச் பேசல்வது வராம் மக்களுக்கு கூறது. நல்லாரிக்கலாக வண்ணம் வாகனங்களை இயக்க வேண்டும்.		
Unity and control and up the state of the st	ன் கரங்க முடல் திட்டத்தில் உள்ளவாறு சுரங்கத்தினை மூட வேண்டும். ன் கரங்க முடல் திட்டத்தில் உள்ளவாறு சுரங்கத்தினை மூட வேண்டும்.		
கரங்க நடவடிக்கைகளை முடித் வேறு எந்தப் பகுதியையும் மறுக	துபின்னர் கரங்கப் பகுது மற்றும் கரங்க நடிப்பெற்றின் வளர்ச்சிக்கு ஏற்ற வகையில் ட்டுமானம் செய்து தாவரங்கள் விலங்குகள் ஆகியவற்றின் வளர்ச்சிக்கு ஏற்ற வகையில்		
முழுமையான நிபந்தனைகளை அறி	ண்டும். பெ பாரிவேஷ் (Http://periceth.nic.in) என்கிற நிணையதளத்தைப் பார்வையிடவும். மேலும் எந்தவித சென்னையில் உள்ள சுற்றுச்தழல். மற்றும் வன அமைச்சகத்தின் ஒருங்கிணைந்த வட்டார் சென்னையில் உள்ள சுற்றுச்தழல் மற்றும் வன் அமைச்சுத்தின் மாவட்ட சற்றுச்தழல் பொறியாளனர் அணுகவும். (r) தமிழ்நாடு மாக கட்டுப்பாடு வாரியத்தின் மாவட்ட சுற்றுச்தழல் பொறியாளனர் அணுகவும்.		

Discussion by SEIAA and the Remarks:-

Earlier, The subject was placed in the 627<sup>th</sup> authority meeting held on 06.06.2023. The

authority noted that the subject was appraised in the 380th SEAC meeting held on

17.05.2023. SEAC has furnished its recommendations for granting Environmental

Clearance subject to the conditions stated to the conditions stated therein.

After detailed discussion, the Authority decided to request the Member Secretary, SEIAA

to inform the proponent to furnish the following particulars as recommended by SEAC in

the Minutes of 380th SEAC Meeting held on 17.05.2023.

1. The amount prescribed for Ecological remediation (Rs. 9,15,400), natural resource

augmentation (Rs. 11,44,250) & community resource augmentation (Rs. 16,01,950),

totaling Rs. 36,61,600. Hence the SEAC decided to direct the project proponent to

remit the amount of Rs. 36,61,600 in the form of bank guarantee to Tamil Nadu

Pollution Control Board and submit the acknowledgement of the same to SEIAA-

TN. The funds shall be utilized for the remediation plan, Natural resource

augmentation plan & Community resource augmentation plan as indicated in the

EIA/EMP report.

2. The project proponent shall submit the proof for the action taken by the state

Government/TNPCB against project proponent under the provisions of Section 19

of the Environment (Protection) Ac, 1986 as per the EIA Notification dated:

14.03.2017 and amended 08.03.2018.

3. The amount committed by the Project proponent for CER (Rs.9,15,400) shall be

remitted in the form of DD to the beneficiary for the activities committed by the

proponent. A copy of receipt from the beneficiary shall be submitted to SEIAA-TN.

However, the PP shall supervise the work and submit the status of the work complied

pertaining to the CER within a period of one year to the DEE/TNPCB and the

SEIAA.

4. The PP shall furnish NOC from DFO regarding movement of wild animals/birds for

the proposed mining activity before grant of EC.

5. The PP shall conduct and submit report on exposure survey for parameters such as

silica/PM2.5 & PM10 to the nearby residents & employees before grant of EC.

MEMBER SECRETARY SEIAA-TN

Page 35 of 55

The company shall obtain 'No Dues Certificate' from State Government i.e.
 Department of Geology & Mining within a period of two weeks and submit the same to SEAC before grant of EC, if not produced earlier.

On receipt of above details, the Member Secretary is requested to place the proposal before the Authority for further course of action.

Now, The subject was placed in the 707th authority meeting held on 01.04.2024.

After detailed discussions, the Authority taking into account the particulars furnished by the Proponent, SEIAA decided to to recommend the proposal for the grant of Environmental Clearance for the production quantity of 40,692m³ of ROM Multi colour granite, 10,173m³ Recovery of Granite @ 25% & 30,519m³ of Granite waste @ 75%. The peak production shall not exceed 8,161 m³ of ROM, 2,040m³ of Granite & 6,120m³ of Granite waste with the ultimate depth of mining upto 30m subject to the standard conditions & normal conditions stipulated by MOEF &CC, in addition to the following specific conditions: Keeping in view of MoEF&CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated 12.04.2022, this Environmental Clearance is valid as per the approved mine plan period.

- The EC granted is subject to review by District Collector, Mines Dept. and TNPCB
  on completion of every 5 years and also during the mine plan period, till the project
  life so as to review the EC conditions and to ensure that they have all been adhered
  to and implemented.
- The project proponent shall submit a Certified Compliance Report obtained from IRO of MoEF&CC to the monitoring, regulatory and other concerned authorities including SEIAA, while seeking a renewal of the mining plan to cover the project life.
- There should be regular monitoring of air quality, water quality, ground water level
  and noise quality and reports regarding the same should be submitted to TNPCB,
  SEIAA & IRO of MoEF&CC once in every 6 months.
- 4. The proponent shall strictly adhere to the mining plan and half yearly and annual returns shall be submitted to the Director of Geology and Mining Department with copy marked to TNPCB, SEIAA & IRO of MoEF&CC.

- Biodiversity in and around the project area should be monitored frequently and detailed biodiversity report should be submitted every year to SEIAA & IRO of MoEF&CC.
- 6. The progressive and final mine closure plan including the green belt implementation and environmental norms should be strictly followed as per the EMP and as per the amount committed and approved in EC for EMP. Status of progressive mine closure and green belt implementation should be included in the half yearly compliance report submitted to TNPCB, SEIAA & IRO of MoEF&CC.
- 7. As per the OM vide F. No. IA3-22/1/2022-IA-III [E- 172624] Dated: 14.06.2022, the Project Proponents are directed to submit the six-monthly compliance on the environmental conditions prescribed in the prior environmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login.
- 8. The amount allocated for EMP should be kept in a separate account and both the capital and recurring expenditures should be done year wise for the works identified, approved and as committed. The work & expenditure made under EMP should be elaborated in the bi-annual compliance report submitted and also should be brought to the notice of concerned authorities during inspections.

#### Annexure-'A'

#### **EC** Compliance

- 1. The Environmental Clearance is accorded based on the assurance from the project proponent that there will be full and effective implementation of all the undertakings given in the Application Form, Pre-feasibilty Report, mitigation measures as assured in the Environmental Impact Assessment/ Environment Management Plan and the mining features including Progressive Mine Closure Plan as submitted with the application.
- 2. All the conditions as presented by the proponent in the PPT during SEAC appraisal should be addressed in Full.
- 3. The proponent shall submit Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data. It shall be sent to the respective Regional Office of Ministry of Environment, Forests and Climate Change,

MEMBER SECRETARY SEIAA-TN

Page 37 of 55

- Govt. of India and also to the Office of State Environment Impact Assessment Authority (SEIAA).
- Concealing the factual data or submission of false/fabricated data and failure to comply
  with any of the conditions mentioned above may result in withdrawal of this clearance
  and attract action under the provisions of Environment (Protection) Act, 1986.

## Applicable Regulatory Frameworks

5. The project proponent shall strictly adhere to the provisions of Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter

### Safe mining Practices

- 6. The AD/DD, Dept. of Geology & Mining shall ensure operation of the proposed quarry after the submission slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.
- 7. The AD/DD, Dept. of Geology & Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.
- 8. A minimum buffer distance specified as per existing rules and statutory orders shall be maintained from the boundary of the quarry to the nearest dwelling unit or other structures, and from forest boundaries or any other ecologically sensitive and archeologically important areas or the specific distance specified by SEIAA in EC as per the recommendations of SEAC depending on specific local conditions.

#### Water Environment – Protection and mitigation measures

- The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area.
- 10. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
- 11. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.
- 12. Quality of water discharged from the quarry should be monitored regularly as per the norms of State Pollution Control Board and included in the Compliance Report.
- 13. Rain Water Harvesting facility should be installed as per the prevailing provisions of TNMBR/TNCDBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
- 14. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the compliance reports to SEIAA.
- 15. Regular monitoring of ground water level and water quality shall be carried out around the mine area during mining operation. At any stage, if it is observed that ground water table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.
- 16. Garland drains and silt traps are to be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps have to be attended on a daily basis. A labour has to be specifically assigned for the purpose. The proponent shall ensure the quality of the discharging storm water as per the General Effluent Discharge Standards of CPCB.

#### Air Environment – Protection and mitigation measures

17. The activity should not result in CO<sub>2</sub> release and temperature rise and add to micro climate alternations.

MEMBER SECRETARY

Page 39 of 55

- 18. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.
- 19. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.

## Soil Environment - Protection and mitigation measures

- 20. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
- 21. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
- 22. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health.
- 23. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
- 24. The proponent shall ensure that the mine restoration is done using mycorrizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
- 25. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.
- 26. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.
- 27. The top soil shall be temporarily stored at earmarked place (s) and used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geotextile shall be undertaken for stabilization of the dump. Protective wall or gabions should be made around the dump to prevent erosion / flow of sediments during rains. The entire excavated area shall be backfilled.

## Noise Environment - Protection and mitigation measures

28. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

MEMBER SECRETARY SEIAA-TN

EC Identification Npage C214 B0035 N174512 File No. - 4045/2015 Date of Issue EC - 04/06/2024

Page 41 of 56

29. The sound at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Hence, the PP shall ensure that the biological clock of the villages are not disturbed because of the mining activity.

### Biodiversity - Protection and mitigation measures

- 30. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
- 31. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around.
- 32. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort.
- 33. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
- 34. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

#### Climate Change

- 35. The project activity should not in any way impact the climate and lead to a rise in temperature.
- 36. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.

37. Intensive mining activity should not add to temperature rise and global warming.

MEMBER SECRETARY
SEIAA-TN

Page 41 of 55

- 38. Operations should not result in GHG releases and extra power consumption leading to Climate Change.
- 39. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.
- 40. Mining Operation should not result in droughts, floods and water stress, and shortages, affecting water security both on site and in the vicinity.
- 41. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.
- 42. Mining activity should be flood proof with designs and the drainage, pumping techniques shall ensure climate-proofing and socio-economic wellbeing in the area and vicinity.

## Reserve Forests & Protected Areas

- 43. The activities should provide nature-based support and solutions for forest protection and wildlife conservation.
- 44. The project activities should not result in forest fires, encroachments or create forest fragmentation and disruption of forest corridors.
- 45. There should be no disturbance to the freshwater flow from the forest impacting the water table and wetlands.
- 46. The project proponent should support all activities of the forest department in creating awareness to local communities on forest conservation.
- 47. The project activities should not alter the geodiversity and geological heritage of the area.
- 48. The activities should not result in temperature rise due to increased fossil fuels usage disrupting the behaviour of wildlife and flora.
- 49. The activities should support and recognise the rights and roles of indigenous people and local communities and also support sustainable development.
- 50. The project activities should support the use of renewables for carbon capture and carbon storage in the project site and forest surrounds.
- 51. The project activities should not result in changes in forest structure, habitats and genetic diversity within forests.

#### **Green Belt Development**

- 52. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) are planted.
- 53. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).

#### Workers and their protection

- 54. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time to quarrying /Mining operations. The workers on the site should be provided with on-site accommodation or facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc.
- 55. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
- 56. The workers shall be employed for working in the mines and the working hours and the wages shall be implemented/enforced as per the Mines Act, 1952.

#### **Transportation**

- 57. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a bypass road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- 58. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of

MEMBER SECRETARY SEIAA-TN

Page 43 of 55

dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

#### Storage of wastes

59. The project proponent shall store/dump the granite waste generated within the earmarked area of the project site for mine closure as per the approved mining plan.

#### CER/EMP

- 60. The CER Should be fully Implemented and fact reflected in the Half-yearly compliance report.
- 61. The EMP Shall also be implemented in consultation with local self-government institutions.
- 62. The follow-up action on the implementation of CER Shall be included in the compliance report.

## Directions for Reclamation of mine sites

- 63. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.
- 64. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
- 65. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen

and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association.

- 66. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.
- 67. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized.
- 68. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.
- 69. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining conditions.
- 70. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc of pioneering spices should be collected, preserved and used in restoring the site.
- 71. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses.
- 72. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread.
- 73. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for re-establishing the site to pre-mining conditions. Effective steps should be taken for utilization of over burden. Mine waste to be used for

MEMBER SECRETARY SEIAA-TN

Page 45 of 55

backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. The land disturbed should be reshaped for long term use. Mining should be as far as possible be eco-friendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.

- 74. Efforts should to taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish following the succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be used to restore the site by adding soil humus and mycorrhiza.
- 75. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

### STANDARD CONDITIONS

# Part -A: Conditions to be compiled before commencing mining operations

- The project authorities shall advertise in two widely circulated local newspapers, one of which shall be in the vernacular language of the locality concerned informing the public that
  - I. The project has been accorded Environmental Clearance.
  - II. Copies of Clearance letters are available with the Tamil Nadu Pollution Control Board.
  - III. Environmental Clearance may also be seen on the website of SEIAA.
  - IV. The advertisement should be made within 7 days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the SEIAA.

## Conditions for Pre - Mining operation:

- i) "Consent to Operate" should be obtained from the Tamil Nadu Pollution Control Board before the start of the operation of the project and copy shall be submitted to the SEIAA-TN.
- ii) The project proponent shall carry out the works assigned under ecological damage, natural resource augmentation and community resource

- augmentation within a period of three year. If not, the bank guarantee will be forfeited to TNPCB without further notice.
- iii) In the case of any change(s) in the scope of the project, a fresh appraisal by the SEAC/SEIAA shall be obtained. No change in mining technology and scope of working should be made without prior approval of the State Environmental Impact Assessment Authority. No change in the calendar plan including excavation, quantum of Granite and waste should be made.
- iv) Project proponent shall comply with all the guidelines and notifications issued by MoEF & CC, New Delhi regarding Mining of Minerals and comply with orders of Hon'ble NGT from time to time regarding mining of minerals under 1(a).
- v) A copy of the clearance letter shall be sent by the proponent to the Local Body, Thandarampattu Taluk, Thiruvannamalai District, and the Local NGO, if any, from whom suggestions / representations, if any, have been received while processing the proposal. The clearance letter shall also be put on the website of the Proponent.
- All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire and Rescue Services Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wild Life (Protection) Act, 1972, State / Central Ground Water Authority, Coastal Regulatory Zone Authority, other statutory and other authorities as applicable to the project shall be obtained by project proponent from the concerned competent authorities.
- vii) All required sanitary and hygienic measures should be in place before starting mining.
- viii) The company shall stress upon the preventive aspects of occupational health.
- ix) Provision shall be made for the housing of mining labour with all necessary infrastructure and facilities such as, mobile toilets, Safe drinking water, medical health care, crèche etc.
- x) The project authorities should advertise with basic details at least in two widely circulated local newspapers, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of clearance and

Page 47 of 55

- a copy of the clearance letter is available with the State Pollution Control Board and also at website of SEIAA, TN and a copy of the same should be forwarded to the TNPCB located at Chennai.
- xi) A separate environment and safety management cell with qualified staff shall be set up before commissioning of mining activities and shall be retained throughout the lifetime of the mine, for implementation of the stipulated environmental safeguards.
- xii) The State Pollution Control Board should display a copy of the Environmental Clearance issued to the project at the Regional office, District Industry Centre and the Collector's office/Tahsildar's office for 30 days.
- xiii) A scientific site/ ecological rehabilitation and restoration plan on long term basis should be drawn to carryout restoration with native species and Bio diversity.
- xiv) The existing water bodies should not be disturbed to ensure sustainable environment for aquatic life forms.
- xv) The proponent should completely implement all environmental pollution control measures as detailed in the EIA report and in the additional report.
- xvi) Regarding CSR activities, the proponent should concentrate more on infrastructure facilities useful to the local community. They should include skill development and sports as some of the activities in this regard.
- xvii) Regular monitoring and check up for pulmonary and carcinogenic diseases to be carried out regularly, not only for the workers involved in the mines but also to the people in the villages adjoining the mines. Interaction with the PHC & district medical officer should be on regular basis to monitor the incidence of the diseases if any and to provide suitable medical facility for the patients.

## **Conditions for Mining Phase**

- To furnish to the SEIAA for one year period:
  - Report on quality and quantity of ground water to be generated during mining operations.
  - b. Comparative statement on normal ground water and mined out water with respect to qualities & suitability for agriculture etc for one year period.

- II. Monitoring of well water levels and water quality of the wells in the locations furnished in the EIA report shall be done during pre-monsoon and post monsoon period and results submitted to the TNPCB, Chennai and SEIAA-TN.
- III. Monitoring of water quality and air quality in and around the project site in the selected monitoring points as mentioned in the EIA report shall be continued regularly involving Academic Institutions.
- IV. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the TNPCB, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.
- V. The proponent shall conduct AAQ Monitoring Survey once in 6 months in the locations furnished in the EIA report and furnish report to the TNPCB, Chennai.
- VI. The critical parameters such as RSPM (PM<sub>2.5</sub>, P.M<sub>10</sub>) and NOx in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain.
- VII. Data on ambient air quality [(RSPM and NOx] shall be regularly submitted to the TNPCB at Chennai and the SEIAA/SPCB/CPCB once in six months.

Page 49 of 55

- VIII. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
  - IX. Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
  - X. Regular medical check-up for mine workers and nearby residents around the project site involving community medical centre/NIMH shall be conducted.
  - XI. As per norms, the health study should be conducted through competent/approved health organization and report submitted for one year.
  - XII. Corpus fund created should ne prioritized and utilized for health issues.
  - XIII. Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral within the lease area. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
  - XIV. The effective safe guard measures shall be provided to control particulate dust level in critical areas, transfer points and haul road within the mine area.
  - XV. At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for monitoring of RSPM (PM<sub>2.5</sub>, P.M<sub>10</sub>) and NO<sub>X</sub>. Location of the stations should be decided in consultation with Tamil Nadu Pollution Control Board based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring etc.
  - XVI. Separate drain shall be constructed in between waste dump (bund) and nearby river course, if any, to avoid silting in the water body.
  - XVII. Garland drains and siltation ponds of appropriate size shall be constructed around the mine working, soil and mineral dumps to prevent run off of water and flow of sediments. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted, particularly after the monsoon, and maintained properly.

- XVIII. The rain water accumulation in the mine during rainy seasons shall be treated by providing settling tanks in the periphery of the mining lease area and the overflow clean water from the settling tanks shall be allowed to discharge through the first order streams to join nearby natural drains. The settling tanks shall be cleaned periodically for removal of sediments and such records of cleaning shall be maintained properly.
- XIX. Garland drains proposed on the non moving sides of the Dump yards shall be connected to settling tanks to arrest any wash off sediments from the dumps and only overflowing clean water shall be allowed to discharge through the first order streams. The settling tanks shall be of sufficient dimensions to hold the wash offs in one rainy season and has to be cleaned before every rainy season.
- XX. Conservation plan furnished to protect the scheduled flora and fauna in the core and buffer zone of the project site shall be implemented. Scheduled species of fauna found in the study area shall be monitored closely.
- XXI. Annual monitoring on Bio-diversity around the project site shall be conducted and a report shall be furnished.
- XXII. Greenbelt shall be raised including a 7.5 m wide statutory barrier all around the mining lease, reclaimed and rehabilitated areas, around water body, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. Greenbelt shall be developed all along the mine lease area in a phased manner as per the approved mining plan.
- XXIII. Green belt shall be provided as per norms of MoEF & CC, GOI, in consultation with local DFO.
- XXIV. The project authority shall implement suitable water conservation measures including rain water harvesting system to augment ground water resources in the area in consultation with the Regional Director, State Ground Water Board.
- XXV. The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to bring into focus any infringement/deviation/violation of environmental or forest

Page 51 of 55

norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance of EC conditions and (iii) System of reporting of non-compliance /violation of environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.

- XXVI. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests, Government of India, New Delhi in advance of 5 years prior to the final mine closure for approval. Mine closure procedure shall be followed as per the approved mining plan.
- XXVII. Depth of water table of the wells located inside the mining area and wells located around the monitoring area shall be monitored regularly.
- XXVIII. CSR activity shall include providing social & welfare measures for the local residents & nearby villages around the mine area. It shall focus on providing water supply and sanitation facility to the nearby government schools around the mine area and maintenance of village roads, ponds, providing solar street lights etc. Funds earmarked for CSR activity shall be used for that purpose only and separate account shall be maintained and report on implementation shall be furnished regularly.
  - XXIX. The points raised in public hearing and concerns shall be addressed without fail as per action plan submitted to SEIAA.

# Conditions for Post Mining / Operation Phase & Entire life of the project:

- It is mandatory for the project proponent to furnish to the SEIAA, Half yearly compliance report in hard and soft copies on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year in respect of the conditions stipulated in the prior Environmental clearance, and also before commencement of production.
- ii. No expansion or modernization in the project shall be carried out without prior approval of the SEIAA-TN. In case of any deviations or alterations in the project proposal from those submitted to this Authority for clearance, a fresh reference shall be made to the SEIAA-TN to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

- iii. All the environmental protection measures and safeguards as recommended in the EIA report shall be complied with.
- iv. The implementation of the project vis-à-vis environmental action plans shall be monitored by the TNPCB at Chennai/TNPCB/CPCB. A six monthly compliance status report shall be submitted to monitoring agencies regularly.
- v. Data on ambient air, stack and fugitive emissions shall be regularly submitted online to the TNPCB and Central Pollution Control Board as well as hard copy once in six months and display data on RSPM, SO<sub>2</sub> and NOx outside the premises at the appropriate place for the general public.
- vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Mines Act.
- vii. The first aid facilities in the occupational health centre shall be strengthened and the medical records of each employee should be maintained separately
- viii. The overall noise levels in and around the mining area shall be kept well within the standards prescribed for by providing noise control measures on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under E(P)Act 1986 viz. 55 dBA (day time) and 45 dBA (night time).
- ix. The project proponent shall regenerate / preserve water body located at about 5.0 km from the propose site at its own expenses. The project proponent shall also develop village ponds in addition and shall ensure that the existing ponds in and around 5.0 Km radius are well maintained.
- x. Hydro geological study of the area shall be reviewed annually and report submitted to the Authority. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the operation of the Mining activity.
- xi. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of

Page 53 of 55

environmental conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.

- xii. Environmental Clearance is being issued without prejudice to the action initiated under Environment (Protection) Act, 1986 or any court case pending or any other court order shall prevail.
- xiii. The SEIAA/SEAC reserves the right to add any further condition(s) on receiving reports from the project authority. The above condition shall be monitored by the TNPCB.
- xiv. The SEIAA, TN may revoke or suspend the Environmental clearance, if implementation of any of the above conditions is not satisfactory.
- The SEIAA, TN may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, if, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
- xvi. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
- Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India / Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
- xviii. This clearance is issued with respect to only environmental considerations and it does not imply that SEIAA approved the way by which lease is granted to the project. While granting lease, the concerned authority shall ensure

compliance of Relevant rules, Regulations, Notification, Government resolutions, circulars, Judgments/Orders of Hon'ble Court and NGT, etc.

xix. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

> MEMBER SECRETARY SEIAA-TN

#### Copy to:

- The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- 2. The Additional Chief Secretary to Government, Environment, Climate Change and Forests Department, Tamil Nadu.
- 3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
- The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1<sup>st</sup> & 2<sup>nd</sup> Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
- The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
- 6. The Chairperson, TNPC Board, 76, Mount Salai, Guindy, Chennai-32.
- 7. The District Collector, Tiruvannamalai District.
- 8. The Commissioner of Geology and Mines, Guindy, Chennai 32.
- 9. Assistant Director, Department of Geology & Mining, Tiruvannamalai District.
- 10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
- 11. File Copy.