

सत्यमेव जयते

F.No.J-11015/173/2018-IA-II (M)
Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division

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Date: 7th July, 2021

To

M/s Tamil Nadu Cement Corporation Ltd
Ariyalur, Perambur Purasaivakkam
Chennai
Tamil Nadu- 621 729

Sub: Proposal under the provision of Notification S.O. 1530 (E) dated 6th April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited- reg.

Sir,

This has reference to the proposal no.IA-TN-IN-183551-2020 of M/s Tamil Nadu Cements Corporation Limited is under the provision of Notification S.O. 1530 (E) dated 6th April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with production capacity of 0.26 MTPA to 1.5 MTPA from the mine lease area 110.685 ha located at village Anandavadi, District Ariyalur, Tamil Nadu. The mining lease area is a part of the Survey of India Topo-sheet No. 58 M/4. The site falls between latitude 11°18'667" to 11°19'083" N to longitude 79°18'67" To 79°19'889" E and falls in seismic zone-II.

2. As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category "A", Project or Activity 1(a) as the mining lease area is more than 100 ha.
3. The ToR was granted by MoEF&CC vide letter no. J-11015/173/2018-IA.II (M) on 18.09.2020. The PP submitted the application for EC on 17th November, 2020. The proposal was considered in 24th EAC meeting held on 11.12.2020 wherein the Committee deferred the proposal due to want of following information:


M/s Tamil Nadu Cement Corporation Ltd., Tamil Nadu

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ADS point 1: The EMP is very generic. It has to be totally revised by indicating the type of impacts, its quantification and the capital investment suggested action-wise in EMP, cost of monitoring till the life of the mine including the plantation.

Reply: Revised EMP has been submitted by PP along with the ADS reply.

ADS point 2: Total excavation has to be properly addressed in the revised submission. Dump stability measures also has to be properly addressed.

Reply: Details of total excavation (Mineral, IB/OB/Topsoil) have been revised as per approved mining plan (1.5 MTPA ROM Limestone and other excavations like 1.14 MTPA of OB/IB/SB, 0.36 MTPA of Top soil quantities totalling to 3 MTPA.). Detailed information has been provided with the ADS reply letter.

Dump Stability Measures:

- The maximum dump height will not exceed 30 Meters, with 3 benches with 10 Meter height each; with terrace floor width not less than 15 Meters.
- At present the height reached is 20 meters with 2 benches and the overall slope is maintained at less than 28 degrees and each bench having slope as per angle of repose.
- Dump bench slope are levelled and consolidated with the help of dozer apart from consolidating top of active dumps with dozers after completion of unloading by tippers.
- Periodical sprinkling on the floor after consolidation is done regularly.
- A spotter (Mate) is kept to supervise the safe unloading operation.
- To avoid erosion / collapse during rainy season, an inverted slope is maintained on all bench floor to enable rain water to drain towards approach end and also below toe of each dump; which in turn is drained again through garland drain and connect to network of garland drain leading to settling pond. Toe wall are provided with safety distance between garland drain and toe of dump.
- Plantation of native species is carried out all along the slope of the inactive dumps and sides of haul road, approach roads of active dumps; with the advise /involvement of district forest office as well as per approved mine plan cum progressive mine closure plan.
- To maintain stability, periodical consolidation of slopes by using mining machinery as the dump progresses and also plantation on ramps, approach and on non-active sides.
- Garland drainage has dimension of 1 metre height, 3 metre width and 600 metre length; with a safety distance of 3 metre from dump toe wall. The Garland drains are connected with settling ponds for desilting prior to final discharge to nearby seasonal nallah.
- The damaged part of dump has been corrected and photographs have been submitted.

- Reclamation of waste dumpsites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

ADS point 3: The protection measures all along the road are not properly documented for the transport route of 15 km from mine to the plant. Plantation along the road has to be included. If the road is passing through the villages, indicate the protection measures to be taken for the same.

Reply:

- All Limestone carrying vehicles used in Anandavadi Mines have inbuilt speed governor to maintain speed within the limit and all loaded vehicles are covered with tarpaulin to prevent spillage of materials along the transport roads. (Refer Images In section B below)
- Regular Water Sprinkling is done on approach road / main haulage road leading to tar road from mine area and twice a day all along the transporting road (15km) to suppress the dust.
- Placement of sign board for Traffic Rules, Traffic Symbols, Speed breakers, Barricades• at vulnerable points wherever the truck is passing by a village (Kallankurichi, & kadugur) all along the transport route from mines to factory.
- The roads passing through outskirts of villages have proper concreted roads and black topped in rest of roads.
- TANCEM regularly does maintenance works like clearing of bushes, repair of pot holes, regular water sprinkling all along the transit route (15kms) between mines and plant; their-by ensuring safe roads for materials transport.
- TANCEM is maintaining plantation on both sides of road in village areas for dust control, and plantation of Additional 3000 Nos of native species on both sides of the road all along the 15 kms has been initiated.(Refer Images in section B).
- Other safety arrangements for safe transportation of minerals from mines to plant include;
 - A permanent weigh bridge is available in the mines which help to ensure minimum carrying capacity of the road. Thereby affordable load is maintained while transporting limestone in the public road. Maintaining adequate gap at least 200 m between each vehicle to prevent the adverse impact of sound and dust along with less chances of accidents.
 - Adequate supervision made to monitor the gap of transport vehicles.

ADS point 4: The project proponent needs to submit the revised conservation plan duly approved by the PCCF.

Reply: PP submitted the letter to PCCF, Chennai vide letter no. TANCEM/MINES/CO/ASLM/G.O. 624/FOREST/2021 dated 17.02.2021 requesting to



authenticate the wildlife conservation plan. Approved revised conservation plan has not been submitted by PP yet.

ADS point 5: The project proponent needs to submit the safeguard measures for the temple observed in the mine lease area.

Reply: The required safeguard measures for the temple observed in the mine lease area will be as follows:

- The concrete wall around the temple has been erected with the dimension of 55 feet length X 55 feet width at 6 feet height. The road is given for public to enter into temple. The cost of expenditure incurred was Rs.1 lakh.
- Security guard is already engaged in order to ensure the safety of the temple.
- No mining operation done up to 45 m from the temple as per Regulation 109 of the Metalliferous Mines Regulation 1961.
- No drilling and blasting is carried out, only rock breaker are used for breaking the limestone. Hence, no impact due to fly rock, noise and vibration.

5. The project proponent submitted that the mining lease over an area of 110.685 ha has been granted for a period of 30 years and approved vide letter no. G.O. (MS) No. 624 dated 23.09.1998, for the period of 30 years. Subsequently, the lease deed was executed on 16.03.2000, and got registered on 13.07.2001 and the period is valid up to 16.03.2030. As per the amendment in MMDR Act-1957 came in to existence on dated 12.01.2015 where the validity of this lease is deemed to be extended till 16.03.2050.

6. The project proponent submitted that the scheme of mining for G.O. Ms. No. 624, dated 23.09.1998 over an extent of 110.68.5 ha has been approved by Indian Bureau of Mines under Rule 12(3) of MCDR 1988 for the period 2016-17 to 2020-2021 vide approval No. TN/ALM/LST/MS-1300-MDS, dated 25.01.2016. Hence the present modification to the approved Mining Plan is prepared for the period 2018-19 to 2020-21 under Rule 17(3) of MCR-2016.

7. The project proponent submitted that the mining will be carried out opencast, fully mechanized, adopting non-conventional method by deploying rock breaker for primary and secondary breaking eliminating drilling and blasting thus adopting eco-friendly mining. The life of is 13 years with respect to present proposed production rate. PP submitted that there is no change in the working process. No drilling and blasting is involved.

8. The project proponent submitted that the total water requirement will be 20.7 KLD which shall be met from water tanker through reservoir at G.O. 344. The domestic water demand has been calculated as drinking and sanitation 1.2 KLD and for dust suppression 9 KLD, Green belt development 10.5 KLD.

9. The project proponent submitted that plantation: 54750 Nos @ 1500 per ha of 33% of the project area (110.685 Ha).

S.No	Particulars	Area
1	Mine lease area	110.685
2	33% of the mine lease area	36.5
3	Life of mine	13 years
4	Total Number of Plant to be planted@ 1500 plant/ ha	54750 Nos.
5	Plantation for each year	4211 Nos say 4200.
6	Survival @ of 80% per year	3360

10. The project proponent submitted that no Forest Area/Protected Area within the lease area. Pavocristatus (Indian Peafowl) has been found near the site. PP submitted the letter to PCCF, Chennai vide letter no. TANCEM/MINES/CO/ASLM/G.O. 624/FOREST/2021 dated 17.02.2021 requesting to authenticate the wildlife conservation plan. Approved revised conservation plan has not been submitted by PP yet.

11. The project proponent submitted that the baseline data was collected during March – May 2018 (Pre- Monsoon period).

12. The project proponent submitted that the public hearing was conducted on 24/10/2019

13. The Project proponent submitted that safety occupational hazards involved in mines are related to dust pollution, noise pollution, injuries from equipment, fall from high places etc. All necessary first aid and medical facilities will be provided to the workers. The mine will be well equipped with proper fire protection and firefighting equipment. All operators and mechanics will be trained to handle fire-fighting equipments. Further all the necessary protective equipments such as safety shoes, helmets, safety goggles, earplugs, earmuffs, etc. will be provided to persons working in mines as per The Mines Rules, 1955.

14. The Project proponent submitted that there is no displacement of people from their respective areas due to mining activity is restricted to lease existing ML area and no habitation in the lease area therefore rehabilitated & resettled (R&R) plan is not be applicable.

15. The project proponent submitted that the existing environment management plan (EMP) capital cost is Rs.46.25 Lakhs and recurring cost is Rs.18.53 Lakh per annum. The recurring cost for Corporate Environment Responsibility is Rs. 1 Lakh per annum.

16. The Project Proponent submitted that there is no litigation is pending against the project.

17. The Project Cost is Rs. 1 Crore. The employment generation is 41 persons.

18. The proposal was considered in the 30th EAC meeting held during 6-8th March, 2021. The Committee noted that in 2010 TANCEM entered into an agreement with TNPL (Tamil Nadu Newsprint Limited-Govt. Of Tamil Nadu Company) for plantation of Eucalyptus in an area of 200 acres (81 Ha) for 12 years period. However, TANCEM later learnt that only native species plantation will be considered for greenbelt development. Accordingly, TANCEM management decided to pre-close the agreement with TNPL due to which the harvest started early (Cutting of tree at bottom of main stem not complete removal of plant) and completed harvest in 2018. PP was not able to mention that how many trees were cut and sold during the presentation.

19. After detailed deliberations made by the Project Proponent and the Consultant, the Committee Recommended the proposal under the provision of Notification S.O. 1530 (E) dated 6th April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited.

20. The Ministry has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto; and after accepting the recommendation of 30th meeting of the Expert Appraisal Committee for Environmental Appraisal of Mining Projects (Non-Coal) held during 6th-8th April, 2021. Based on the documents submitted and presentation made by the Project Proponent and the Consultant, the Committee recommended the proposal for grant of Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited with the following specific conditions and standard conditions subject to compliance of the followings terms and conditions and environmental safeguards mentioned below.

A. Specific conditions

- i. The project proponent must give an undertaking to comply to EC condition related to green belt development and gap plantation along lease boundary as well as carry out plantation on dump, along avenue, haul road and on closed pits using "tall " (6 ft) seedlings within 6 months from date of grant of EC.
- ii. The project proponent informed that they had entered into an agreement with TNPL for plantation as part of EC compliance. However, on realising that Eucalyptus cannot comply with the plantation norms, the TNPL were allowed by PP to cut the trees. But the PP could not give the information regarding the

number of trees cut and sold and its actual worth. PP must give an undertaking mentioning the above-mentioned information along with all the necessary permissions from the concerned authority.

- iii. The Project Proponent shall use hydraulic rock breaker for mining operation.
- iv. PP shall take necessary steps to avoid the fugitive dust emission due to mining activities and vehicle movement. The roads shall be regularly cleaned and maintained in proper conditions by the project authorities.

B. Standard conditions

I. Statutory compliance

- (1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (2) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (4) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- (5) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- (6) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- (7) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (8) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- (9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining

- Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area”.
- (10) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
 - (11) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
 - (12) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
 - (13) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
 - (14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, project proponent shall apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- (1) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (2) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation

of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- (1) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (2) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (3) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (4) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies

during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (5) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- (6) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
- (7) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- (8) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- (1) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (2) The illumination and sound at night 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. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

- (3) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining plan

- (1) 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 mineral, waste, over burden, inter 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.
- (2) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (3) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

VI. Land reclamation

- (1) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the

guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

- (2) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. 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.
- (3) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (4) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (5) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- (6) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (7) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- (8) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- (1) 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.
- (2) 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 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.

VIII. Green Belt

- (1) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- (2) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also



be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

- (3) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (4) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (5) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- (1) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.
- (2) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

- (3) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- (4) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.
- (5) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (6) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (7) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status

Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

The Project Proponent shall submit the time-bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

XI. Miscellaneous

- (1) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (2) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (3) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- (4) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- (5) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.

21. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

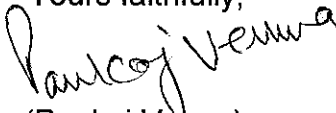
22. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attracts action under the provisions of Environment (Protection) Act, 1986.

23. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders

passed by the Hon'ble Supreme Court of India/ High Court of Chhattisgarh and any other Court of Law relating to the subject matter.


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

25. This issues with the approval of Competent Authority.

Yours faithfully,

(Pankaj Verma)
Scientist E

Copy to:

- (1) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi-110 001.
- (2) The Secretary, Department of Mines & Geology, Government of Tamil Nadu, Secretariat, Chennai.
- (3) The Secretary, Department of Environment, Government of Tamil Nadu, Secretariat, Chennai.
- (4) The Secretary, Department of Forests, Government of Tamil Nadu, Secretariat, Chennai.
- (5) The Chief Wildlife Warden, Forest Department, Chennai.
- (6) The Dy. Director General of Forests, Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), 1st & 2nd Floor, Handloom Ex[po]rt Propomotion Council, 34, Cathedral Road, Nungambakam, Chennai-34
- (7) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110 032.
- (8) The Member Secretary, Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110 011.
- (9) The Chairman, Tami Nadu State Pollution Control Board, 76, Mount Salai, Gundy, Chennai- 32
- (10) The Controller General, Indian Bureau of Mines, Indira Bhawan, Civil Lines, Nagpur- 440 001.
- (11) The District Collector, Ariyalur District.
- (12) Guard File.
- (13) MoEF&CC Website.


(Pankaj Verma)
Scientist E

