

Chettinad Cement/ Tamilnadu/Arungal Mine
/EC Compliance/ Oct'2021 - Mar'2022/2021-22/ 84

26th May, 2022

The Joint Director
Ministry of Environment, Forest & Climate Change
Government Of India,
IRO, 1st Floor, Additional Office Block for GPOA,
Shastri Bhawan,
Haddows Road, Nungambakkam
Chennai - 600 006.

Sir,

Sub: Submission of Six Monthly Environmental Clearance Compliance & Environmental Monitoring Reports (Oct'2021 - Mar'2022) – Arungal Limestone Mine (67.73 ha) of Chettinad Cement Corporation Private Limited at Arungal Village, Ariyalur Taluk & District, Tamilnadu –Capacity of 0.8 million tons per annum

Ref: EC amendment granted by MoEF vide Letter No. J-11015/206/2009 -IA II.(M) dated 01.01.2020

We enclose herewith the Six Monthly Environmental Clearance Compliance & Environmental Monitoring Reports pertaining to our Arungal Limestone Mine (67.73 ha) with a capacity of 0.8 million ton per annum at Arungal Village, Ariyalur Taluk & District, Tamilnadu, for the period from Oct'2021 - Mar'2022.

- a. Environmental Clearance Compliance Report Annexure 1
- b. Environmental Monitoring Report comprising of
 - i. Ambient Air Quality Monitoring - Consolidated Report - Annexure 2
 - ii. Noise Level Monitoring - Consolidated Report - Annexure 3
 - iii. Ground Water Quality Monitoring Report- Annexure 4

Yours faithfully,
for Chettinad Cement Corporation Private Limited


A. Amalraj
Joint President (Works)

Copy to :
Regional Directorate, CPCB, Chennai
Member Secretary, TNPCB, Chennai.
JCEE, TNPCB, Trichy
DEE, TNPCB, Ariyalur

Chettinad Cement Corporation Private Limited

Arungal Limestone Mine
Arungal Village, Ariyalur Taluk & District, Tamilnadu

Environmental Clearance Amendment Compliance Report (Oct-21 – Mar-22)

EC amendment granted by MoEF vide Letter No. J-11015/206/2009 -IA II.(M) dated 01.01.2020 for a Limestone Mining Capacity of 0.8 million ton per annum over a Mining Lease Area of 67.73 ha)

Standard conditions: As Ministry's O.M. No 22-34/2018 –IA.III dated 08.01.2019

I	Statutory Compliance	Compliance Status
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.	Conditions noted.
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.	Conditions noted.
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.	Conditions noted.
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.	<p>With reference to the MoEF notification (S. O. 1909(E) dt. New Delhi, the 31st May, 2019, the extent of Karaivetti Eco-sensitive Zone varies from 0.105 kilometers to 0.891 kilometers around the Karaivetti Bird Sanctuary and our Arungal Limestone mines falls at 3.7 KM i.e. out of Eco sensitive Zone of Karaivetti bird Sanctuary.</p> <p>We received a letter from Principal Chief Conservator of Forests, Chennai for Karaivetti Bird Sanctuary location vide letter Ref. No. WL5[A]/34791/2019 dt: 20.08.2019, directed District Forest Officer to examine the condition.</p> <p>Based on the above PCCF letter, we received a NOC letter from District Forest Officer vide letter No.: C No.488/2012/P dt:</p>

		13.09.2019, stating that, "the project site is located away from the Eco sensitive zone Boundary of Karaivetti bird sanctuary".
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.	Forest Clearance is not applicable for our 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.	We have obtained Consent to Operate from Tamil Nadu State Pollution Control Board vide Air Consent order No. 2004231574141 Water Consent order No. 2004131574141 dt. 11.09.2020 and the conditions stipulated being effectively implemented.
7	The PP shall adhere to the provision of the Mines Act,1952, Mines and Mineral (Development & Regulation), Act,2015 and rules & regulations made thereunder. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.	Conditions noted.
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.	The precise area communication stating the Survey Numbers and their extent defining the Mining Lease Area had been issued vide Letter No 10047/MM1/2008 dated 01.06.2009 and subsequently the Mining Lease has been granted vide Rc No.10047/MM1/2008 dated 19.03.2012 by Department of Geology & Mining of the State Government of Tamil Nadu for granting approval for the proposed Limestone Mining.
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". (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".	Guidelines Noted.
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	We have obtained No Objection Certificate from Public Work Department, Water Resources department, Chennai, for withdrawal of Ground water from own Bore

	for the project.	well vide ref. No: Lr. No.: OT 8/AG-2/275/ Renewal of NOC/ Trichy/2022 dated: 22.04.2022.
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.	A copy of the Environmental Clearance letter sent to concerned Arungal Panchayat.
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.	Guidelines Noted.
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.	We advertised in Dinamani, (Tamil News paper), in Indian Express, (English News paper) on 06.01.2020 as mentioned in the conditions. The advertisement copy in both Tamil & English uploaded online.
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 than mining operation shall only be carried out after transfer of EC as per provisions of the Para 11 of EIA Notification, 2006 as amended from time to time.	Condition noted.
II	Air quality monitoring and preservation	Compliance status
15	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	We installed online Monitoring stations & the monitored data will be displayed in the Mine site. Ambient Air quality monitoring being carried out with NABL accredited external agency periodically at a regular interval for the location in consultation with the Tamil Nadu Pollution control Board guidance. Reports being submitted to TNPCB on regular basis.

	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.	
16	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.	<p>The following control measures were adopted to control the dust level.</p> <ol style="list-style-type: none"> Water Sprinkling by water tanker while handling materials containing finer particles Water sprinkling by water tanker on the haul roads within the mine area. Covering of materials with tarpaulin before commencement of transport Ensuring Speed Control Avoiding overloading Good maintenance of vehicles and mining machinery <p>There will be no transfer points as no conveyor has been planned. The Ambient Air Quality parameters were monitored and confirmed to the norms prescribed by the Central Pollution Control Board.</p>
III	Water quality monitoring and preservation	Compliance status
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 MoEF&CC 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.	The mining operations will be restricted to above ground water table and it will not intersect the groundwater table at any point of time.
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	<p>We will not disturb any water bodies in and around the village and we will provide the harvested water to the villagers during the scarcity in that area.</p> <p>The periodic monitoring, at least four times in a year as stipulated will be carried out.</p> <p>The data thus collected will be sent regularly to the Ministry of Environment,</p>

	<p>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.</p>	<p>Forest and Climate Change and its Regional Office at Chennai, Central Ground Water Authority and the Regional Director, Central Ground Water Board.</p>
3	<p>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.</p>	<p>Regular monitoring of ground water level and quality carried out in and around the Mining Lease Area by establishing a network of existing wells and with installed Piezometers.</p> <p>The periodic monitoring, at least four times in a year as stipulated will be carried out.</p> <p>The data thus collected will be sent regularly to the Ministry of Environment, Forest and Climate Change and its Regional Office at Chennai, Central Ground Water Authority and the Regional Director, Central Ground Water Board / State Pollution Control Board.</p> <p>If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures will be carried out.</p>
4	<p>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-a-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</p>	<p>Regular monitoring of ground water level and quality carried out in and around the Mining Lease Area by establishing a network of existing wells and with installed Piezometers.</p> <p>The periodic monitoring, at least four times in a year as stipulated will be carried out.</p> <p>The data thus collected will be sent regularly to the Ministry of Environment, Forest and Climate Change and its Regional Office at Chennai, Central Ground Water Authority and the Regional Director, Central Ground Water Board / State Pollution Control Board.</p> <p>If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures will be carried out.</p>

	<p>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.</p>	
5	<p>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.</p>	<p>The domestic effluent generated will be treated in septic tank, followed by dispersion trench. Dimension of the septic tank [5.6X2.15X1.3] & Dispersion trench [3X2.4X1] provided. There will not be any generation of effluent water from mining and there will not be any discharge of polluted water from leasehold. Hence, the need to monitor effluent is not envisaged.</p>
6	<p>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.</p>	<p>Rainwater harvesting measures like garland drains/catch drains were provided to divert and collect the rainwater in the Mine Pit Sump at the bottom most bench and augment groundwater resources.</p>
7	<p>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.</p>	<p>No workshop has been planned within the Mine Lease Area. Mining operations do not generate any waste water. Hence, the requirement of providing oil and grease trap is not envisaged.</p>
8	<p>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.</p>	<p>Noted.</p>

IV	Noise and vibration monitoring and preservation	Compliance status
9	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	As non-conventional open cast method of mining will be adopted, no drilling and blasting are involved. Hence, this condition is not applicable.
10	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.	As per the approved mining plan, Mining operations were carried out without disturbing the villages in respect of both human and animal population.
11	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.	Measures like silencers, greenbelt along the boundary of ML Area, etc., are provided and Mining Machinery and Vehicles were maintained properly for controlling noise level below 85 dBA in the work environment. Ear Plugs/Muffs were provided to the operators of HEMM.
V	Mining Plan	Compliance status
12	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 to Short Term Permit (STP), Query license or any other	<p>No change in mining technology and scope of working will be made without prior approval of the Ministry of Environment, Forests and Climate Change.</p> <p>No change in the calendar plan including excavation, quantum of mineral Limestone and Marl and waste was made without getting prior approval from concerned authorities.</p>

	name.	
13	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.	A Final Mine Closure Plan along with details of Corpus Fund will be submitted to the Ministry of Environment ,Forest and Climate Change, 5 years in advance, prior to the final mine closure for approval.
14	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-a-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.	We will carry out the mining activities as per approved Mining Plan. Compliance statement will be sent to the MoEF&CC half yearly.
VI	Land Reclamation	Compliance status
15	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.	The Overburden will be stored at earmarked site only and will be utilized for green belt development.Adequate safeguards like retention wall and trenches being maintained.
16	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.	The Reject/waste was stored at earmarked site only with proper slope and adequate safeguards are carried out as per approved Mining plan.
17	The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.	The reclamation of waste dump will be carried out in scientific manner as per approved mining plan
18	The slope of dumps shall be vegetated in	

	<p>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.</p>	<p>Proper slope has been maintained and native species saplings were planted to avoid the erosion and surface runoff.</p>
19	<p>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.</p>	<p>We are maintaining the height of the dump less than 30 Mtrs as per Approved Mining plan. Hence, this condition is not applicable.</p>
20	<p>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.</p>	<p>We have constructed Catch drains, settling tanks and siltation ponds in around the mine working, mineral yards and Top Soil/OB/Waste dumps. The collected water will be utilized for watering the mine area, roads, green belt development, plantation etc.</p>
21	<p>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.</p>	<p>We constructed Check Dams in around the mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies.</p>
22	<p>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.</p>	<p>The top soil will be stored at earmarked site only with proper slope and adequate safeguards like retention wall, trenches and gully plugs. The top soil will be used for greenbelt development.</p>

	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	Compliance status
23	<p>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.</p>	<p>No Transportation of minerals carried out through village road. An approach road constructed from the mine area to the highways road. Regular water sprinkling being carried out to controlled the dust emission. Pollution under control certificate being regularly obtained from the transporters.</p>
24	<p>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</p>	<p>The following control measures will be adopted to control the dust level.</p> <ol style="list-style-type: none"> Water Sprinkling by water tanker while handling materials containing finer particles Water sprinkling by water tanker on the haul roads within the mine area. Covering of materials with tarpaulin before commencement of transport Ensuring Speed Control Avoiding overloading Good maintenance of vehicles and mining machinery <p>There will be no transfer points as no conveyor has been planned.</p>

VIII	Green Belt	Compliance status
25	<p>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.</p>	<p>The greenbelt development work is commenced. Herbs and shrubs will also form a part of afforestation programme.</p> <p>Total Mining Lease Area : 67.73 ha Total saplings Planted : 5075 Total Covered Area (Ha) : 2.03 Ha Tree Density (planned) : 2500 /ha</p> <p>Areas proposed to be developed With greenbelt : Safety barrier, along the boundary, OB dump</p> <p>The native species planned to be planted are</p> <ol style="list-style-type: none"> Neem Pongan Vembu Pouvarasa Illupai Teak Tamrind <p>The greenbelt development will be completed within 5 years from the date of commencing mining activity.</p> <p>Details of year wise afforestation programme will be submitted to the Ministry within six months from the date of commencing mining activity.</p>
26	<p>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.</p>	<p>We have carried out plantation /afforestation in back filled and reclaimed area simultaneously as per mining approved mining plan with consultation Forest Department/Agriculture Department/ Rural development department.</p> <p>The density of the trees 2500 saplings per Hectare will be followed strictly as per CPCB guidelines.</p>
27	<p>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</p>	<p>In our patta land near by lease area, we are developing Green belt for grazing land.</p>

	regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should bescrupulously guarded/ protected against felling and plantation of such trees should be promoted.	
28	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.	Endangered flora and fauna and schedule –I species not available in our Mining lease area.
29	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.	Guidelines Noted.
IX	Public hearing and human health issues	Compliance status
30	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.	A doctor, trained in occupational health is in-charge of the First Aid Centre. Awareness Programme on Occupational Health, Diseases and Safety measures will be conducted on regular basis. Occupational health and safety measures for the workers including identification of work related health hazards and the protective measures ensured. Occupational health surveillance programme of the workers undertaken periodically to observe any abnormality due exposure to respirable mineral dust and take corrective measures, if needed. Surveillance Health records of the workers being maintained. Review of impact of various health measures undertaken (at interval of five years) conducted and will be followed up wherever required.
31	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	For all mining operations, Hazard identification and Risk Assessment was carried out to identify the Risk and mitigating measures were taken to ensure Zero harm. Awareness Programme on Occupational Health, Diseases and Safety measures being conducted on regular basis.

	<p>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.</p>	<p>Occupational health and safety measures for the workers including identification of work related health hazards and the protective measures being ensured. Occupational health surveillance programme of the workers undertaken periodically to observe any abnormality due exposure to respirable mineral dust and take corrective measures, if needed. Surveillance Health records of the workers will be maintained. Review of impact of various health measures undertaken (at interval of five years) conducted and will be followed up wherever required.</p>
32	<p>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).</p>	<p>We are following all medical test in Initial medical examination(IME) and Periodical medical examination(PME)</p> <p>Awareness Programme on Occupational Health, Diseases and Safety measures conducted on regular basis. Occupational health and safety measures for the workers including identification of work related health hazards and the protective measures ensured.</p> <p>Occupational health surveillance programme of the workers undertaken periodically to observe any abnormality due exposure to respirable mineral dust and take corrective measures, if needed.</p> <p>Surveillance Health records of the workers being maintained.</p> <p>Review of impact of various health measures undertaken (at interval of five years) conducted and will be followed up wherever required.</p>
33	<p>The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant</p>	<p>We are following all medical test in Initial medical examination(IME) and Periodical medical examination(PME)</p>

	<p>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.</p>	<p>Surveillance health records of the workers being submitted to MOEF &CC.</p>
34	<p>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.</p>	<p>Personnel working in the mine are given adequate training, information on safety and health aspects. and provided with required Personal Protective Equipment (PPE).</p> <p>Occupational health surveillance program of the workers being undertaken periodically to observe any abnormality due to exposure to dust and take corrective measures, if needed.</p>
35	<p>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.</p>	<p>Only the construction of toilet & septic tank and an office shed is involved in this project. The workers from nearby the villages will be engaged for the same. Hence, housing for the construction labourers is not envisaged. However, safe drinking water, medical health care etc., ensured for the Mine labourers.</p>
36	<p>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</p>	<p>We will address the issue raised in public hearing from CER fund and report will be submitted to the Ministry.</p>

	Regional Office of the Ministry along with District Administration.	
X	Corporate Environment Responsibility(CER)	Compliance status
37	The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.	We already completed infrastructure facility to Arungal Government High School for an Amount of Rs. 2.0 Lakh For balance CER fund of Rs. 22 Lakh, We planned to complete the CER activities in 3 years period.
38	Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.	The funds earmarked for environmental protection measures will be kept in separate account and will be used to implement the Environment Management Plan as furnished in the EIA Report. The funds so provided will not be diverted for any other purpose.
XI	Miscellaneous	Compliance status
39	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.	We will prepare digital map of the entire lease area and report will be submitted to Regional Office of the MoEF&CC.
40	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.	Noted
41	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEF&CC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.	Six monthly EC compliance report is being submitted by email, to the Regional Office of MoEF & CC, Chennai, CPCB & TNPCB. The status of compliance of the stipulated environment clearance conditions is being uploaded in our website. The environmental monitoring of various parameters will be commenced and the monitored data will be submitted to the Regional Office of MoEF & CC, Chennai, CPCB & TNPCB in hard copy as well as by emails and will also be uploaded in the company website.

42	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, MoEF&CC.	A separate Environmental & Safety Cell will be set up to take care of EHS function for complying with environmental and safety regulations and implementing pollution control, safety and occupational health protection measures. The Head of the Cell will be directly reporting to the Head of the Organization.
43	The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.	Full cooperation will be extended to the officer (s) of the Regional Office by furnishing: the requisite data / information / monitoring reports.

For Chettinad Cement Corporation Private Limited



A. Amalraj

Joint President (Works)



Chettinad Cement Corporation Private Limited - Arungal Limestone Mine						
Arungal Village , Ariyalur District, Tamilnadu State						
Ground Water Quality Monitoring Report(October 2021 -March 2022)						
S.No	Parameter	UoM	GW1 Dec-21	GW2 Dec-21	GW3 Dec-21	Limit
1	pH		6.7	8.0	8.0	5.5 - 9.0
2	Temperature	Deg C	29.5	30.6	31.1	40
3	Particle size for TSS	-	100%	100%	100%	Shall pass 850 micron IS Sieve
4	TSS	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	100
5	TDS	mg/l	9434	827	874	2100
6	Chloride as Cl	mg/l	4296	290	300	1000
7	Sulphide as S	mg/l	BLQ	BLQ	BLQ	2
8	Sulphate as SO ₄	mg/l	944.8	117.4	124	1000
9	Fluride as F	mg/l	0.37	0.14	0.16	2
10	Sodium	mg/l	1640	87	88.2	-
11	Copper	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	3
12	Zinc as Zn	mg/l	BLQ	BLQ	BLQ	1
13	Phenolic compounds as C ₆ H ₅ OH	mg/l	BDL(DL:0.001)	BDL(DL:0.001)	BDL(DL:0.001)	1
14	Oil & Grease	mg/l	BLQ	BLQ	BLQ	10
15	Boron as B	mg/l	0.712	0.312	0.218	2
16	BOD 3 days 27°C	mg/l	BLQ	BLQ	BLQ	30
17	COD	mg/l	BLQ	BLQ	BLQ	250
18	Total Residual Chlorine	mg/l	BLQ	BLQ	BLQ	1
19	Arsenic as As	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.2
20	Cadmium as Cd	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	2
21	Total Chromium as Cr	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	2
22	Hexavalant Chromium	mg/l	BLQ	BLQ	BLQ	0.1
23	Lead as Pb	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.1
24	Selenium as Se	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.05
25	Mercury as Hg	mg/l	BLQ(LOQ:0.0005)	BLQ(LOQ:0.0005)	BLQ(LOQ:0.0005)	0.01
26	Pesticides	mg/l	BLQ	BLQ	BLQ	---
27	Free Ammonia as NH ₃	mg/l	BDL(DL:0.5)	BDL(DL:0.5)	BDL(DL:0.5)	5
28	Dissolved Phosphate as P	mg/l	BLQ	BLQ	BLQ	5
29	Total Kieldahl Nitrogen as N	mg/l	BLQ	BLQ	BLQ	100
30	Cyanide as CN	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL
31	Nickel as Ni	mg/l	BLQ	BLQ	BLQ	3
GW1 : Mines Ground Water						
GW 2 : Karaivetti Village			BLQ: Below Qualification Limit.			
GW3 .Poyyur Village			BDL : Below Detectable Level			

for Chettinad Cement Corporation Private Limited



A Amalraj
Joint President (Works)



ANNEXURE 2

Chettinad Cement Corporation Private Limited -Arungal Limestone Mine													
Arungal Village , Ariyalur District, Tamilnadu State													
Ambiant Air Quality Monitoring- Consolidated Report (October 2021 -March 2022)													
S.No	Location	PM ₁₀ (µg/m ³)			PM _{2.5} (µg/m ³)			SO ₂ (µg/m ³)			NOx (µg/m ³)		
		Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
1	Mines Office	54.5	45.1	49.5	24.7	16.5	20.2	18.1	8.7	12.6	25.3	12.9	17.9
2	Mines Haul Raod	53.2	48.9	51.5	22.3	18.7	20.7	14.5	7.9	11.9	26.9	14.6	19.2
3	Arungal Village	58.7	44.4	53.8	23.5	16.3	20.2	15.6	9.0	11.4	26.0	14.2	19.9
4	Poyyur Village	60.6	44.9	53.5	24.8	14.7	21.0	14.8	8.9	11.1	23.2	13.9	17.7
5	Sathamangalam Village	56.6	51.8	54.2	22.2	14.8	18.5	8.9	8.6	8.8	21.6	16.0	18.8
6	Puthur Village	53.1	44.4	48.8	24.3	15.8	20.1	11.8	11.6	11.7	21.9	12.3	17.1
7	Mallanthankulam Village	55.2	47.2	51.2	24.3	19.7	22.0	14.1	12.2	13.2	19.3	15.3	17.3
8	Karaivetti Village	47.2	47.2	47.2	17.6	17.6	17.6	12.8	12.8	12.8	17.9	17.9	17.9
Norm		100 µg/m ³			60 µg/m ³			80 µg/m ³			80 µg/m ³		

for Chettinad Cement Corporation Private Limited


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Chettinad Cement Corporation Private Limited -Arungal Limestone Mine								
Arungal Village , Ariyalur District, Tamilnadu State								
Noise Level Monitoring- Consolidated Report (October 2021 -March 2022)								
S.No	Location	UoM	Day			Night		
			L _{min}	L _{max}	L _{eq}	L _{min}	L _{max}	L _{eq}
Within the Premises								
1	Mines Office	dB(A)	57.3	65.0	60.5	53.5	58.6	55.9
2	Haul Road	dB(A)	59.3	68.1	63.5	54.1	59.9	56.5
Limit (L _{eq})		dB(A)	85			85		
S.No	Location	UoM	Day			Night		
			L _{min}	L _{max}	L _{eq}	L _{min}	L _{max}	L _{eq}
Outside the Premises								
1	Arungal Village	dB(A)	49.6	53.7	51.9	41.0	42.7	42.3
2	Karuvidaicheri Village	dB(A)	50.6	53.7	52.6	43.0	44.4	43.0
Limit (L _{eq})		dB(A)	55			45		

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