Chettinad cement

Through: Courier

**Ref: CCCPL/ KW/ENV/2019-20/EC Compliance /2nd Half/** **21st May, 2020**

To
The Director
Ministry of Environment, Forest and Climate Change
Regional Office (SZ)
Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road
Koramangala, II Block, Bangalore – 560 034

Dear Sir,

Sub: Submission of Half yearly Environmental Clearance Compliance report for the period (Oct'19 to Mar'20) *2nd Half* of Chettinad Cement Corporation Private Limited, Integrated Cement Plant (2.5 MTPA), Captive Power Plant (30 MW) and Captive Limestone Mine (4 MTPA) at Kallur Village, Chincholi Taluk, Kalaburagi District , Karnataka -reg

Ref: MoEF letter F.No. J-11011/399/2008-IA-II(I) Dated 18th June, 2010-reg

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This is with reference to the above cited subject matter; we are here by submitting the Half yearly compliance report of Cement Plant and Captive limestone mines at Kallur Village, Chincholi Taluk, Kalaburagi District, Karnataka for the period Oct-2019 to Mar-2020 (*2nd Half*) along with **Annexures-1 to 8.**

**A.** All EC Compliance Report - **Annexure -1**

**B.** Environmental Monitoring Report (Oct'18 – March '19) comprising of

- **a.** Ambient Air Quality Monitoring - Consolidated Report – **Annexure -2**
- **b.** Noise Level Monitoring - Consolidated Report – **Annexure -3**
- **c.** Ground Water Quality & Level Monitoring Report- **Annexure -4**
- **d.** Surface Water Quality Monitoring Report- **Annexure -5**
- **e.** Stack Emission Monitoring - Consolidated Report – **Annexure -6**
- **f.** Treated Effluent Quality Monitoring - Consolidated Report – **Annexure 7**
- **g.** CSR Report – **Annexure -8**

Yours faithfully

For **Chettinad Cement Corporation Private Limited**

Devesh Kumar Mishra
Sr. Vice President (Works)

**Chettinad Cement Corporation Private Limited**
Kallur Works, Sangam K Village
Garagapalli Post, Chandapur (SO)
Chincholi (TK), Kalaburagi (Gulbarga) (DT)
Karnataka, Pin - 585305, India
T - 08475 - 295607
E - kallur@chettinadcement.com

CIN : U93090TN1962PLC004947
**Head Office**
4th Floor, Chittinad Towers,
603, Anna Salai, Chennai - 600 006
Tamilnadu, India
T +91 4428292727, 42149955
F +91 4428291558

E : info@chettinadcement.com
www.chettinadcement.com

**CHETTINAD CEMENT CORPORATION PRIVATE LIMITED**
**(Plant & Mines)**
Sangem K & Kallur Villages, Chincholi Taluk, Kalaburagi District **,** Karnataka

**Environmental Clearance (EC) Compliance Report ( Oct '2019 to Mar '2020)**

*EC granted by MoEF vide Letter F.No.J-11011/399/2008-IA II (I) dated 18th Jun 2010 & 5th Mar 2012 for Integrated Cement Plant (2.5 million tons per annum), Captive Power Plant (1 x 30 MW) and Captive Limestone Mine (4.0 million tons per annum, Mining Lease Area 422.940 ha)*

## A . SPECIFIC CONDITIONS

| S.No | Specific Condition | Compliance Status |
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| i. | No construction work at the proposed project site should be started without obtaining prior clearances / approvals for the linked mining component from the Indian Bureau of Mines (IBM) and State Government of Karnataka. A copy of the mining lease approval from the Indian Bureau of Mines (IBM) and State Government of Karnataka should be submitted to the Ministry and its Regional Office at Bangalore before initiating any construction work at site related to mining. | Before commencing the construction work at the Project Site, the following prior clearances / approvals had been obtained.<br>a. Mining Lease from State Government of Karnataka<br>b. Approved Mining Plan from Indian Bureau of Mines<br>c. Consent for Establishment from Karnataka Pollution Control Board<br>The copies of above the mentioned clearances had been submitted to Regional Office of MoEF at Bangalore and MoEF, Delhi . |
| ii. | Rehabilitation and Resettlement Plan for the project affected population including tribals, if applicable, should be implemented as per the policy of the state Government in consultation with the State Govt. of Karnataka. Compensation paid in any case should not be less than the norms prescribed under the National Resettlement and Rehabilitation Policy, 2007. | There is no Rehabilitation and Resettlement involved in this project. Hence, this condition is not applicable. |
| iii. | Permission and Recommendations of the State Forest Department regarding impact of Cement Plant and Mining activities on the surrounding Chincholi reserve forest should be obtained and implemented. Further, conservation plan for the conservation of wild fauna in consultation with the State Forest Department should be prepared and implemented. | Conservation Plan for wild fauna submitted to State Forest Department vide our letter dated 7th Jul 2011 . The recommendations of the State Forest Department received vide letter A4-Forest Department/Chettinad/Limestone/Kallur/CR-21/ 2010-11 dated 18th Jan 2012 had been incorporated in the Conservation Plan and submitted to Forest Department vide our letter dated 21st Feb 2012.The conservation measures are under implementation. |
| iv. | The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the Karnataka Pollution Control Board. At no time particulate emissions from the Cement Plant including Kiln, Coal Mill, Cement Mill | Efficient Bag House/ESP/Pulse Jet Bag Filters had been provided for the stacks/transfer points to control the emission levels below the prescribed standards. Continuous Online Monitors for Particulate Matter have been provided for the Raw Mill/Kiln Stack, Clinker Cooler Stack, Coal Mill |

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| | Cooler and Captive Power Plant (CPP) should not exceed 50 mg/Nm$^3$. Continuous on-line monitors for particulate emissions should be installed. Pyritess, Fluoride and Hg emissions should also be monitored. Interlocking facility should be provided in the pollution control equipment so that in the event of the pollution control equipment not working the respective unit (s) is shut down automatically. | Stack, Cement Mill Stack and Captive Power Plant (CPP) Boiler Stack. *Monthly monitoring report* ***enclosed as Annexure-6***<br><br>As there will not be any Pyritess and Fluoride emissions from Cement and Captive Power Plant, monitoring of these parameters is not required. However, Hg emissions will be monitored.<br><br>Interlocking facility had been provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit (s) gets shut down automatically. |
| v. | Possibilities should be explored for the proper and full utilization of gases generated from the Kiln in Waste Heat Recovery Boiler (WHRB) and a feasibility report should be prepared and submitted to the Ministry and its Regional Office at Bangalore within 3 months from the date of issue of the letter. | Feasibility Report on utilization of gases generated from the Kiln in Waste Heat Recovery Boiler (WHRB) had been prepared and submitted to MoEF, Delhi and Regional Office of MoEF at Bangalore and WHRB has also been commissioned. |
| vi. | Data on Ambient Air Quality (PM 10, SO2, NOx) should be regularly submitted to the Ministry including its Regional office located at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months. The critical parameters such as $PM_{10}$, NOx in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer should be monitored periodically. Further, quality of discharged water should also be monitored [(TDS, DO, PH) and total suspended solids (TSS)]. The monitored data should be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain. | Ambient Air Quality Data ($PM_{10}$, $PM_{2.5}$, $SO_2$, NOx) are being monitored covering the core & buffer zones and reports are being submitted to the MoEF &CC, Regional Office, Bangalore, KSPCB & CPCB, once in six months.***(Enclosed as Annexure-2)***<br><br>As the nearest habitation from the present Mine working location is Kallur Village and is 1500 m away, there will be no adverse effect due to blasting in the mine and therefore peak particle velocities are not being monitored. However, when the mine workings reaches 500 m to the boundary, the monitoring of peak particle velocity will be commenced and carried out regularly.<br><br>As per the numerical estimation done, the peak particle velocity calculated at a distance of 500 m is only 2.5 to 3.0 mm/sec, which is within the permissible limits prescribed by DGMS.<br><br>There is no discharge of any waste water from the premises. However, the quality of treated water is being monitored for TDS, TSS & pH. The monitored data are being uploaded on the website and are also being displayed on a display board near the main gate of the company. |
| vii. | The company should install low NOx burner with Kiln/Calciner for control of NOx emissions below 400 mg/Nm$^3$. | High efficiency low NOx burner had been provided for the Kiln to control NOx emissions. |
| viii. | Secondary fugitive emissions should be controlled within the prescribed limits and | Secondary Fugitive Emissions are being controlled and by providing appropriate control measures as |

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| | regularly monitored. Guidelines / Code of Practice issued by the CPCB in this regard should be followed. | indicated below. Regular monitoring is also ensured.<br>a. Concrete roads for truck movement<br>b. Closed trucks/bulkers/trucks covered with tarpaulin for transporting materials<br>c. Closed storage for Gypsum, Coal<br>d. Closed silos for Fly Ash, Cement & Clinker<br>e. Water Sprinkling arrangements<br>f. Bag Filters at Transfer Points<br>g. Good maintenance of equipment<br>h. Greenbelt along the boundary of the Plant & Mine premises |
| ix. | The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 should be followed. | The National Ambient Air Quality Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 are being followed. |
| x. | Efforts should be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land. All the raw materials including Fly Ash should be transported in the closed containers only and should not be overloaded. Vehicular emissions should be regularly monitored. | All the raw materials are being transported after covering the same with tarpaulin.<br><br>Fly Ash from other nearby Thermal Power Plant are transported in bulkers only.<br><br>No overloading permitted. |
| xi. | Fly ash should be utilized as per Fly Ash Notification, 1999 subsequently amended in 2003. Fly Ash should be stored in ash silo and 100% used in the cement manufacturing. | Fly Ash is being stored in Silo and 100% used in the Portland Pozzolana Cement (PPC) manufacturing. |
| xii. | The company should make the efforts to utilize the high calorific hazardous waste in the Cement Kiln and necessary provisions should be made accordingly. The company should keep the record of the waste utilized and shall submit the details to ministry's Regional Office at Bangalore, CPCB and SPCB. | Latest and high efficiency multi channel burner has been provided to handle the high calorific hazardous waste in the Cement Kiln and necessary permissions are obtained from CPCB and KSPCB for co-processing of hazardous waste. Also the records were being maintained for the utilized hazardous waste and the details are submitting to MoEF & CC Regional Office, Bangalore, CPCB and KSPCB. |
| xiii. | Rainwater harvesting measures should be adopted for the augmentation of ground water at Cement Plant, Colony including check dams at main site. The company must also collect rain water in the mined out pits of Captive Limestone Mine and use the same water for the various activities of the project to conserve fresh water and reduce the water requirement from the ground water. An action plan should be submitted to Ministry's Regional Office at Bangalore within 3 months from date of issue of this | Rainwater harvesting measures such as catch drains/garland drains, gully plugs and ponds provided to collect rainwater and separate solid particles. The rainwater collected in the ponds helps to augment ground water.<br><br>The rain water collected is being used for various activities like dust suppression, greenbelt development to conserve fresh water and reduce the water requirement from the ground water.<br><br>The mined out pit will also be used to collect |

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| | letter.<br><br>Efforts should be made to make use of rain water harvested. If needed, capacity of the reservoir should be enhanced to meet the maximum water requirement. Only balance water requirement should be met from other sources. | rainwater, once the Limestone is fully excavated from the pit.<br><br>An action plan to collect & use rain water and conserve water submitted to Regional Office of MoEF at Bangalore.<br><br>If needed, capacity of the reservoir will be enhanced to meet the maximum water requirement. Only balance water requirement will be met from other sources. |
| xiv. | Total requirement of the ground water from bore wells should not exceed 900 $m^3$ /day. The water stored in the artificial reservoir made in the mine pit should be used maximum to reduce ground water consumption. No effluent should be discharged from the mine to any water body or nearby river. | The ground water drawl from bore wells will not exceed to 900 $m^3$ /day for the existing operations.<br><br>The water stored in the pond at the mine pit being used to a maximum extent to reduce ground water consumption.<br>No effluent is getting discharged from the Mine to any water body or nearby river as there is no industrial effluent generation and the domestic effluent is treated in septic tank followed by dispersion trench. |
| xv. | Detailed hydrological study should be carried out since mining activities are likely to intercept ground water and implementation of recommendations of the detailed hydrological study should be ensured. | Detailed hydro-geological logical had been carried out.<br><br>The recommendations of hydro-geological study are under implementation. |
| xvi. | Permission should be obtained for drawl of ground water from the State Ground Water Board/Central Ground Water Authority as may be applicable in this case. | Permission obtained from Karnataka Ground Water Board for drawl of ground water for the existing operations. |
| xvii. | Top soil, if any, should be stacked with proper slope at earmarked site(s) only with adequate measures and should be used for reclamation and rehabilitation of mined out areas. | The top soil viz., Black Cotton Soil (BCS) is being used for formation of bunds for the rainwater harvesting ponds and also for the formation of bunds along the boundary of the Mining Lease area and the safety zone . The balance BCS will be stacked with proper slope at earmarked site only with adequate measures like retention wall, gully plugs and trenches. The balance BCS available will be used for reclaiming mined out pits. The unreclaimed pits will be left as rainwater harvesting pits. |
| xviii. | The project proponent should ensure that no natural water course should be obstructed due to any Mining and Plant operations. The company should make the plan for protection of the natural water course passing through the plant and mine area premises and submit to the Mininstry's Regional Office at Bangalore. | No natural water course will be obstructed due to any Mining and Plant operations. The protection Plan of natural water course includes, development of safety barrier of 50 m width along the sides of the seasonal nallah with a bund erected with top soil and development of greenbelt in the safety barrier. |

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| xix. | The inter burden and other waste generated should be stacked at earmarked dump site(s) only and should not be kept active for long period. The total height of the dumps should not exceed 30 m in three terraces of 10 m each and the over all slope of the dump should be maintained to $28^0$. The inter burden dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry Of Environment & Forests and its Regional Office, Bangalore on six monthly basis. | There will not be any generation of inter-burden or other wastes from the mines.<br><br>The balance top soil viz., Black Cotton Soil ( BCS), after using for formation of bunds of rainwater harvesting ponds, the safety barriers and bunds along the boundary of the Mining Lease area, will be stacked at specified location adhering to the conditions stipulated by MoEF. The total height of the dumps will not exceed 30 m in three terraces of 10 m each and the over all slope of the dump would be maintained at 38 $^oC$. The slopes of the bunds of rainwater harvesting ponds, boundary and the safety barrier will be planted with native species.<br><br>The balance BCS available, will be used for reclaiming mined out pits. The unreclaimed pits will be left as rainwater harvesting pits. The reclaimed portion of the mined out pit, will be vegetated and the monitoring & management will be continued till the vegetation becomes self-sustaining. Compliance status is being submitted to the MoEF Regional office, Bangalore on six monthly basis. |
| xx. | The void left unfilled should be converted into water body. The higher benches of excavated void /mining pit should be terraced and plantation done to stabilize the slopes. The slope of higher benches should be made gentler for easy accessibility by local people to use the water body. Peripheral fencing should be carried out along the excavated area. | The void left unfilled will be finally converted into water body.<br><br>At the final stage the top benches will be re-graded to form a gentle slope where plantation will also be undertaken.<br><br>Peripheral fencing will be carried out along the excavated area. Considering the safety of the people , they will not be allowed inside the mines area. As a part of CSR initiative, the supply of water to the nearby villages will be taken up. |
| xxi. | Catch drains and siltation ponds of appropriate size should be constructed for the working pit, inter burden and mineral dumps to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly. | There is no inter burden waste generation. The mineral viz., Limestone mined will be directly sent to factory and no storage of the same is envisaged.<br><br>For collecting the rainwater, catch drains of size 0.7m by 0.8 m size , to arrest flow of silt have been provided to prevent solid soil particles reaching rainwater harvesting ponds .The water so collected will be utilized for watering the mine area, roads, green belt development etc.<br><br>The trenches/drains will be regularly desilted, particularly after monsoon, and maintained properly. The silt so collected is used in the |

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| | | afforestation works. |
| xxii. | Garland drain of appropriate size, gradient and length should be constructed for both mine pit and inter burden dumps and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 year data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals. | There is no inter burden waste generation.<br><br>Garland drain of 0.7m width, 0.8m depth with a slope of 1 in 150 have been constructed, which will be extended year after year for the mines and for the soil stacks. 3 ponds with a total combined capacity of 3,00,000 $m^3$ have already been provided in the Mines area to serve as rainwater harvesting structure.<br><br>The sump at the bottom of the pit is used to collect the rainwater falling in the pit. The rainwater falling outside the Mine Pit will be directed to rainwater harvesting ponds through the catch drains/garland drains .Thus , adequate rainwater collection facility is available.<br><br>Pit bottom sump has been provided with adequate retention capacity to allow proper setting of silt material. Since this being a Limestone mine, the Lime particles will act as coagulants for quick settling of particles.<br><br>Sedimentation pits have been constructed at the corners of the garland drains and desilted at regular intervals. |
| xxiii. | Dimension of the retaining wall at the toe of inter burden dumps and inter burden benches within the mine to check run-off and should be based on the rain fall data. | There is no generation of interburden wastes. Hence, inter burden dumps and inter burden benches are envisaged. After using the top soil viz., Black Cotton Soil (BCS) for various bund formation, the balance will be stacked at specified location. This top soil stack will be provided with toe wall / rubble walls of 1.50 m height and 1.50 m width. |
| xxiv. | Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers at suitable locations by the project proponent in and around project area in consultation with Regional Director, Central Ground Water Board. The frequency of monitoring should be four times a year-pre-monsoon (April/May), monsoon (August), post-monsoon (November), and winter (January). Data thus collected should be sent at regular intervals to Ministry of Environment and Forests and its Regional Office at Bangalore, Central Ground water Authority and State Ground Water Board. | Ground water quality and level are being monitored. The data collected, four times a year as stipulated, are being submitted to Ministry of Environment and Forests & Climate Change and its Regional Office at Bangalore, Central Ground water Authority and State Ground Water Board is ***enclosed as Annexure-4***<br><br>Also, piezometers have been installed. The data on ground water level is being submitted to Ministry of Environment and Forests & Climate Change and its Regional Office at Bangalore, Central Ground water Authority and State Ground Water Board. |

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| xxv. | Wet drilling sequential and controlled blasting method and provision for the control air emissions during blasting using dust collectors etc. should be used. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. | Wet drilling is practiced. The blast holes are fired with Electrical Detonators & Detonation Fuse adopting Trunk Line Detonation system. This system allows only one hole i.e. 80 kg, a fraction of the total explosives to blast at a point of time which minimizes boulder generation, frequent toe occurrence, fly rock generation. The charge per delay in the mine will never exceed 400 kg.<br><br>As per the numerical estimation done with this charge per delay, the peak particle velocity calculated at a distance of 500m is only 2.5 to 3.0 mm/sec, which is within the permissible limits prescribed by DGMS. Water spray is provided for the control of air emissions during blasting. |
| xxvi. | Bench height, width and slope for individual bench should be properly assessed and implemented. Adequate measures should be adopted to stabilize the slope before abandonment. The fencing around the reservoir should be provided to prevent accidents. | The bench height for the soil is maintained at 1.7m and that of Limestone bench is 9m each. Width is about 12 m with a working pit slope angle of around $38^{o}$.<br><br>Adequate measures viz., gentle slope, terracing and plantation will be ensured to stabilize the Slope before abandonment.<br><br>Fencing around the rainwater harvesting reservoirs will be provided to prevent accidents. |
| xxvii. | Action plan for the mining, management of over burden (removal, storage, disposal etc.), reclamation of the mined out area and mine closure should be submitted to the Ministry and its Regional Office at Bangalore. | The details of mining and handling of top soil viz., Black Cotton Soil (BCS), as per Mining Plan has been included in the EIA Report submitted to the Ministry and its Regional Office at Bangalore.<br><br>The final mine closure plan will be submitted, 5 years in advance of mine closure.<br><br>The average thickness of BCS is 1.7 m. The BCS removed will be used for forming bunds. The balance BCS, after using for formation of bunds of rainwater harvesting ponds, the safety barriers and bunds along the boundary of the Mining Lease area, will be stacked at specified location with adequate control measures The total height of the dumps will not exceed 30 m in three terraces of 10 m each and the overall slope of the dump would be maintained at $38^{o}$C. The slopes of the bunds of rainwater harvesting ponds, boundary and the safety zone will be planted with native species.<br>The balance BCS available will be used for reclaiming mined out pits. The unreclaimed pits will be left as rainwater harvesting pits. |

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| xxviii | As proposed, greenbelt should be developed in 48 ha in plant & township and 10 ha around the mining area as per the CPCB Guidelines in consultation with DFO. | In consultation with DFO, the greenbelt has been developed over an area of 63.86 ha by planting 1,02,621 saplings **in the Plant area** and over an area of 27.81ha by planting 52,006 saplings **in the Mines area**, following the guidelines of CPCB. |
| xxix | All the recommendations of the Corporate Responsibility for Environment Protection (CREP) for the Cement plants should be strictly followed. | CREP guidelines are complied with. |
| xxx | Vehicular emissions should be kept under control and regularly monitored. Measures should be taken for maintenance of vehicles used in mining operation and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded. | The vehicles with Pollution Under Control Certificate only being permitted inside the mining area. Proper maintenance of vehicles also being ensured. Use of tarpaulin to cover the material to be transported has been made mandatory. No overloading of materials will be permitted. |
| xxxi | Risk and Disaster Management plan along with the mitigation measures should be prepared and a copy submitted to the Ministry's Regional Office at Bangalore, KPCB and CPCB within 3 months of issue of environment clearance letter. | Details of Risk and Disaster Management Plan along with the mitigation measures submitted to CPCB, KSPCB and Regional Office of MoEF at Bangalore. |
| xxxii | Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval. | Final Mine Closure Plan along with details of Corpus Fund will be submitted to the Ministry of Environment, Forest & Climate Change, 5 years in advance of final mine closure for approval. |
| xxxiii | The company should comply with the commitments made during public hearing held on 30th December, 2009 and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional office at Bangalore. | The commitments made in Public Hearing are part of the EMP/CSR. Hence, no separate budget is required. Implementations of EMP & CSR Plan are covered in this compliance report which is submitted regularly to MoEF, Bangalore. *Report enclosed as **Annexure-8**,* |
| xxxiv | At least 5% of the total cost of the project should be earmarked towards the Corporate Social Responsibility and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's Regional Officer at Bangalore. Implementation of such program should be ensured accordingly in a time bound manner. | 5 % of the total cost of the project had been earmarked towards Corporate Social Responsibility (CSR). A time bound action plan with item-wise details prepared and submitted to the Ministry's Regional Officer at Bangalore. Implementation is being ensured. The details of CSR activities that area being carried out are being submitted along with this compliance report to all concerned authorities. |
| xxxv | Provision should be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project. | For the construction labour, within the site, all necessary infrastructure and facilities had been provided. The temporary structures (house) had been removed after the completion of the project. |

## B. GENERAL CONDITIONS

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| i. | The project authority shall adhere to the stipulations made by Karnataka State Pollution Control Board (KSPCB) and the State Government. | Stipulations of Karnataka State Pollution Control Board (KSPCB)/State Government are complied with. |
| ii. | No further expansion or modernization of the plant shall be carried out without prior approval of this Ministry | No further expansion or modernization of the plant will be carried out without prior approval of this Ministry. |
| iii. | Atleast four ambient air quality monitoring stations shall be installed in the downward wind direction as well as where maximum ground level concentration of $PM_{10}$, $SO_2$ and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emissions shall be regularly submitted to this Ministry including its Regional Office and SPCB and CPCB once in six months | 7 number of air quality monitoring stations have been installed in consultation with KPCB. Data on ambient air quality and stack emissions being regularly submitted to MoEF &CC, Delhi, MoEF& CC Regional Office and SPCB and CPCB, once in six months. ***Report enclosed as Annexure-2*** |
| iv. | Industrial Waste water shall be collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. The treated water shall be utilized for plantation purpose. | The industrial waste water is being collected and treated. The quality of treated effluent will conform to standards prescribed.<br><br>Treated water is being used for plantation and dust suppression. |
| v. | The overall noise levels in and around the plant shall be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc., on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environmental Protection Act 1986 viz., 75 dBA ( day time) and 70 dBA (night time) | For all sources of noise generation, control measures viz., acoustic hoods/silencers/ enclosures provided.<br><br>The overall noise levels in and around the plant being kept well within the standards. Ambient Noise level is being monitored at 7 stations.These ambient noise levels conform to the standards prescribed 75 dBA (day time) and 70 dBA (night time), ***the report enclosed as Annexure-3*** |
| vi. | Proper housekeeping and adequate occupational health programme shall be taken up. Occupational health surveillance programme shall be done on a regular basis and records maintained properly atleast for 30 - 40 years. The programme shall include lung function and sputum analysis test once in six months. Sufficient preventive measures shall be adopted to avoid direct exposure to dust | Good housekeeping is being ensured.<br><br>Occupational health surveillance programme as suggested is being carried out on a regular basis and the records are also being maintained.<br><br>Sufficient preventive measures viz., Dust mask provided to employees to avoid direct exposure to dust apart from taking precautions and ensuring measures to control dust. |
| vii. | The company shall undertake eco development measures including community welfare measures in the project area. | Eco-development measures like Rain water harvesting and Community development measures are being carried out attached as Annexure-8 |
| viii. | The project proponent shall also comply with all the environmental protection measures and | The environmental protection measures and safeguards provided as recommended in EIA/EMP |

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| | safeguards recommended in the EIA/EMP | are being implemented. |
| ix. | A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a senior executive | Separate environmental management cell and environmental monitoring systems have been put in place. For analysis of samples, third party, approved laboratory facilities are being utilized. |
| x. | Adequate fund shall be allocated to implement the conditions stipulated by the Ministry of Environment and Forest as well as the State Government. Time bound implementation schedule for implementing all the conditions stipulated herein shall be submitted. The funds so provided shall not be diverted for any other purpose | Adequate fund has been allocated to implement the conditions stipulated by the Ministry of Environment and Forest as well as the State Government. The funds so provide is not diverted for any other purpose.<br><br>The action taken to comply with the conditions stipulated in the Environmental Clearance is being updated in the compliance report while submitting the same to all concerned authorities. |
| xi. | The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including results of monitored data (both in hard copies as well as by emails) to the respective Regional Office of MoEF and respective zonal office of CPCB and KSPCB. | Six monthly reports for status on compliance of stipulated EC conditions including the results of monitored data are being submitted in hard copies as well as by emails to the Regional Office of MoEF & CC, Bangalore and CPCB, Bangalore and KSPCB. |
| xii. | The Regional Office of this Ministry /CPCB/KPCB shall monitor the stipulated conditions. The project authorities shall extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information /monitoring reports. A six monthly compliance report and the monitored date along with statistical interpretation shall be submitted to them regularly. | Full cooperation will be extended to the officer (s) of the Regional Office by furnishing the requisite data/information /monitoring reports.<br><br>A six monthly compliance report and the monitored data are being submitted to the Regional Office of MoEF & CC, CPCB and KSPCB. |
| xiii. | The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work | Funds have been invested internally accrued, so there is no need of financial approval of project by any authority and the financial closure. The date of commencement of ground work had been communicated to MoEF & CC, Delhi & MoEF & CC, Bengaluru. |
| xiv. | No change in the mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests. No change in the calendar plan including excavation, quantum of limestone and waste shall be made. | There will be no changes in the mining technology and scope of working without prior approval of the MoEF & CC. Also, no changes in the calendar plan including excavation, quantum of limestone and waste will be made. |
| xv. | Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM etc., shall be provided with ear plugs/muffs | Noise Control Measures has been strictly adhered, Silencers/barriers/acoustic enclosures are provided to control noise levels in the work environment. Workers engaged in operations have been provided with ear plugs/muffs. |
| xvi. | Industrial waste water from workshop and | No waste water is getting generated from the |

| S.No | General Condition | Compliance Status |
|---|---|---|
| | waste water from mine shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) date 19th May 1993 and 31st December 1993 or an amended from time to time, Oil and grease trap shall be installed before discharge of workshop effluents. | existing Mine. The vehicles and the mining machinery used for the existing mining operation are maintained by the mining contractor at the workshop in Chincholi. No wastewater is being generated from mines. However, a Common Workshop will be provided with oil & grease trap in the Plant premises, adjacent to the Mining Lease Area and the same workshop will cater the requirements of Mine also. |
| xvii. | Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure of dust and take corrective measures ,if needed | Personal Protective Equipments (PPE's) were provided to the Personnel working in dusty areas. Daily PEP talks and Training on safety and health aspects have also been given on regular basis, Occupational health surveillance program will be undertaken periodically to find out whether any impact due to exposure of dust and Corrective measures will be taken, if needed. |
| xviii. | The project authorities shall inform to the Regional Office regarding date of final closures and final approval of the project by the concerned authorities and the date of start of land development work | As internally accrued funds had been invested, there was no need of financial approval of project by any authority and the financial closure. The date of commencement of ground work had been communicated to MoEF, New Delhi & MoEF, Bengaluru. |
| xix. | A copy of clearance letter shall be marked to the concerned Panchayat /local NGO, if any from whom suggestion /representation , if any was received while processing the proposal. | Environmental Clearance copy sent to Gram Panchayat of Miryana and Anwar. |
| xx. | A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad /Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions /representations if any were received while processing the proposal. The clearance letter shall also put up on the website of the company by the proponent. | Environmental Clearance copy sent to Gram Panchayat of Miryana and Anwar. The same has been put up in our company website. |
| xxi. | The project authorities shall advertise atleast in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned within 7 days of the issue of clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with its Karnataka State Pollution Control Board and also at website of the Ministry of Environment and Forests at "http://enfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry. | Advertisement was released in Kannada Prabha & New Indian Express, Bangalore on 26th Jun 2010 & Kannada Prabha, Gulbarga division on 27th Jun 2010 that the project has been accorded environmental clearance and a copy of the clearance letter is available with its Karnataka State Pollution Control Board and also at website of the Ministry of Environment and Forests at "http://enfor.nic.in.<br>Copies of the advertisement submitted to MoEF Regional Office, Bangalore vide our letter CHETTINAD CEMENT/MoEF/KAL.PROJ/538 dated 06.07.2010. |
| xxii. | The environment statement for each financial year ending 31st March in Form V is mandated | Environment statement for the year 2018-19 in Form-V submitted vide our letter no |

| S.No | General Condition | Compliance Status |
|---|---|---|
| | to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under Environmental (Protection) Rules 1986 as amended subsequently, shall also be put on the website of the company along with status of compliance of EC conditions and shall also be sent to the respective regional office of MoEF by email. | CCCPL/Kallur/Envi.Statement/Cement Plant & CPP/2018-19 dated 26/09/2019 to KSPCB & MoEF Regional Office, Bangalore and also uploaded in the company website. The status of compliance of EC conditions has also been put in the website of our company. |

**OTHER CONDITIONS**

| S No | Other Condition | Compliance Status |
|---|---|---|
| 10 | The Ministry or any other competent authority may stipulate any further condition(s) on receiving reports from the project authorities. The above conditions shall be monitored by the Regional Office of this Ministry. | Guidelines noted and the additional conditions stipulated will also be complied with. |
| 11 | The Ministry may revoke or suspend the clearance if implementation of any of the above conditions is not satisfactory. | Guidelines noted. |
| 12 | Any other conditions or alteration in the above conditions shall have to be implemented by the project authorities in a time bound manner | Guidelines noted. Any other condition or alteration in any condition will also be implemented as applicable. |
| 13 | Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, Second Floor, Trikoot-I, Bhikaji Cama Place, New Delhi-110066, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997 | Noted. |
| 14 | The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 the Air (Prevention and Control of Pollution) Act, 1981 the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules. | Noted. |

**For Chettinad Cement Corporation Private Limited**

Devesh Kumar Mishra,
Sr.Vice President (Works)

CHETTINAD CEMENT CORPORATION PVT. LIMITED KALLUR

Annexure-2

| Chettinad Cement Corporation Private Limited (Kallur Works & Mine) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sangem K & Kallur Villages, Kalaburagi District , Karnataka | | | | | | | | | | | | | |
| Ambiant Air Quality Monitoring- Consolidated Report ( Oct '19 - Mar '20) | | | | | | | | | | | | | |
| S.No | Location | $PM_{10}$ ( $\mu g/m^3$) | | | $PM_{2.5}$ ( $\mu g/m^3$) | | | $SO_2$ ( $\mu g/m^3$) | | | NOx ($\mu g/m^3$) | | |
| | | Max | Min | Avg | Max | Min | Avg | Max | Min | Avg | Max | Min | Avg |
| 1 | ML Area | 71 | 32 | 47.79 | 37 | 12 | 24.96 | 16.00 | 5.00 | 10.06 | 20.00 | 9.00 | 13.52 |
| 2 | Miryan Village | 60 | 11 | 44.10 | 36 | 17 | 24.66 | 13.00 | 6.00 | 9.77 | 19.00 | 8.00 | 13.08 |
| 3 | Polkampalli Village | 60 | 31 | 44.79 | 35 | 18 | 24.79 | 19.00 | 8.00 | 12.29 | 33.55 | 16.00 | 24.19 |
| 4 | Bhaktampalli Village | 61 | 33 | 46.25 | 44 | 15 | 25.01 | 15.00 | 6.00 | 10.02 | 18.00 | 9.00 | 13.21 |
| 5 | Somalingdahalli Village | 60 | 32 | 45.23 | 37 | 17 | 24.99 | 15.00 | 6.00 | 10.02 | 19.00 | 9.00 | 13.04 |
| 6 | Kalllur Village | 59 | 28 | 45.10 | 46 | 15 | 24.76 | 16.00 | 6.00 | 10.00 | 21.00 | 9.00 | 12.73 |
| 7 | Factory Area | 66 | 30 | 47.52 | 33 | 13 | 24.56 | 14.00 | 5.00 | 9.38 | 18.00 | 7.00 | 12.69 |
| Limit | | 100 $\mu g/m^3$ | | | 60 $\mu g/m^3$ | | | 80 $\mu g/m^3$ | | | 80 $\mu g/m^3$ | | |

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr.Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED * KALLUR

Annexure - 3

| Chettinad Cement Corporation Private Limited (Kallur Works & Mine) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sangam K & Kallur Villages ,Kalaburagi District, Karnataka | | | | | | | | | |
| Noise Level Monitoring- Consolidated Report (Oct'19 to Mar '20) | | | | | | | | | |
| S.No | Location | UoM | Day | | | Night | | | |
| | | | $L_{min}$ | $L_{eq}$ | $L_{max}$ | $L_{min}$ | $L_{eq}$ | $L_{max}$ | |
| Within the Premises | | | | | | | | | |
| 1 | Core Zone ML Area | dB(A) | 40.0 | 56.2 | 62.5 | 35.0 | 42.5 | 47.3 | 20 |
| 2 | Factory Area | dB(A) | 41.0 | 58.0 | 64.4 | 37.0 | 50.2 | 54.0 | 20.5 |
| Limit ($L_{eq}$) | | dB(A) | 75 | | | 70 | | | |
| S.No | Location | UoM | Day | | | Night | | | |
| | | | $L_{min}$ | $L_{eq}$ | $L_{max}$ | $L_{min}$ | $L_{eq}$ | $L_{max}$ | |
| Outside the Premises | | | | | | | | | |
| 1 | Miryan Village | dB(A) | 38.0 | 50.1 | 56.2 | 34.8 | 41.2 | 46.5 | |
| 2 | Polkampalli Village | dB(A) | 37.5 | 49.3 | 52.7 | 34.0 | 40.2 | 44.5 | |
| 3 | Bhaktampalli Village | dB(A) | 39.0 | 51.0 | 55.8 | 34.8 | 40.3 | 46.4 | |
| 4 | Somalingadhalli Village | dB(A) | 36.5 | 47.9 | 52.2 | 34.0 | 39.6 | 45.1 | |
| 5 | Kallur Village | dB(A) | 37.3 | 52.9 | 56.2 | 35.0 | 43.4 | 46.7 | |
| Limit ($L_{eq}$) | | dB(A) | 55 | | | 45 | | | |

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED KALLUR

Chettinad Cement Corporation Private Limited (Kallur Works & Mine)

Sangam K & Kallur Villages,Kalaburagi District,Karnataka

Ground Water Quality Monitoring Report( Oct '19 to Mar'20)

| S. No | Parameter | UoM | GW 1 | | GW 2 | | GW 3 | | GW 4 | | GW 5 | | GW 6 | | GW 7 | | Permissible Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Oct '19 | Jan'20 | Oct '19 | Jan'20 | Oct '19 | Jan'20 | Oct '19 | Jan'20 | Oct '19 | Jan'20 | Oct '19 | Jan'20 | Oct '19 | Jan'20 | |
| i | Colour (Haz | Hazen Units | <1 | <1 | 1 | 1 | 2 | <1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 |
| ii | Odour | -- | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable |
| iii | pH | | 7.20 | 8.07 | 7.51 | 7.67 | 7.90 | 7.53 | 7.46 | 7.44 | 7.53 | 7.47 | 7.60 | 7.28 | 8.00 | 7.79 | 6.5 - 8.5 |
| iv | Taste | | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable |
| v | Turbidity,NT | NTU | 1.8 | 4.5 | 3.1 | 0.6 | 4.2 | 0.6 | 3.5 | 0.7 | 3.1 | 0.86 | 2.5 | 0.8 | 3.8 | 0.6 | 5 |
| vi | Total Dissol | mg/l | 34 | 100 | 520 | 724 | 960 | 726 | 650 | 582 | 290 | 780 | 480 | 124 | 600 | 836 | 2000 |
| vii | Aluminium (a | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.2 |
| viii | Ammonia (as | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.5 |
| ix | Anionic Dete | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 1.0 |
| x | Barium (as B | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.7 |
| xi | Boron (as B) | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 1 |
| xii | Calcium (as | mg/l | <2 | 18.4 | 108.0 | 112.2 | 64.0 | 164.3 | 90.0 | 120.2 | 64 | 200 | 80 | 305 | 52 | 112 | 200 |
| xiii | Chloramines | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4 |
| xiv | Chloride as | mg/l | 10.0 | 11.0 | 75 | 170 | 115 | 130 | 130 | 92 | 37.0 | 190.0 | 55.0 | 310.0 | 123.0 | 210.0 | 1000 |
| xv | Copper (as | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 1.5 |
| xvi | Fluoride (as | mg/l | <0.1 | <0.1 | 0.72 | 0.29 | 0.98 | 0.10 | 1.15 | 1.17 | 0.28 | <0.1 | 1.02 | 0.21 | 0.51 | 0.26 | 1.5 |
| xvii | Residual, Fr | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 1.0 |
| xviii | Iron (as Fe) | mg/l | <0.05 | <0.05 | 0.07 | 0.06 | 0.08 | 0.05 | 0.07 | 0.09 | 0.06 | 0.05 | 0.08 | 0.1 | 0.09 | 0.09 | 1 |
| xix | Magnesium | mg/l | <1 | 5.3 | 34.0 | 80.2 | 28.0 | 63.2 | 28.0 | 18.2 | 22 | 24 | 28 | 32 | 19 | 80 | 100 |
| xx | Manganese | mg/l | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 0.3 |
| xxi | Mineral Oil,n | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.5 |
| xxii | Nitrates (as | mg/l | 8.0 | 2.8 | 35.0 | 37.4 | 103.0 | 37.5 | 24.0 | 23.2 | 10 | 34 | 19 | 26 | 1 | 39 | 45 |
| xxiii | Phenolics (a | mg/l | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.002 |
| xxiv | Selenium (as | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.01 |
| xxv | Silver (as Ag | mg/l | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.1 |
| xxvi | Sulphates (a | mg/l | 4.1 | 17.0 | 40.0 | 49.0 | 52.0 | 33.5 | 35.0 | 25.5 | 16 | 53 | 55 | 79 | 53 | 49 | 400 |
| xxvii | Sulphide (as | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.05 |
| xxviii | Alkalinity (as | mg/l | 4 | 70 | 345 | 410 | 480 | 470 | 400 | 390 | 225 | 430 | 300 | 530 | 315 | 510 | 600 |
| xxix | Total Hardne | mg/l | 4 | 68 | 410 | 610 | 275 | 670 | 340 | 375 | 250 | 620 | 315 | 890 | 210 | 610 | 600 |
| xxx | Zinc (as Zn) | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 15 |
| xxxi | Cadmium (as | mg/l | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.003 |
| xxxii | Cyanide (as | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.05 |
| xxxiii | Lead (as Pb) | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.01 |
| xxxiv | Molybdenum | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.07 |
| xxxv | Mercury (as | mg/l | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.001 |
| xxxvi | Nickel (as Ni | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.02 |
| xxxvii | Pestiides,mg | Mpn/100 ml | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.001 |
| xxxviii | Polychlorina | cfu/100ml | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0005 |
| xxix | Polynuclear Aromatic Hydrocarbons (as PAH),mg/l, Max | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0001 |
| XL | Arsenic (as A | mg/l | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.01 |
| XLi | Chromium (a | mg/l | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 0.05 |
| XLii | Trihalometha | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | -- |
| XLiii | Radioactive | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | -- |
| XLiv | Total Colifor | cfu/100ml | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent |
| XLv | E-Coli (cfu/ | cfu/100ml | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent |

GW1 - Mine Area Drinking Water (PublicSupply)
GW2 -Kallur village Bore Well water
GW3 - Mirayan Village Bore Well Water
GW4 - Bhaktampalli Village Bore Well Water
GW5- Polkampalli Village Bore Well Water
GW6 -Pardhi Motakpalli Village Bore Well Water
GW7 - Somalingadahalli Village Bore Water

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr.Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED * KALLUR

# GROUND WATER LEVEL FLUCTUATIONS

| S.No. | Location Details | | Water level (mbgl) | | | |
|---|---|---|---|---|---|---|
| | Bore Hole No | Area of Location | Pre Monsoon-2019 (May-19) | Monsoon – 2019 (August-19) | Post Monsoon-2019 (November-19) | Winter (Jan-20) |
| 1 | GW1 | Mine Area Drinking Water (Public Supply) | 13.7 | 3.2 | 4.8 | 5.2 |
| 2 | GW2 | Kallur village Dug Well water | 10.9 | 4.1 | 5.9 | 6.3 |
| 3 | GW3 | Mirayin Village Bore Well Water | 12.2 | 6.5 | 7.2 | 7.7 |
| 4 | GW4 | Bhaktampalli Village Bore Well Water | 11.6 | 5.7 | 7.9 | 8.4 |
| 5 | GW5 | Polakpalli Village Bore Well Water | 14.2 | 6.3 | 8.3 | 9.5 |
| 6 | GW6 | Pardhi Motakpalli Village Bore Well Water | 13.0 | 7.0 | 8.4 | 9.9 |
| 7 | GW7 | Somalingadhahalli Village Bore Water | 12.1 | 5.9 | 6.8 | 7.4 |

For **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr.Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED * KALLUR

Annexure- 5

## Chettinad Cement Corporation Private Limited (Kallur Works & Mine)

### Sangem K & Kallur Villages,Kalaburagi District ,Karnataka

### Surface Water Quality Monitoring Report( Oct'19 to Mar'20)

| S. No | Parameter | UoM | SW 1 | | SW 2 | | SW 3 | | SW 4 | | SW 5 | | SW 6 | | Permissible Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Oct'19 | Jan'20 | Oct'19 | Jan'20 | Oct'19 | Jan'20 | Oct'19 | Jan'20 | Oct'19 | Jan'20 | Oct'19 | Jan'20 | |
| i | pH | - | 8.34 | 8.34 | 8.32 | 8.31 | 8.27 | 8.47 | 8.06 | 8.41 | 8.07 | 8.32 | 8.15 | 8.20 | 6.5 to 8.5 |
| ii | Dissolved Oxygen (as O2), mg/l, Min | mg/l | 5.7 | 5.3 | 5.2 | 5.2 | 5.6 | 5.5 | 5.80 | 5.7 | 5.40 | 5.6 | 5.10 | 5.30 | Min 4 |
| iii | Biochemical Oxygen Demand (as O2), mg/l, Max | mg/l | 1.4 | 1.3 | 1.8 | 1.3 | 1.6 | 1.3 | 1.50 | 2.4 | 1.90 | 1.4 | 1.40 | 1.10 | 3 |
| iv | Total Coliform | (mpn/100ml) | 125 | 100 | 120 | 102 | 115 | 94 | 105.00 | 60 | 205.00 | 120 | 175.00 | 120.00 | 5000 |
| v | Colour (Hazen | (Hazen Units), | 5 | 5 | 5 | 5 | 5 | 5 | 5.00 | 5 | 5.00 | 5 | 5.00 | 5.00 | 300 |
| vi | Fluoride (as F | mg/l | 0.56 | 0.42 | 0.58 | 0.18 | 0.32 | 0.15 | 0.42 | <0.1 | 0.28 | 0.38 | 0.12 | 0.66 | 1.5 |
| vii | Cadmium (as | mg/l | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.01 |
| viii | Chloride (as C | mg/l | 30.0 | 30.0 | 33.0 | 35.0 | 11.0 | 13.0 | 22.00 | 24.0 | 23.00 | 24.0 | 10.00 | 13.98 | 600 |
| ix | Chromium (as | mg/l | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 0.05 |
| x | Cyanides (as | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.05 |
| xi | Total Dissolve | mg/l | 342 | 330 | 348 | 320 | 188 | 206 | 260.00 | 260 | 240.00 | 258 | 140.00 | 130.00 | 1500 |
| xii | Selenium (as | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.05 |
| xiii | Sulphates as | mg/l | 23.0 | 16.1 | 24.0 | 12.5 | 10.0 | 9.8 | 26.00 | 13.5 | 12.00 | 1.1 | 18.00 | 42.00 | 400 |
| xiv | Lead (as Pb) | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.1 |
| xv | Copper (as C | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 1.5 |
| xvi | Arsenic as As | mg/l | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.2 |
| xvii | Iron (as Fe),m | mg/l | 0.06 | 0.08 | 0.07 | 0.09 | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | 0.08 | <0.05 | <0.05 | 50 |
| xviii | Phenolic com | mg/l | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.005 |
| xix | Zinc (as Zn),m | mg/l | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 15 |
| xx | Insecticides, | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1 |
| xxi | Anionic deterg | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 |
| xxii | Oils and grea | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 50 |
| xxiii | Nitrates (as | mg/l | 13.0 | 7.0 | 14.0 | 7.0 | 2.0 | 2.4 | 7.00 | 2.8 | 7.00 | 2.9 | 2.00 | 2.90 | |
| xxiv | Alpha Emi | (µcurie/ml), Max | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| xxv | Beta Emitt | (µcurie/ml), Max | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |

**SW1 : Mullamari Rriver Upstream Water** **SW4 : Kulwala Nallah Upstream Water**
**SW2 : Mullamari River Downstream Water** **SW5 : Kulwala Nallah Downstream Water**
**SW3 : Lingadahailli Reservior Water,** **SW6 : Pond Water Near Miryan Village**

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED KALLUR

Annexure- 6

| Chettinad Cement Corporation Private Limited (Kallur Works ) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sangam K Village ,Kalaburagi District, Karnataka State | | | | | | | |
| Stack Emission Monotoring- Consolidated Report (Oct '19 to Mar '20) | | | | | | | |
| **S.No** | **Stack Connected to** | **Parameter** | **UoM** | **Norms** | **Max** | **Min** | **Avg** |
| 1 | Raw/Kiln | Particulate Matter | $mg/Nm^3$ | 30 | 27 | 18 | 23 |
| 2 | Cooler | | | | 29 | 21 | 25 |
| 3 | Coal Mill | | | | 26 | 20 | 23 |
| 4 | Cement MIll-1 | | | | 30 | 22 | 25 |
| 5 | Captive Power Plant - Boiler | Particulate Matter | mg/Nm3 | 50 | 35 | 15 | 25 |

| S.No | Stack Connected to | Parameter | UoM | Norms | Max | Min | Avg |
|---|---|---|---|---|---|---|---|
| 1 | Raw/Kiln | $SO_2$ | $mg/Nm^3$ | 100 | 31 | 11 | 23 |
| 2 | Captive Power Plant- Boiler | | | 600 | 410 | 280 | 382 |

| S.No | Stack Connected to | Parameter | UoM | Norms | Max | Min | Avg |
|---|---|---|---|---|---|---|---|
| 1 | Raw/Kiln | NOx | $mg/Nm^3$ | 800 | 377 | 256 | 332 |
| 2 | Captive Power Plant - Boiler | | | 300 | 186 | 140 | 158 |

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr.Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LIMITED * KALLUR

Annexure 7

**Chettinad Cement Corporation Private Limited (Kallur Works)**

**Sangam K Village ,Kalaburagi District , Karnataka**

**Treated Industrial & Sewage Effluent Quality Monitoring -**

**Consolidated Report (Oct '19 to Mar '20)**

**A. Treated Industrial Effluent**

| S No | Paramenter | UoM | Norms | Oct | Nov | Dec | Jan | Feb | Mar | Max | Min | Avg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PH | - | 5.5 to 9.0 | 7.61 | 7.86 | 7.81 | 7.78 | 7.95 | 8.06 | 8.06 | 7.61 | 7.84 |
| 2 | Suspended Solids | mg/litre | 100 | 22 | 22 | 9 | 26 | 12 | 26 | 26 | 9 | 19.00 |
| 3 | Total Dissolved Solids | mg/litre | 2100 | 586 | 896 | 782 | 1260 | 1080 | 1500 | 1500 | 586 | 1024 |
| 4 | Chlorides | mg/litre | 1000 | 163 | 328 | 298 | 644.8 | 292.05 | 640 | 644.8 | 163 | 397 |
| 5 | Dissolved Phospates(as P) | mg/litre | 5 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 6 | Sulphates | mg/litre | 1000 | 159 | 262 | 246 | 99 | 216 | 340 | 340 | 99 | 220.13 |

**B. Treated Sewage Effluent - Colony**

| S No | Paramenter | UoM | Norms | Oct | Nov | Dec | Jan | Feb | Mar | Max | Min | Avg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | pH Value | - | 6.5 to 9.0 | 7.5 | 7.11 | 7.99 | 7.42 | 7.43 | 8.48 | 8.48 | 7.11 | 7.78 |
| 2 | BOD [3 days at 27°C] | mg/litre | 10 | 5.37 | 4.77 | 5.08 | 7.164 | 5.37 | 5.45 | 7.16 | 4.77 | 4.53 |
| 3 | Chemical Oxygen Demand (COD | mg/litre | 50 | 42 | 40 | 36 | 48 | 36 | 40 | 48.00 | 36.00 | 40.75 |
| 4 | Total Suspended Solids | mg/litre | 20 | 19 | 12 | 10 | 10 | 17 | 18 | 19.00 | 10.00 | 17.13 |
| 5 | Ammonical Nitrogen as NH4 | mg/litre | 5 | <0.1 | <0.1 | <0.10 | 0.25 | <0.1 | <0.1 | 0.25 | 0.25 | <0.1 |
| 6 | Total Nitrogen | mg/litre | 20 | 5.6 | 6 | 5 | 4.5 | 2.97 | <0.5 | 6.00 | 2.97 | 3.74 |
| 7 | Fecal Coliform (MPN/100ml) | mg/litre | 100 | 14 | 18 | 13 | 24 | 22 | 18 | 24.00 | 13.00 | 21.33 |

.

| S.No | Parameters | UoM | Norms | Oct | Nov | Dec | Jan | Feb | Mar | Max | Min | Avg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | pH Value. | - | 5.5 to 9.0 | 8.30 | 8.29 | 8.16 | 8.14 | 8.39 | 7.83 | 8.39 | 7.83 | 8.16625 |
| 2 | Suspended Solids mg/l, Max. | mg/litre | 100 | 16 | 10 | 20 | 20 | 16 | 15 | 20 | 10 | 15.875 |
| 3 | Oil & Grease (mg/l), Max | mg/litre | 10 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |

For **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr. Vice President (Works)**

CEMENT CORPORATION PVT. LIMITED * KALLUR * CHETTI

Annexure-8

**Chettinad Cement Corporation Private Limited (Kallur Works & Mine)**

**Sangem K & Kallur Villages, Kalaburagi District , Karnataka**

**CSR Report (Oct 2019 to Mar 2020)**

| S No | Village | Activity details | Oct '19 to Mar'20 (Rs lakhs) |
|---|---|---|---|
| **EDUCATION** | | | |
| 1 | Kallur | Salaries to 4 nos of teachers for Govt. School at Kallur | 1.26 |
| 2 | Sangam-K | Salaries to 2 nos of teachers for Govt.School at Sangam-K (Rs.10000/- x per month) | 0.6 |
| 3 | Bhaktampalli | Salaries to 1 no of teacher for Govt.School at Bhaktampalli (Rs.5000/- x per month) | 0.3 |
| 4 | Miriyan | Salaries to 1 no of teacher for Govt.Higher Primary School at Miriyan (Rs.5000/- per month) | 0.3 |
| **INFRA-STRUCTURE DEVELOPMENT & COVID-19** | | | |
| 5 | Kalaburagi | Sponsorship for Kalaburagi District Annual Sports Meet, Kalaburagi | 1 |
| 6 | Chincholi | CC road at Police station, Chincholi | 3.21 |
| 7 | Chandapur | Fixing of Radium Printing both sides on MS Boards from Ganganpalli to Sedam & Sulepeth to South | 3.45 |
| 8 | Kalaburagi | Sponsorship for Kalaburagi Kannada sahitya Sammelana | 10 |
| 9 | Kallur | Swatchh Bharat Abhiyan at Kallur village | 0.2 |
| 10 | Miriyan | CCTV Project to Miriyan police station | 2.24 |
| 11 | Bhaktampalli | CC road & drainage at Bhaktampalli village | 4.03 |
| 12 | Garagpalli | Construction of compound wall and C.C road at Garagpalli village | 3.96 |
| 13 | Kallur | Providing fencing for gomala land at Kallur village (2nd stage) | 5.16 |
| 14 | Kallur | Providing fencing for gomala land at Kallur village (3rd stage) | 4.99 |
| 15 | Kallur | Drilling of borewell for Gomala land | 0.95 |
| 16 | Kallur | Gomala cow shed | 14.95 |
| 17 | Kallur | Gomala electrical works | 5.85 |
| 18 | CCCPL | Purchase of Nose masks to Police officials | 1.05 |
| 19 | CCCPL | Homeo medicine for Covid-19 (Arsenic Album) | 0.09 |
| Total | | | 63.59 |

for **Chettinad Cement Corporation Private Limited**

**Devesh Kumar Mishra**
**Sr.Vice President (Works)**

CHETTINAD CEMENT CORPORATION PVT. LTD. KALLUR