



Chettinad Cement/Tamilnadu/Puliyur/Cement Plant & CPP/EC Compliance

Oct '19-March'20/ 2020 /LS

27th May, 2020



Director

Ministry of Environment, Forest and Climate Change

Government of India, Regional Office (SEZ)

1st and 11nd Floor, Handloom Export Promotion Council

34, Cathedral Garden Road, Nungambakkam, Chennai – 600 034

Sir,

Sub: Submission of Environmental Clearance Compliance & Environmental Monitoring Reports (Oct'19 to March'20) - Chettinad Cement Corporation Private Limited, Puliyur Works, Puliyur Village, Karur Taluk & District, Tamilnadu

Ref: Environmental Clearance issued by Ministry of Environment and Forests vide Letter No. F.N. J -11011/186/2008 -IA.II (I) dated 25th Feb 2019

We enclose herewith the following reports pertaining to Integrated Cement Plant Production capacity of 1.7MTPA (Including Slag Grinding 1.0 MTPA) and Captive Power Plant generation capacity of 15MW, located at Puliyur Village, Karur Taluk & District, Tamilnadu for the period from Oct'19 to March'20.

- a. Environmental Clearance Compliance Report (Oct'19 to March'20) - **Appendix 1**
- b. Environmental Monitoring Report (Oct'19 to March'20) comprising of
 - i. Ambient Air Quality Monitoring - Consolidated Report - **Appendix 2**
 - ii. Noise Level Monitoring - Consolidated Report - **Appendix 3**
 - iii. Ground Water Quality Monitoring Report- **Appendix 4**
 - iv. Stack Emission Monitoring - Consolidated Report - **Appendix 5**
 - v. Effluent Quality Monitoring - Consolidated Report - **Appendix 6**

Yours faithfully

for Chettinad Cement Corporation Private Limited


A Amalraj

Joint President (Works)

Copy to : Director (Industries), MoEF & CC, Delhi
Member Secretary, CPCB, Delhi, Scientist 'E' & In-charge, CPCB, Bengaluru
Member Secretary, TNPCB, Chennai, JCEE, TNPCB, Salem, DEE, TNPCB, Karur

Chettinad Cement Corporation Private Limited.

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Chettinad Cement Corporation Private Limited (Puliyur Works)
Puliyur Village, Karur District, Tamilnadu


Environmental Clearance (EC) Compliance Report


(EC granted by MoEF vide letter F.NO. J – 11011/186/2008 – IA II (I) dated 25.02.2019)

S.No	Additional Condition	Compliance Status
1	The emissions from cement grinding units shall be restricted to $\leq 30\text{mg/Nm}^3$	Complied. Being Complying with is condition.
2	The cement grinding capacity shall be restricted to 1.7MTPA inclusive of granulated slag	Complied. We assured that the total cement Grinding Capacity will not exceed to 1.7 MTPA inclusive of Granulated Slag grinding capacity of 1.0 MTPA.
3	Industrial vacuum Cleaner shall be used to control the road dust within the plant and its vicinity.	Complied. Two numbers of road sweeping machines uses plant's internal roads cleaning and vacuum cleaners as well as manual cleaning is done regular interval and ensured clean and good working atmosphere within plant.
4	All other terms and conditions mentioned in the earlier EC letter no J-11011/186/2008-IA.II(I) dated 25.08.2008 shall remaining unchanged.	Compliance Status Enclosed as Appendix 1

for Chettinad Cement Corporation Private Limited


A . Amalraj
Joint President (Works)





Chettinad Cement Corporation Private Limited (Puliyur Works)
Puliyur Village, Karur District, Tamilnadu

Environmental Clearance (EC) Compliance Report
(EC granted by MoEF vide letter F.NO. J – 11011/186/2008 – IA II (I) dated 25.08.2008)

A. Specific Conditions

S.No	Specific Condition	Compliance Status						
i	The stack emission from all the source shall not exceed 50 mg/Nm ³ . Electrostatic precipitator (ESP) to Cooler , Bag house to Kiln/Raw mill , Bag Filter to Coal Mill, Bag Filter to Cement Mill etc shall be provided to control air emissions < 50mg/Nm ³ . Monitoring of ambient air quality and stack emissions shall be carried out regularly in consultation with TNPCB and data submitted to the Ministry's Regional Office at Bangalore , CPCB and Tamil Nadu Pollution Control Board (TNPCB) regularly.	<p>The air pollution control devices viz., Electrostatic Precipitator (ESP) for the Cooler, Bag House to for Kiln/Raw Mill, Coal Mill & Cement Mill and Bag Filters for Clinker Silo, Ash Silo and Transfer Points are in place to control emissions within the prescribed norms.</p> <p>Monitoring of Ambient Air Quality and Stack Emissions are carried out regularly and the monitored data are being submitted to the Ministry's Regional Office at Chennai , CPCB and Tamilnadu Pollution Control Board (TNPCB).</p>						
ii	The fugitive emission during loading and unloading shall be suitably controlled. The company shall install adequate dust collection and extraction system to control fugitive dust emissions. Fugitive emissions from raw material handling areas, loading /unloading points, transfer points, hoppers , storage silos , weigh feeders, grinding mill and packing machines shall be controlled by providing silos and covered sheds for storage of raw materials, fully covered conveyors for transportation of materials etc. Water sprinklers shall also be provided to control fugitive emissions.	<p>Dust collection/extraction systems available to control fugitive emission are detailed below.</p> <table><tr><th>Activity</th><th>Control Measure</th></tr><tr><td>Unloading of Raw Materials</td><td>Water Sprinkling</td></tr><tr><td>Stacking</td><td>Closed Storage with water Sprinkling System for Coal, Gypsum ,Limestone</td></tr></table>	Activity	Control Measure	Unloading of Raw Materials	Water Sprinkling	Stacking	Closed Storage with water Sprinkling System for Coal, Gypsum ,Limestone
Activity	Control Measure							
Unloading of Raw Materials	Water Sprinkling							
Stacking	Closed Storage with water Sprinkling System for Coal, Gypsum ,Limestone							

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S.No	Specific Condition	Compliance Status	
		Activity	Control Measure
		Storing	Silos with Bag Filters for Raw Meal, Clinker, Fly Ash & Cement
		Conveying Fly Ash from ESP Hopper to Fly Ash Silo	Pneumatic conveying through closed pipeline
		Conveying of Materials (Raw Meal, Clinker, Coal etc.,)	Closed Conveyors and transfer points with Bag Filters.
		Conveying of Fly Ash from Silo to Cement Mill & Cement to Silo	Using Air Slide and Bucket Elevator
		Transporting, Vehicular Movement	<ul style="list-style-type: none"> • Paved Roads • Allowing only vehicles with Pollution Under Control Certificate inside the premises • Tarpaulin Cover for the materials • No Overloading • Speed Control
		Bagging and Packing	Electronic Packers with Bag Filters

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S.No	Specific Condition	Compliance Status
iii	Ambient Air Quality Monitoring Stations (AAQM) shall be set up as per statutory requirement in consultation with the TNPCB and data submitted to the ministry's Regional Office at Bangalore, CPCB and TNPCB.	6 Ambient Air Quality Monitoring Stations (AAQM) have been set up in consultation with the TNPCB and the monitored data is being submitted to the Regional Office of MoEF & CC, Chennai, CPCB and TNPCB.
iv	Total ground water requirement shall not exceed 1200 m ³ /day. The liquid effluent from the existing Captive Power Plant (CPP), viz., Boiler Blow Down Cooling Tower Blow Down and Reverse Osmosis (RO) Plant Rejects shall be neutralized and treated and used for dust suppression and green belt development. No liquid effluent shall be generated and 'Zero' discharge shall be followed. Domestic effluent shall be treated in Sewage Treatment Plant (STP) and utilized for green belt development.	Total ground water requirement is not exceeding 1200 m ³ /day. The liquid effluent from the existing Captive Power Plant (CPP) viz., Boiler Blow Down, Cooling Tower Blow Down and Reverse Osmosis (RO) Plant Rejects are being neutralized and treated and then used for various requirements of the Plant. No liquid effluent is being discharged from the premises and 'Zero' discharge concept is being followed. Domestic effluent is treated in Sewage Treatment Plant (STP) and utilized for greenbelt development and dust suppression.
v	Permission for the drawl of 1200 KLD from the State Ground Water Board /Central Ground Water Authority shall be obtained.	Ground water Permission obtained from PWD.
vi	Solid Waste viz., Fly Ash and Dust etc from the air pollution control equipments (ESP, Bag House, Bag Filters etc) Shall be properly recycled and reutilized in the process itself for Cement manufacturing. As proposed, Effluent Treatment Plant (ETP) sludge from 8 CETPs in Karur area shall be used in Cement Plant. No solid waste shall be disposed off outside the factory premises. The solid waste from	Solid Waste viz., Fly Ash and Dust etc., from the Air Pollution Control Equipment (ESP, Bag House, Bag Filters etc) are being recycled and reutilized in the respective process. The co-processing of CETP Sludge (Textile) in our Kiln commenced. Continuing the co-processing of this sludge depends on the quality of Limestone received from our Captive Limestone Mines and the quality of CETP Sludge received from Textile Industry, as variations have



S.No	Specific Condition	Compliance Status						
	Sewage Treatment Plant (STP) shall be composted and used as manure for green belt. Waste oil shall be collected, stored and sold to authorized recyclers/preprocessors for further treatment and disposal.	been observed in the quality of both. No solid waste is disposed outside the factory premises. The solid waste from Sewage Treatment Plant (STP) is being used as manure for greenbelt. Used/Spent Oil is being collected, stored and sold to authorized recyclers/ preprocessors for further treatment and disposal.						
vii	As proposed, out of total 31 ha green belt shall be developed in 11.6 ha (37.4%) to mitigate the effects of air emissions as per the CPCB per the CPCB guidelines in a time bound manner.	<table><tr><td>Total area of Plant</td><td>31.0 ha</td></tr><tr><td>Greenbelt Developed Area</td><td>11.6 ha (37.4%)</td></tr><tr><td>No of Saplings planted</td><td>25084</td></tr></table>	Total area of Plant	31.0 ha	Greenbelt Developed Area	11.6 ha (37.4%)	No of Saplings planted	25084
Total area of Plant	31.0 ha							
Greenbelt Developed Area	11.6 ha (37.4%)							
No of Saplings planted	25084							
viii	All the recommendations mentioned the Corporate Responsibility for Environmental Protection CREP shall be followed and complied.	The recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Cement Plants have been complied with except for the generation of power using hot gases from the Kiln. As the hot gases from the kiln are used for removing the moisture from the raw materials in the Raw Mill, the insufficient heat energy available in the spent gases cannot be used for power generation using Waste Heat Recovery Boiler.						
ix	Other necessary statutory clearance from the concerned departments including 'No Objection Certificate ' from the Tamilnadu Pollution Control Board shall be obtained prior to commencement of construction and/ or operation.	Consent to Establishment and Consent for Operations have been obtained from Tamilnadu Pollution Control Board prior to commencement of construction and operation respectively.						



B. General Conditions

S.No	General Condition	Compliance Status
i	The project authority shall adhere to the stipulations made by Tamilnadu Pollution Control Board (TNPCB) and State Government.	The stipulations made by Tamilnadu Pollution Control Board (TNPCB) and State Government are being complied with.
ii	No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.	No further expansion or modification of the plant will be carried out without prior approval of this Ministry.
iii	The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the T.N. Pollution Control Board. Continuous online monitors for particulate emissions shall be installed in stack. Interlock facility shall 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.	<p>The air pollution control devices like ESP, Bag House/ Water Sprinkling and Low NOx Burner etc., are in place to control the gaseous and particulate matter emissions within norms.</p> <p>Continuous online monitors for Particulate Matter installed in the Stacks attached to Raw Mill & Kiln, Coal Mill, and Cooler ESP & Cement Mill.</p> <p>Interlock facility available in the pollution control equipment so that when the pollution control equipment is not working, the respective production unit gets shut down automatically.</p>
iv	Cement grinding shall be carried out in closed system and will have a highly efficient bag filters to control air emissions from Cement Grinding Mill below 50 mg/Nm ³ .	Bag House is available for the Cement Grinding Mill where the grinding of Clinker takes place. The emissions from the Cement Grinding Mill are below 30 mg/Nm ³ .
v	Ambient Air Quality including Ambient Noise Levels shall not exceed the standards stipulated under EPA or by the State Authorities. Monitoring of Ambient Air Quality and shall be carried out regularly in consultation with	<p>Ambient Air Quality and Ambient Noise Levels are not exceeding the standards stipulated under EPA and the State Authorities.</p> <p>Monitoring of Ambient Air Quality is being</p>



S.No	General Condition	Compliance Status
	TNPCB and data submitted to the CPCB and TNPCB regularly. The instruments used for Ambient Air Quality Monitoring shall be calibrated time to time.	carried out regularly and monitored data is being submitted to the CPCB and TNPCB. The instruments used for Ambient Air Quality Monitoring are being calibrated from time to time.
vi	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) 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, Rules 1989 viz. 75dBA (day time) and 70 dBA (night time)	The overall noise levels in the plant area is kept well within the standards (85 dBA) by providing appropriate noise control measures like acoustic hoods, silencers, enclosures etc. for the sources of noise generation and ensuring good maintenance of Equipment & Machinery. The Ambient Noise Levels are conforming to the Standards prescribed under environmental (Protection) Act 1986, Rules 1989 viz. 75 dBA (day time) and 70 dBA (night time).
vii	Rainwater harvesting measures shall be adopted. The company must harvest the rainwater from the rooftops and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.	Rainwater harvesting measures like rooftop collection facility, storm water collection facility and sump are available to harvest rainwater which helps to recharge the ground water, ensure availability of harvested water for meeting various requirements of the Plant and also conserve fresh water.
viii	The company shall undertake eco-development measures including community welfare measures in the project area.	The eco-development activities like rainwater harvesting campaigns, free-supply of saplings to the nearby community etc., are being carried out. The community welfare measures, which include various Education, Health and Infrastructure Development initiatives that are being carried out.

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S.No	General Condition	Compliance Status
ix	Proper housekeeping and adequate occupational health programmes shall be taken up.	Good House Keeping is maintained in Plant Area. Occupational Health Programme like Pre-employment and periodical health check up for the employees, health awareness programme, ensuring use of personal protective equipment by the employees, maintaining clean and safe work environment etc., are being ensured.
x	A separate environmental management cell to carry out various management and monitoring functions shall be set up under the control of Senior Executive.	<p>A separate environmental management cell under the control of Senior Executive to carry out various environment related activities is available.</p> <p>The regular environmental monitoring is being carried by third party.</p>
xi	Adequate funds shall be earmarked towards total capital cost and recurring cost/annum for environmental pollution control measures and used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	<p>Funds earmarked for capital cost and recurring cost/annum for environmental pollution control measures have been used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government.</p> <p>The funds so provided are not being diverted for any other purpose.</p>
xii	The Regional Office of this Ministry at Bangalore/CPCB/TNPCB/shall monitors the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly EC compliance report and the monitored data are being submitted to Regional Office of MoEF & CC at Chennai/CPCB/TNPCB regularly.



S.No	General Condition	Compliance Status
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.	As internally accrued funds have been invested for the expansion activities, this portion of the condition is not applicable to us. The expansion activity did not involve any land development work, as few facilities in the plants have been upgraded/replaced.
xiv	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the T.N. Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office at Bangalore.	Advertisement in Indian Express (in English) & Dhinamani (in Tamil) published on 30.08.2008 informing the public that the proposed expansion programme has been accorded environmental clearance and a copy of the clearance letter is available with its Tamilnadu Pollution Control Board and also can be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . Copies of the advertisement submitted to MoEF Regional Office, Bangalore vide our letter CCCLP/PROD/2008/1653 dated 30.08.2008.

Other Conditions

S No	Other Condition	Compliance Status
5.0	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 located at Bangalore.	Guidelines noted and the additional conditions will also be implemented.
6.0	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions, is not satisfactory.	Guidelines noted.

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S No	Other Condition	Compliance Status
7.0	Any other conditions or alteration in the above said conditions shall have to be implemented by the project authorities in a time bound manner.	Guidelines noted.
8.0	Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.	Guidelines noted.
9.0	The above conditions shall be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Guidelines noted.

for Chettinad Cement Corporation Private Limited

A. Amalraj

A . Amalraj

Joint President (Works)



[Signature]

Chettinad Cement Corporation Private Limited (Puliyur Works)													
Puliyur Village ,Karur District, Tamil Nadu													
Ambiant Air Quality Monitoring- Consolidated Report (October 2019 to March 2020)													
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	Limestone Stock Pile(East)	66.2	59.3	62.7	28.8	25.1	26.6	14.0	11.6	12.6	27.8	21.4	24.4
2	South Trans Office(North)	65.5	59.3	63.7	27.7	25.1	26.6	14.7	10.7	12.8	28.2	21.8	24.9
3	Coal Yard Area (West)	67.4	65.7	66.7	30.4	24.7	28.6	14.7	12.6	13.7	28.2	23.4	26.9
4	Truck Parcking Area (Southwest)	64.8	53.7	62.6	28.5	25.6	26.6	13.4	10.7	12.0	28.8	19.7	24.5
5	G6 Quarters (South)	64.3	53.7	59.5	28.8	20.4	25.6	12.7	9.2	11.3	28.8	19.7	23.7
6	Occ. Health Centre (Southeast)	66.5	57.6	63.8	30.6	24.2	27.7	14.6	10.2	12.3	30.3	21.1	26.0
Limit		100 µg/m ³			60 µg/m ³			80 µg/m ³			80 µg/m ³		

for Chettinad Cement Corporation Private Limited

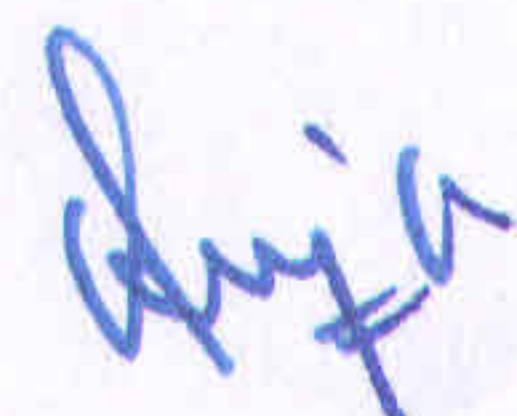
A. Amalraj
A.Amalraj
Joint President (Works)



Appendix 3

Chettinad Cement Corporation Private Limited (Puliyur Works)								
Puliyur Village , Karur District, Tamilnadu								
Noise Level Monitoring- Consolidated Report (October2019 to March2020)								
S.No	Location	UoM	Day			Night		
			L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Ambient Noise Level								
1	Lime Stone Stock Pile	dB(A)	52.40	52.95	53.50	42.60	42.90	43.20
2	South Trans Office	dB(A)	52.30	52.40	52.50	42.70	43.05	43.40
3	Coal Yard	dB(A)	52.40	53.05	53.70	42.20	42.75	43.30
4	Truck Parking Area	dB(A)	52.60	52.65	52.70	42.20	42.95	43.70
5	G6 Quarters	dB(A)	51.30	51.75	52.20	42.50	43.00	43.50
6	Occupational Health Centre	dB(A)	52.40	52.40	52.40	42.50	43.25	44.00
Limit (L _{eq})		dB(A)	75			70		

for Chettinad Cement Corporation Private Limited


A.Amalraj
Joint President (Works)

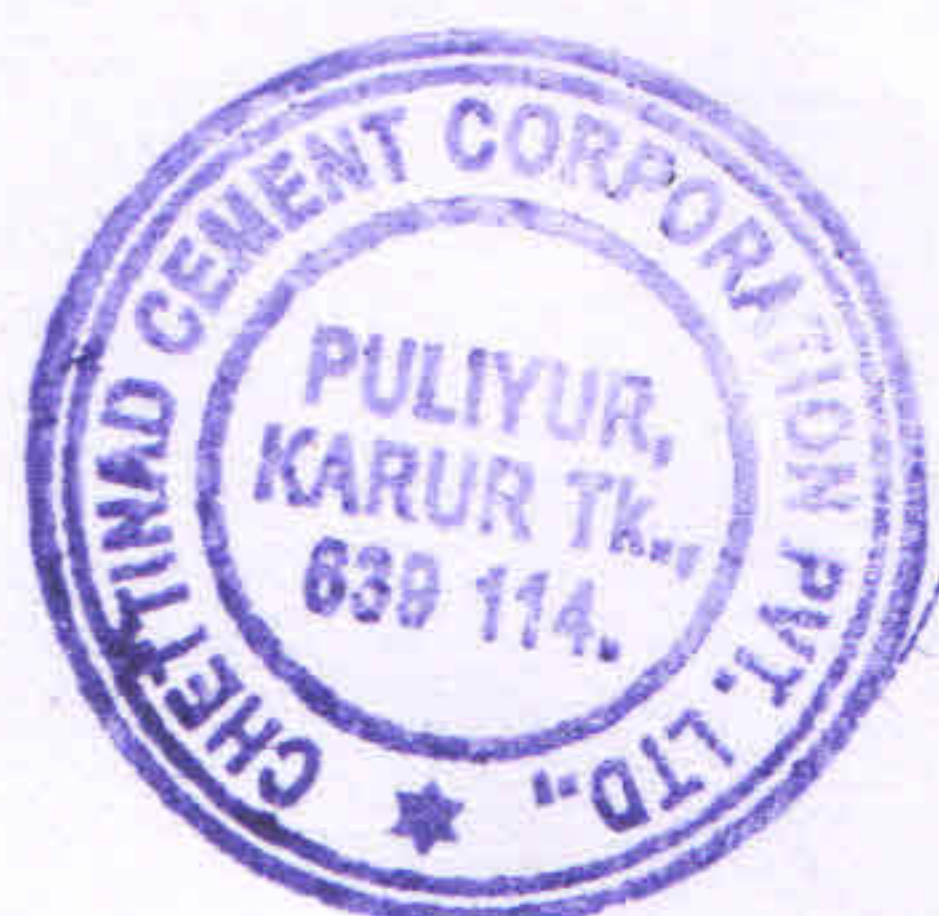


Chettinad Cement Corporation Private Limited (Puliyur Works)												
Puliyur Village, Karur District, Tamilnadu												
Ground Water Quality Monitoring Report (October 2019 to March 2020)												
S. No	Parameter	UoM	GW 1		GW 2		GW 3		GW 4		GW 5	
			Dec '19	Mar'20	Dec '19	Mar'20	Dec '19	Mar'20	Dec '19	Mar'20	Dec '19	Mar'20
1	Total Coliforms	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
2	Total Alkalinity as CaCO ₃	mg/l	320	538	296	367	308	518	320	471	296	316
3	Ammonia as N	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Mg hardness as CaCO ₃	mg/l	125	120	68	72	125	105	94	100	68	65
5	P-Alkalinity as CaCO ₃	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	Silica as SiO ₂	mg/l	52	47	17	23	45	41	28	26	27	29
7	TSS	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	Sodium as Na	mg/l	80	249	82	87	70	170	75	168	136	142
9	Colour	Haz	20	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	BDL
10	pH	mg/l	7.16	7.21	7.51	7.62	7.13	7.1	6.91	6.79	7.25	7.09
11	TDS	mg/l	1287	1750	786	728	1365	1460	1267	1370	1044	1055
12	Turbidity	mg/l	0.3	0.4	0.5	0.5	0.2	BDL	0.1	0.6	0.9	1.2
13	Ca hardness CaCO ₃	mg/l	541	510	213	254	510	485	291	305	198	NIL
14	Anionic detergents MBAS	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	230
15	Boron as B	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Chloride as Cl	mg/l	458	421	135	153	256	291	280	296	227	10
17	Copper as Cu		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18	Fluoride as F	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19	Free residual chlorine	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20	Iron as Fe	mg/l	0.06	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.15	0.12
21	Manganese as Mn	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22	Mnial Oil	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Nitrite as NO ₃	mg/l	42	39	17	24	38	33	33	36	34	38
24	Nitrite as NO ₂	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25	Phenolic compound as C ₆ H ₅ OH	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	NIL	BDL	BDL	BDL
26	Selenium as Se	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NIL
27	Sulphate as SO ₄	mg/l	163	136	59	68	88	91	111	129	154	162
28	Total Hardness as CaCO ₃	mg/l	480	630	281	326	456	590	460	405	265	295
29	Cadmium as Cd	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30	Cyanide as CN	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31	Lead as Pb	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
32	Mercury as Hg	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
33	T.Chromium as Cr	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
34	T.Arsenic as As	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
35	Appearance		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
GW 1 - Kalipalayam Village- East					GW 4 - Puliyur Village -West							
GW 2 - A.B.Nager-South West					GW 5 - Kovil Palayam Village-North							
GW 3 - Amaravathi Nager North West												

* BDL - Below Detectable Limit

for Chettinad Cement Corporation Private Limited

A.Amalraj
Joint President (Works)



Chettinad Cement Corporation Private Limited (Puliyur Works)							
Puliyur , Karur District,TamilNadu							
Stack Emission Monotoring- Consolidated Report (Oct'2019 to March2020)							
S.No	Stack Connected to	Parameter	UoM	Norms	Max	Min	Avg
1	Raw Mill /Kiln	Particulate Matter	mg/Nm ³	30	16.1	9.6	12.7
2	Cooler ESP				25.9	16.1	20.3
3	Coal Mill				24.1	15.1	20.4
4	Cement Mill-1				27.5	20.9	23.9
5	Captive Power Plant - Boiler			50	29.2	17.9	23.0

S.No	Stack Connected to	Parameter	UoM	Norms	Max	Min	Avg
1	Raw Mill /Kiln	SO ₂	mg/Nm ³	100	54.0	4.0	17.6
2	Captive Power Plant - Boiler			600	446.0	121.0	248.0

S.No	Stack Connected to	Parameter	UoM	Norms	Max	Min	Avg
1	Raw Mill/Kiln	NOx	mg/Nm ³	800	550.0	210.0	348.8
2	Captive Power Plant - Bolier			300	237.0	119.0	189.7

for Chettinad Cement Corporation Private Limited



A.Amalraj
Joint President (Works)





Chettinad Cement Corporation Private Limited (Puliyur Works)						
Puliyur Village ,Karur District , Tamilnadu						
Treated Industrial & Sewage Effluent Quality Monitoring - Consolidated Report (October2019 to March2020)						
A. Treated Industrial Effluent						
S No	Paramenter	UoM	Norms	Max	Min	Avg
1	PH	-	5.5 to 9.0	8.70	7.71	7.95
2	Suspended Solids	mg/litre	100	20.00	4.00	12.13
3	Total Dissolved Solids	mg/litre	2100	1210.00	906.00	1155.00
4	Chlorides	mg/litre	1000	210.00	170.00	195.00
5	Sulphates	mg/litre	1000	55.00	40.00	45.00
6	BOD	mg/litre	30	6.00	4.00	6.00
7	COD	mg/litre	250	45.00	16.40	42.50
B. Treated Sewage Effluent - Factory						
S No	Paramenter	UoM	Norms	Max	Min	Avg
1	PH	-	5.5 to 9.0	8.05	7.24	7.70
2	Total Suspended Solids	mg/litre	30	13.00	8.00	9.50
3	BOD	mg/litre	20	10.00	8.00	9.50
C. Treated Sewage Effluent - Colony						
S No	Paramenter	UoM	Norms	Max	Min	Avg
1	PH	-	5.5 to 9.0	8.12	7.50	7.79
2	Total Suspended Solids	mg/litre	30	15.00	10.00	12.67
3	BOD	mg/litre	20	12.00	10.00	11.00

for Chettinad Cement Corporation Private Limited


A. Amalraj
Joint President (Works)

