

CCVL/TNPCB/0254
Nov 03, 2023

Cuddalore Plant:
SIPCOT Industrial Complex Phase II
Semmankuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanmar.com
CIN U24100TN1991PLC020589

Additional Chief Conservator of Forest ✓
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ) 1st and 2nd Floor,
Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Semmankuppam
village, Cuddalore -607005, Tamil Nadu

Submission of Compliance Report from April-2023 to September -2023-Reg.

Ref: Environmental clearance No J.11011/180/2004-I.A.II(I) dated 28 Nov2005

With Reference to the above ,we herewith furnish the Half yearly compliance Report for the
period of April 2023 to September 2023 With respect to all special conditions issued in the
Environmental clearance NoJ.11011/180/2004-I.A.II(I) dated 28 Nov2005 for our plant,
Semmankuppam village, Cuddalore District, Tamil Nadu

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,



N.Palanisamy
Senior Vice President - Operations

Encl: As above

Copy to:

Central pollution control board (MOEF&CC, Govt of India)
77-A, Padi, Ambattur Industrial Estate,
Chennai-600058

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005



Regd Office: 9 Cathedral Road Chennai 600 086 India

Chemplast Sanmar Limited
Semmankuppam Village, Cuddalore -607005

Compliance Report for Environmental Clearance No.J-11011/180/2004-I.A.II (I) dated
28.11.2005 for Period Apr'2023 to Sep'2023

A. SPECIFIC CONDITIONS

S.No	Stipulated conditions (Operation Phase)	Compliance status
1	VCM emission from process and fugitive sources together shall not be more than 60 gm per MT of PVC. VCM emissions through the vents shall always be less than 5 mg/Nm ³ .	VCM emission from process and other fugitive sources are monitoring by installation of online monitoring equipments. The real time data are transmitted to Car Air Centre of TNPCB\ Actually VCM level is 14.62 gm/MT, which is within 60 gm per metric ton of PVC VCM emission through the vent is monitored and result are well within the 5 mg/Nm ³ as informed.
2	Properly designed incinerator meeting the norms as given in CPCB publication No.HAZAMS/30/2005-06 or alternatively properly designed Vent Gas Absorption system should be installed to completely eliminate emissions of VCM.	Vent Gas Absorption (VGA) system is installed to absorb VCM emissions and are monitored through online and real time data are connected to Care Air Center, Chennai.
3	Consumption of VCM shall be restricted to 1.003 MT per MT of PVC. No additive/heavy metals shall be used in the process to minimize production of Dioxines even if accidentally PVC is burnt.	VCM consumption always restricted to less than 1.003 MT of PVC. No Heavy metals is being used in the PVC process.
4	Maximum GLC of VCM in ambient air (24 h. average) shall not be more than 0.4 ppb (v) (parts per billion-volume). At least 10 numbers of ambient air quality monitoring stations, (SPM, SO ₂ , NO _x , CO, HC and VCM levels) shall be set up in consultation with TNPCB, based on occurrence of maximum ground level concentration and downwind direction i.e. maximum impact zone. The monitoring network must be decided based on modeling exercise to represent short-term GLCs. Continuous on-line monitoring equipment shall be installed to monitor SO _x , NO _x and VCM levels and will be submitted to the Ministry/CPCB/TNPCB.	The Maximum GLC of VCM in ambient air is less than 0.4 ppb (v). Mobile van equipped with a gas chromatogram is used to monitor the GLC in 9 villages and around the plant. The results are below detectable limits (BDL). The ambient air quality monitoring is carried out as per National Ambient air quality standards prescribed by MoEF&CC, Govt, vide Gazette Notification G.S.R .826(E) dated 18.11.2009 Online monitors for SPM, Sox, and Nox are installed in boiler and results are within the limits. Continuous online monitors are installed in the following process stack and the results are with I the limits.

5	NOx emission shall be controlled adequately; total NOx emission shall not be more than 500 mg/Nm ³ for which NOx control system (DeNOx/SCR etc) shall be installed.	<p>The project was first conceptualized with a LSHS fired boiler and hence this condition was invoked. Later, we have obtained an approval from MoEF vide letter No.F.No.J-11011/180/004-I.A.II (I) dated 30.05.2007 for installing a coal-fired boiler instead of a LSHS fired boiler.</p> <p>We have installed Atmospheric Fluidized Bed Combustion (AFBC) boiler.</p> <p>AFBC boiler technology reduces the emission of NOX from the boiler.</p> <p>NOX emission is always ,<500 mg/Nm³</p>
6	The gaseous emissions (SO ₂ , NO _x , HC and VCM) from various process units shall conform to the standards prescribed under environment (Protection) Rules, 1986 or norms stipulated by the TNPCB which ever is more stringent. At no time, the emission level should go beyond the stipulated standards. In the vent of failure of pollution control systems(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	The gaseous emissions (SO ₂ ,NO _x ,HC,and VCM) from various process units are within the limits. In case of failure of pollution control system ,the unit will not be started until the control measure are rectified to achieve the desired efficiency .
7	Project authorities shall regularly improve the process keeping in view of the efforts underway by Vinyl-2010 to further minimize emissions and achieve 100% recycling.	<p>Chemplast Cuddalore Vinyl Limited is committed to ensure that PVC manufacturing is fully compliant with the ECVCM Charter. The environmental criteria are in line with the "Best Available Technique" (BAT) as adopted.</p> <p>As per ECVM charter Leak detection and repair (LDAR) program is undertaken through MoEF approved lab once in a year.</p> <p>Total VCM emissions as per ECVM charter from PVC production is less than 100 grams / MT of PVC. Which 100% Recovered, recycled and reused with in the process.</p>
8	As indicated by the project authorities, 2.9 kg. Of VCM will form as a part of off spec PVC. This will be sold out as product. Loss of VCM should not exceed 60g/ton of PVC. This should be guaranteed. The effort shall be	The of spec PVC formed is well with in 2.9 kg/ton of PVC .VCM emission from Process and other fugitive sources together are with in 60 gm/MT of PVC production as explained in Specific

	made to minimize losses particularly fugitive emission from marine facilities, tank form and work place. Measures for fugitive emissions control shall be taken by installation of double mechanical seals to pumps handling high vapor pressure materials ,sensors for detecting HC /toxic gas leakages at strategic locations ,regular inspection ,maintenance of valves and other equipments.	condition 1
9	VCM level at work place shall be less than 0.5 ppm (v), adequate VCM monitor shall be installed at work place.	The VCM level is monitored at 10 locations within the plant through an online Gas Chromatograph and connected to TNPCB care air center as real time monitoring .The observed values are well within the prescribed limit
10	The unit shall provide double walled pipeline in a concrete trench as envisaged in MTF project report for the transport of VCM raw material from the Jetty to the plant. The emergency shut down valves shall be provided for the purpose to close down automatically the transfer operation in case of any accident occur at the plant. Full-fledged leak detection and reporting system (LDAR) as per the guidelines of CPCB shall be installed.	<p>Double wall "pipe in pipe" arrangement provided for VCM pipeline and the same is aid in a concrete trench.</p> <p>Remote Operated Emergency Shut Down (ESD) valves are provided to shut off immediately and stop the transfer operation in case of any leak.</p> <p>VCM monitors are installed at the either end of the pipeline and incase of any leak as read by these monitors it would automatically activate Emergency Shut Down (ESD) and close the Remote Operated Valves (ROV).</p> <p>The vacuum in the pipeline annular space is continuously monitored for any leak</p> <p>Full-fledged LDAR program is in place, and monitoring being conducted as per CPCB guidelines by engaging MoEF &CC approved third party agency.</p>
11	The unit shall store the VCM in atmospheric storage tanks with double wall, 100% integrity construction suitable for storage of VCM as liquid with all safety devices. The unit has to ensure that no VCM vapors escape the tank, with a boil off recovery compressors and refrigeration system. The unit shall provide adequate level controls and	<p>VCM is stored in a double walled high integrity, atmospheric, refrigerated storage tanks constructed as per API 620.</p> <p>The tank has a boil off recovery system to ensure that no VCM vapor escapes from the tank and to maintain the pressure. The refrigeration system is installed to maintain the temperature.</p> <p>The tank level is continuously monitored</p>

	alarms for overfill prevention.	and has over fill protection. The following built-in safety measures are in place: 1. Level measuring instruments with alarm provision for high levels. 2. Temperature and pressure measuring devices with alarm provision for abnormal values. Temperature measuring instrument at the annular space of the two walls of the tanks as an early warning devices for leaks.
12	The unit shall provide electromagnetic flow meters with computer recorder arrangement at the inlet of ETP and at the final outlet for marine disposal.	The Electromagnetic flow meters are installed at the inlet of the ETP/ZLD .There is no marine disposal for the treated effluent as the plant is Zero liquid discharge Plant facility.
13	The unit shall provide continuous monitoring arrangement at the outlet of effluent stream to monitor the VCM level.	Effluent is treated in Effluent Treatment plant followed by double stage RO and Multiple effect evaporators and the recovered water is used for process. VCM is monitored in Waste Water Stripper outlet through MoEF approved lab and results are with in the limits.
14	The unit shall recover the VCM from wastewater arising from all process sections, including polymerization, centrifuge completely in a stripper and reuse the recovered VCM. The effluent from the stripper shall be further treated in ETP followed by RO plant and completely re-used. The effluent from the utilities such as cooling tower blow down shall be treated and reused.	Waste Water stripping column is used to recover the VCM in wastewater arising from polymerization and recovery sections. The effluents from the utilities such as cooling tower blow down, Boiler blow down are processed through comprehensive pre-treatment, double stage RO and Multiple effect evaporators. Complete water recycle and reuse is in place.
15	The unit shall transport the RO rejects of seawater desalination plant through pipeline at least 1 km into the sea at a depth of 6-7 meters for marine discharge. The temperature of the wastewater should be ± 5 Deg C of the ambient. The outfall shall be designed by conducting hydrological study through competent agency such	The seawater rejects from the desalination is discharged through a pipeline 1 kms in to the sea at a depth of 6.5 meters. Diffuser is installed at the discharge point. The temperature of the seawater rejects is within ± 5 Deg C of ambient. The RO Reject discharge diffuser system is designed based on the hydrological

	as NIOT. Necessary CRZ clearance shall be obtained.	studies conducted by National Institute of Ocean Technology (NIOT), Chennai Necessary CRZ clearance is obtained .
16	In order to ensure that the VCM in the treated effluent has been completely broken down and does not enter the marine environment, continuous bioassay test shall be placed before the marine outfall.	The continues bioassay test is not applicable, as treated water is not discharged in to the marine environment.. The effluent is treated in a ZLD plant and reused for Process.
17	Seawater desalination plant shall be installed and only 2800 m3/d water shall be used in the process. The unit shall ensure that the desalination plant should be more than 3000 m3/day with reserve storage capacity and that no ground water and surface water shall be used for the process and will ensure 'zero discharge except for RO rejects.	Seawater desalination plant installed, and ensured that Process water consumption within the prescribed Quantity. . Average water used in the process 1830.8 m3 /day (Apr"2023 to Sep "2023) only. Desalination plant More than 3000 m3/day with reserve storage capacity Provided. Process ensured with Zero liquid discharge except Desal RO reject. No ground water and surface water is used for any purpose.
18	The unit shall get the prior approval of the Competent Authority for installation of Marine Terminal facility for handling the VCM as per the CRZ Notifications.	Obtained the Environmental Clearance under the provision of Coastal Regulation Zone notification 1991 as amended time to time Ref: No.11-63/2005-IA-III GoI ,MOEF&CC .for installation of Marine Terminal facility for handling of VCM. We have obtained Consent to Establish (CTE) from Tamil Nadu Pollution Control Board (TNPCB). After completion of construction activities we have obtained Consent to Operate (CTO) from TNPCB. No Objection Certificate (NOC) No.G22 (47) 172 dated 27.08.2008 obtained from Chief Controller of Explosive for VCM storage and handling.
19	Solid waste generated in the form of PVC lumps from strainers will be disposed off in secured landfill within the plant premises. Oil sludge from captive power plant (CPP) will be sold to authorized re processors only. The unit shall collect, treat, store and dispose the hazardous waste (PVC lumps, waste oil/used oil) as per the Hazardous waste (Management & Handling) rules 1989 as amended.	Necessary authorization obtained from TNPCB for disposal of PVC lumps to TSDF, Site Gummudipoondi for safe disposal. TNPCB issued hazardous waste authorization No.16HRC6581200 dated 21.12.2016 for collection, storage and disposal of hazardous waste . Subsequent renewal for hazardous waste authorization received No.23HFC37969943

		<p>dated on 11.07.2023</p> <p>No CPP (Captive Power plant) in the plant and hence the generation of oil sludge not arise.</p> <p>However, The waste Oil/Used oil generated from process is sold to TNPCB authorized recycler as per Hazardous and other wastes (Management & Transboundary Movement) Rules,2016.</p>
20	The Green belt of adequate width and density shall be provided in a 33% of the total plant area to mitigate the effects of fugitive emission all round the plant. It shall be developed with local species as per CPCB guidelines in consultation with the District forest Officer.	Green belt developed in 33% of the total plot area . More than 35,000 trees planted It was developed as per CPCB guidelines in consultation with DFO, Cuddalore.
21	The unit shall use Low Sulphur Heavy stock (LSHS) oil/Light diesel Oil (LDO) as fuel.	Coal fire boiler is installed and clearance obtained from MoEF for use of coal as fuel, for boiler instead of LSHS, vide letter dated 30/5/2007.
22	The unit shall collect baseline health data for baseline exposure profiles for air toxic through competent Medical Institute. A sampling strategy to address community exposure should be developed and the results of monitoring shall be documented. Secondary health data containing basic descriptions of the health of the community shall be collected before the installation of the plant. A linkage of health should be established on the basis of current exposure. Plans for occupational and community health surveillance shall also be drawn.	<p>Base line health survey covering 21 villages has been carried out in 2006 through Mahatma Gandhi Medical College and Research Institute, Pondicherry and the final report already submitted to MoEF/TNPCB vide letter No.CSL/MoEF/833 dated 24.08.2009.</p> <p>We run three rural health centers in and around the plant and data obtained from these centers provide us information of current health status of the community.</p>
23	The unit has to ensure that the risk analysis is carried out through a competent agency such as EIL and the recommendations are implemented for all products and measures for containment in case of such risks are identified.	M/s Jacobs Engineering conducted risk analysis and subsequently M/s L&T Ramboll revalidated the report in January 2006. All the recommendations pertaining to design are implemented as detailed in General condition No 4.
24	The unit shall have on site and off site disaster management plan and have regular training drills for all personal to be involved in handling, storing and	<p>Onsite emergency plan prepared. It is approved by Chief Inspector of Factories, Chennai.</p> <p>Details pertaining to Off-site emergency</p>

	processing by updating training manual from time to time so as to handle the emergency situations such as major VCM release or a major fire if any, in the quickest possible time.	plan already submitted to District Authorities vide letter No. CSL/DC/649 dated 27.02.2009. Periodical on site emergency mock drill is conducted, Last Onsite Emergency Mock drill conducted on 20.05.2023 and Control measure Implemented as per action plan.
25	A separate environmental management cell with qualified staff in environment field shall be set up to monitor the various environment management plan under the control of senior executive who will report directly to the head of the organization.	Qualified Environment staff is in charge for monitoring the environment management plan and he reports directly to the head of the Organization. Environmental cell continuously monitor the various environment management plan.
26	The unit shall conduct every year a comprehensive environment audit and submit the report to the Ministry/CPCB/TNPCB. The audit shall focus on the performance of the pollution control measures, in-put control measures and mass balance for VCM. The input shall also conduct comprehensive EIA study once in five years and furnish the report to the MoEF/CPCB/TNPCB.	Comprehensive environment audit is conducted through MoEF approved agency and report is being submitted to TNPCB/ MoEF. The last report was sent vide letter, CCVL/TNPCB/1262 dated 22.03.2022. to MOEF/CPCB/TNPCB. Conducted by MoEF&CC Approved laboratory
27	The unit shall comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures, plants and properties which handling hazardous chemicals.	PLI Policy taken and Policy No. Policy No: 4007/245079386/01/000 dated April 01 2023 and valid up to March 31, 2024.

GENERAL CONDITIONS:-

S.No.	Stipulated conditions (Operational phrase)	Compliance status
i.	The project authorities must strictly adhere to the stipulations made by the TNPCB and the state Govt. including Fire Department, Dept of Explosives, Inspector of Factories, Local bodies, CRZ authorities etc.	Conditions stipulated by TNPCB, Fire service department, Explosives department, Inspector of factories, CRZ authorities and local bodies are being strictly adhered to. Fire License obtained from Divisional Fire Office, Cuddalore vide License Licence L.DIS NO.16154/B2/2022

S.No.	Stipulated conditions (Operational phrase)	Compliance status
		dated 27.12.2022 Valid till 27.12.2023 Factory License No.CDR01114 obtained dated on 31/12/2023 from Joint Director of Industrial Safety and Health, Cuddalore valid up to 31.12.2026.
ii.	No further expansion or modernization in the plant should be carried out without prior approval of the MoEF.	<p>No further expansion or modernization in the plant will be carried out without prior approval of MoEF.</p> <p>We have subsequently obtained the following Environment Clearance (EC) from MoEF</p> <p>1. Environmental Clearance No.J- 11011/180/2004-I.A.II (I) dated 02.06.2011 for increase in production capacity of PVC Resins from 1,70,000 TPA to 2,26,000 TPA</p> <p>2. Environmental Clearance No. No.J- 11011/364/2011-I.A.II (I) dated 18.12.2012 for increase in production capacity of PVC Resins from 2,26,000 TPA to 3,00,000 TPA.</p> <p>3.Environmental Clearance (EC) Ltr No. SEIAA-TN/F.No.6788/5(e)/EC- 69/2019 dated : 19.11.2019</p> <p>4.Environmental clearance amendment Ltr.No.SEIAA-TN/F.No.6788/5(e) EC no.69/Amendment/2023 dated 08.08.2023</p> <p>For expansion of PVC resin production from 300000 TPA to 600000 TPA</p>
iii.	At no time, the emission should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit.	In the event of failure of pollution control equipment, the unit will be stopped and will only be restarted when the pollution control equipment becomes operational and after achieving the desired efficiencies.
iv.	should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	<p>To handle power failures, we have installed Auto start emergency Diesel Generator 2000 KVA x 3 no's & 1010 KVA X 1 nos' as a standby arrangement.</p> <p>All the pollution control equipments are</p>

S.No.	Stipulated conditions (Operational phrase)	Compliance status
		connected with Emergency DG so that power is made available immediately incase of power failure.
v.	All the recommendations made in the EIA/EMP report and risk assessment report should be implemented.	<p>All risk mitigation measure recommended in the Environmental Management Plan and Risk analysis report (revalidated by L&T Ramboll, January 2006) have been implemented and monitoring is being carried out on continuous basis. Some of the important recommendations that were made and implemented are given below,</p> <ol style="list-style-type: none"> 1. Level measuring instruments with alarm provision for high levels. 2. Temperature and pressure measuring devices with alarm provision for abnormal values. 3. Pressure vacuum relieving devices. 4. Stand by compressor. 5. Alternate power supply for compressors and other safety system. 6. Remote locking facility for all header valves. 7. Double walled VCM transfer with anti corrosion coating. 8. Water sprinkler apart from water monitors. 9. Leak Detector and monitor in strategic locations.
vi.	The overall noise levels in and around the plant area should 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 should conform to the standards prescribed under EPA Rules 1989 viz 75 dBA (day time) and 70 dBA (night time).	<p>Noise level in and around plant is maintained well within the standard 75dB in day and 70 dB in night time.</p> <p>Appropriate acoustic hoods are provided in high noise generation equipment/area.</p> <p>Ambient noise level monitoring is being carried out on monthly basis and results are within the stipulated limits.</p> <p>TNPCB also conducts noise survey once in six month and results are within the standards.</p>

S.No.	Stipulated conditions (Operational phrase)	Compliance status
vii.	<p>The project authorities must strictly comply with the provision made in Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approval from chief controller of Explosives must be obtained before commission of the project.</p>	<p>We comply strictly with the MSIHC rules, 1989.</p> <p>No Objection Certificate No.G22 (47) 172 dated 27.08.2008 obtained from Chief Controller of Explosives, Nagpur.</p> <p>Onsite emergency mock drill is conducted once in six months in the presence of Deputy Chief Inspector of Factories, Cuddalore.</p> <p>Material Safety Data Sheet (MSDS) displayed in English and Tamil near the storage areas.</p> <p>Safety cautions and signboards are displayed in the plant area.</p> <p>External safety audit is conducted through competent safety auditors once in two years.</p> <p>Public liability Insurance available to provide immediate relief in the event of any hazard to human being ,other living creature /plant and properties while handling and storage of hazards.</p> <p>PLI Policy taken and Policy No. Policy No: 4007/245079386/01/000 dated April 01 2023 and valid up to March 31, 2024.till 23:59 hrs</p>
viii.	<p>The project authorities must strictly comply with the rules and regulations with regards to handling and disposal of hazardous wastes in accordance with the Hazardous wastes (Management and Handling) Rules, 2003. Authorization from TNPCC must be obtained for collections/treatment/storage/disposal of hazardous wastes</p>	<p>TNPCC issued Hazardous waste authorization No.23HFC37969943 dated 11.07.2023 under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 for collection, storage and disposal of hazardous waste.</p>

S.No.	Stipulated conditions (Operational phrase)	Compliance status
ix.	As committed, Project authorities will provide 15% of the project cost towards safety and environmental facilities and 20% of the annual operating cost towards maintaining and operating safety and environment control facilities. The funds so provided should not be diverted for any other purposes	<p>About 90 Crores of capital (out of total capital of : Rs 500 Crores) is used for the installation of Desalination, ZLD plant, Vent gas absorption and safety facilities like fire protection system, High Integrity safety system being followed, for process.</p> <p>Annual cost for the operation and maintenance of safety and environment control facility is around Rs.4.833 Crores during 2022-23.</p> <p>The funds provided for environmental protection is exclusively used for this purpose only.</p>
x.	The stipulated conditions will be monitored by the Regional Office of the Ministry at Bangalore /CPCB/TNPCB. A six monthly compliance report and the continuous stack emission and ambient air quality of monitoring data should be submitted to MoEF/CPCB/TNPCB regularly.	<p>Six monthly condition wise Compliance report along with Ambient air Quality & Stack Emission monitoring report being sent to Regional Office, MOEF Chennai/CPCB/TNPCB.</p> <p>Online Ambient Air Quality, Stack Emission is Connected with TNPCB CAR-AIR Chennai for continues monitoring.</p>
xi.	The Project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.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 should be forwarded to the Regional Office.	Advertisement were given in two local news papers and copies of the same were submitted to MOEF,RO.
xii.	The project Authorities should 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.	<p>The funding for the project is from Internal accruals and through loans from banks and agreement with banks on Feb 2007.</p> <p>Date of commencement of land</p>

S.No.	Stipulated conditions (Operational phrase)	Compliance status
		development: Jan 2006. Date of completion: 21 September 2009.

CCVL/TNPCB/0255
Nov 03, 2023

Additional Chief Conservator of Forest
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ) 1st and 2nd Floor,
Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Cuddalore Plant:

SIPCOT Industrial Complex Phase II
Semmakuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanmar.com
CIN U24100TN1991PLC020589

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Semmakuppam village, Cuddalore -607005, Tamil Nadu

Submission of Compliance Report from April-2023 to September -2023-Reg.

Ref: Environmental clearance No J.11011/180/2004-I.A.II(I) dated 02 June 2011.

With Reference to the above ,we herewith furnish the Half yearly compliance Report for the period of April 2023 to September 2023 With respect to all special conditions issued in the Environmental clearance No J.11011/180/2004-I.A.II(I) dated 02 June 2011 for our plant, Semmakuppam village, Cuddalore District, Tamil Nadu

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,



N.Palanisamy
Senior Vice President - Operations

Encl: As above

Copy to:

Central pollution control board (MOEF&CC, Govt of India)
77-A, Padi, Ambattur Industrial Estate,
Chennai-600058

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005



Regd Office: 9 Cathedral Road Chennai 600 086 India

Chemplast Sanmar Limited
Semmankuppam Village, Cuddalore -607005

**Compliance Report for Environmental Clearance No.J-11011/180/2004-I.A.II (I) dated
02.06.2011. for Period Apr-2023 to Sep-2023**

A. Specific Conditions.

S.No	Stipulated conditions (Operation Phase)	Compliance status
i.	All specific conditions and general conditions specified in the environmental clearance accorded vide Ministry's letter No.J-11011/180/2004-I.A.II (I) dated 28.11.2005 should be implemented and a compliance report should be regularly sent to the Ministry's Regional Office at Bangalore.	All specific conditions and general conditions specified in the environmental clearance accorded vide Ministry's letter No.J-11011/180/2004-I.A.II (I) dated 28.11.2005 are implemented and compliance report being submitted to MoEF regional office, Chennai on regular basis.
ii.	Total fresh water requirement from desalination plant should not exceed 1323 m3/Day. No ground water should be used.	As per Environmental clearance SEIAA-TN/F.No.6788/(5)e/EC /69/2019 dated 19.11.2019 and its / Amendment/2023 dated 08.08.2023 obtained. The fresh water requirement should not exceed 3899 m3/day for 600000 TPA ensured. The average fresh water from desalination plant 1830.8 M3 /day (Apr-'2023 to Sep'2023) . No ground water is used for any of the operations.
iii.	No effluent should be discharged outside the plant premises.	No effluent is being discharged outside the premises. We have installed a Zero Liquid Discharge (ZLD) plant comprising of a comprehensive pre-treatment, double stage RO and Multiple effect evaporators. The total effluent is treated through ZLD and completely recycled to the process.
iv.	Green belt should be developed in 33% of the total plot area. Time bound implementation action plan with budgetary provisions in consultation with DFO should be submitted to this Ministry.	Green belt developed in 33% of the total plot area developed. More than 35,000 trees are available. Advice from DFO, Cuddalore obtained for choosing the species vide DFO letter dated 14 March 2007 is implemented.

B. Specific Conditions-

S.No.	Stipulated conditions (Operation phase)	Compliance status
i.	A copy of environmental clearance letter for the existing plant and also for the enhanced capacity shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/ representation, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Copy of the clearance forwarded to the Panchayat, Zila Parisad/ Municipal Corporation. Environmental clearance is uploaded in our company website.
ii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF at Bangalore, the respective Zonal Office of CPCB and the TNPCB. The criteria pollutants levels namely, SPM, RSPM, SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sector parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Compliance report is being sent to the MoEF Regional Office on semi-annual basis. The updated status of compliance of Environmental conditions is being uploaded from time to time in the company website. Display arrangement is in place for parameters like PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , and VCM in ambient air as well as stack emissions like SPM, SO _x and NO _x . This is displayed at the factory entrance. The consolidated average value is uploaded in the company website. Online Ambient Air Quality Monitoring station is installed as per revised standards and all the data is connected online to Care Air Centre of TNPCB board office, Chennai.
iii.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e mail) to the Regional Office of MoEF at Bangalore, the respective Zonal Office of CPCB and the TNPCB. The Regional Office of this Ministry's	Compliance report is being sent semi annually to Regional Office, MoEF Chennai by email. Last compliance report submitted to MoEF&CC through E:mail id ref : <eccompliance-tn@gov.in on June-2023 .Hard copy sent to Regional office of MoEF &CC and CPCB zonal office Chennai.

S.No.	Stipulated conditions (Operation phase)	Compliance status
	/CPCB/TNPCB shall monitor the stipulated conditions.	
iv.	The environmental statement for each financial year ending 31 st March in form – V as is mandated to be submitted by the project proponent to the concerned State Pollution Control board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF by e-mail	Environmental Statement for each financial year is being submitted to Tamil Nadu Pollution Control Board. Last environment statement Form-V for the period of 2022-23 was submitted on 25th Sep 09 2023. Compliance report and form V is being sent to Regional Office, MoEF Chennai and the same published in the company website.
v.	The project proponent shall inform the public that the project has been accorded environmental clearance for the existing and enhanced capacity by the Ministry and copies of the clearance for the existing and enhanced capacity by the Ministry and copies of the clearance letter are available with the TNPCB and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . This shall 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 regional of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.	Environment clearance details were published within seven days of receipt of clearance letter in the regional and local newspapers that are widely circulated in English and vernacular language. Copy of the advertisement was already forwarded to Regional Office, Bangalore vide letter dated 26 November 2011.
vi.	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 to the Regional office.	Date of Commencement of Debottlenecking: June 2011. Date of Completion of Debottlenecking October 2011.

CCVL/TNPCB/0256
Nov 03, 2023

Cuddalore Plant:
SIPCOT Industrial Complex Phase II
Semmankuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanimar.com
CIN U24100TN1991PLC020589

Additional Chief Conservator of Forest
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ) 1st and 2nd Floor,
Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Semmankuppam village, Cuddalore -607005, Tamil Nadu

Submission of Compliance Report from April-2023 to September -2023-Reg.

Ref: Environmental clearance No J.11011/364/2011-I.A.II(I) dated 18 Dec 2012

With Reference to the above, we herewith furnish the Half yearly compliance Report for the period of April 2023 to September 2023 With respect to all special conditions issued in the Environmental clearance No J.11011/364/2004-I.A.II(I) dated 18 Dec 2012 for our plant, Semmankuppam village, Cuddalore District, Tamil Nadu

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,



N. Palanisamy
Senior Vice President - Operations



Encl: As above

Copy to:

Central pollution control board (MOEF&CC, Govt of India)
77-A, Padi, Ambattur Industrial Estate,
Chennai-600058

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005

Regd Office: 9 Cathedral Road Chennai 600 086 India

Chemplast Sanmar Limited
PVC Division Semmankuppam Village
Cuddalore, Tamil Nadu

Compliance Report for Environmental Clearance No.J-11011/364/2011-I.A.II (I)
dated 18 Dec 2012 for Period Apr" 2023 to Sep"2023

SPECIFIC CONDITIONS

S.No	Stipulated conditions (Operation Phase)	Compliance status
i)	The unit shall be carried out trend analysis (considering base year 2004) w.r.t air and water pollution in commensurate with EC earlier issued and submitted to the Ministry's Regional Office.	Trend analysis with respect to air and water pollution was submitted to Ministry's Regional office in Jun'2012 with (Considering base year 2004)
ii)	Compliance to all the environmental conditions stipulated in the environmental clearance letter No.No.J-11011/180/2004-I.A.II (I) dated 28 November 2005 and No.J-11011/180/2004-I.A.II (I) dated 2 June 2011 shall be satisfactorily implemented.	All the specific conditions and general condition specified in the environment clearance letter No.J-11011/180/2004-I.A.II (I) dated 28.11.2005 and No.J-11011/180/2004-I.A.II (I) dated 2 June 2011 are implemented and compliance report being submitted half yearly to MoEF regional office, Chennai
iii)	The process emissions (SO ₂ , NO _x , HC (Methane & Non-methane) and VCM from various units shall conform to the standards prescribed under the Environment (Protection) rules, 1986 or Norms stipulated by the Tamil Nadu Pollution Control Board (TNPCB) whichever is stringent. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	The gaseous emissions (SO ₂ , NO _x , HC (Methane & Non-methane) and VCM from various process units are within the limits. In case of failure of pollution control system, the unit will not be started until the control measures are rectified to achieve the desired efficiency. All monitoring equipments are powered with UPS and connected with Emergency DG power.

iv)	<p>Continuous ambient air quality monitoring stations for (PM10, PM2.5, VCM, NO_x, CO, HC (Methane & Non-methane)) shall be set up in consultation with CPCB/TNPCB. Unit shall follow CPCB/MoEF calibration protocol for the calibration of continuous stack as well as ambient air quality monitoring analyzer installed in all stations. Data of stack monitoring and ambient air shall be displayed on web as well as outside the premises at prominent place for public viewing. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and TNPCB.</p>	<p>Online Ambient Air Quality Monitoring station is installed as per revised standards and all the real time data is connected to Care Air Centre of TNPCB, Chennai.</p> <p>Calibration protocol is followed as per CPCB/MoEF guidelines.</p> <p>Display arrangement is in place for parameters like PM10, PM2.5, SO₂, NO_x, and VCM in ambient air as well as stack emissions like SPM, SO_x and NO_x. This is displayed at the factory entrance.</p> <p>The consolidated average value is also uploaded in the company website.</p> <p>The monitored data are sent to MOEF&CC, TNPCB, Regional of CPCB.</p>
v.	<p>Ambient air quality data shall be collected as per NAAQES standards notified by the ministry on 16 September 2009 and trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.</p>	<p>AAQ is Monitored with NABL and MOEF&CC approved laboratory at 7 location on monthly basis through external agency and 6 location on six monthly basis through TNPCB. Online monitoring facility is installed at the site monitored data are transmitted to TNPCB's Care Air Centre. Ambient Air Quality Trend analysis is being carried out with respect to past monitoring results as stated and further informed that the APC measures are maintained.</p>
vi.	<p>Monitoring of fugitive emissions shall be carried out as per the guidelines of CPCB by fugitive emission detectors and reports shall be submitted to the Ministry's Regional Office at Bangalore.</p>	<p>Fugitive emission monitoring is being carried out as per CPCB guidelines through NABL/MoEF approved lab on quarterly basis and report is being submitted to the TNPCB/Ministry's Regional Office, Chennai on regular basis.</p>

vii.	<p>In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling and conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc, shall be regularly monitored. The emissions shall conform to the limits stipulated by the TNPCB.</p>	<p>Provided adequate Control measures for fugitive emissions by providing closed storage, Closed handling and conveyance of chemical / Materials ,Multi cyclone separator and water sprinkler system .</p> <p>In dryer plant, multi cyclone followed by water scrubber is installed and maintained.</p> <p>Water sprinkler system installed in the coal handling area to control dust/fugitive emission in the work place.</p> <p>Stack emission monitoring is being done through NABL/MoEF approved lab on monthly basis and report is submitted to TNPCB.</p>
viii.	<p>Fugitive emissions of HC and VCM from product storage tank yards etc, must be regularly monitored. Sensors for detecting HC and VCM leakage shall also be provided at strategic locations. Leak detection and repair program shall be implemented to control HC/VOC & VCM emissions. Work zone monitoring shall be carried out near the storage tanks besides monitoring of HC/VOC and VCMs in the work zone.</p>	<p>Online Gas Chromatogram is used to monitor the GLC in work place in 10 locations. The results are below detectable limits (BDL). The detection limit of GC is 0.01ppb. Online GC is connected to Care Air Centre, Chennai office. Records are available with us for verification.</p> <p>As per ECVM charter Leak detection and repair (LDAR) program is undertaken every year through MoEF approved lab.</p>
ix.	<p>The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.</p>	<p>Adequate stack height provided to the DG sets as per CPCB standards and also acoustic enclosures provided to control noise level.</p>
x	<p>Total fresh water requirement from desalination plant after expansion shall not exceed 2040 m3/day and prior permission shall be obtained from the competent authority.</p>	<p>Water requirement met through Desalination plant and recycle water from Zero Liquid Discharge Plant (ZLD).</p> <p>Average fresh water used in the process for the period of 1830.8 M3</p>

		/day (Apr"2023 to Sep "2023) only.
xi.	Industrial effluent generation shall not exceed 2810 m3/day. Effluent shall be treated in effluent treatment plant and treated water will be passed through reverse osmosis. Treated effluent will be recycled / reused within factory premises. The RO rejects shall be sent to MEE for evaporation. Sewage shall be treated in STP. Water quality of treated effluent shall meet the norms prescribed by CPCB/SPCB.	<p>We have installed a Zero Liquid Discharge (ZLD) plant comprising of a comprehensive pre-treatment, double stage RO and Multiple effect evaporators. The total effluent is treated through ZLD and completely recycled to the process.</p> <p>Sewage is collected and treated in STP. Treated sewage is meeting the norms prescribed by CPCB /TNPCB and water is used for green belt development.</p> <p>Average effluent generation for period of Apr-2023 to Sep-2023 is 1868.83 KL /day.</p>
xii.	As proposed, no effluent shall be discharged outside the factory premises and Zero water concept shall be followed.	<p>No effluent is being discharged, outside the premises.</p> <p>The total effluent is treated through Zero Liquid Discharge and completely recycled and reused in the process.</p>
xiii.	The project authorities must strictly comply with the rules and regulation with regard to handling and disposal of Hazardous Waste (Management, Handling and Trans Boundary Movement) Rules, 2008 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous wastes.	<p>TNPCB has issued Hazardous waste authorization No.23HFC37969943 dated 11.07.2023 under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 for Generation, Collection, storage and Transportation and Disposal of hazardous waste .</p> <p>As per TNPCB direction hazardous waste is being sent to TSDF site, Gummudipoondi for safe disposal.</p> <p>Waste Oil/Used oil is disposed to TNPCB authorized recycler.</p>
xiv.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Corporate Responsibility for Environmental Protection (CREP) recommendation is implemented and monitoring is in place.
xv.	As proposed, ETP sludge, evaporation salts, desalination plant sludge and non-polymerized residue (PVC lumps) shall be disposed off to the TSDF. Used	ETP sludge, evaporation salts, desalination plant sludge and non-polymerized residue (PVC lumps) are being sent to TSDF site,

	oil/spent oil shall be sent to the authorized recyclers/re-processors.	Gummudipoondi for safe disposal. Used/spent oil is sold to TNPCB authorized recyclers/re-processors
xvi.	Proper utilization of fly ash shall be ensured as per fly ash notification, 1999 as amendment in 2009. The fly ash from boiler shall be sold to brick manufactures/cement plant.	Fly ash is being collected in dedicated silo and being sold to brick manufacturing unit. Fly ash disposal is complied with fly ash notification ,1999 amended in 2009 & 2016.
xvii.	Fly ash shall be stored separately as per CPCB guidelines so that it shall not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash and dust shall be avoided.	Fly ash stored in dedicated silo as per CPCB guidelines. The disposal is directly from silo to the fly ash trucks. Hence, there is no possibility of fly ash becoming air borne by wind or mixing with rain water. There is no exposure of workers to fly ash.
xviii.	The company shall strictly comply with the rules and guidelines under Manufacture Storage and import of Hazardous Chemicals (MSIHC) rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the motor vehicle act (MVA), 1989.	Hazardous chemicals are handled as per the guidelines of Manufacture Storage and import of Hazardous Chemicals (MSIHC) rules, 1989 as amended time to time as informed. Necessary approval from JDISH / Chief Controller of Explosives are in place and periodically renewed as per the requirement.
xix.	The company shall undertake following waste minimization measures: a. Metering and control of quantities of active ingredients to minimize waster. b. Reuse of by-products from the process as raw materials or as	The following waste minimization measures undertaken a. Dedicated meters are installed for raw materials and other chemicals and is monitored closely for thier consumption. b. No by product is produced in the

	<p>raw material substitutes in other processes.</p> <p>c. Use of automated filling to minimize spillage.</p> <p>d. Use of close feed system into batch reactors.</p> <p>e. Venting equipment through vapour recovery system.</p> <p>f. Use of high-pressure hoses for equipment clearing to reduce waste water generation.</p>	<p>production process.</p> <p>c. Automatic bagging and palletizing systems are installed to minimize the spillage of PVC.</p> <p>d. The polymerization process is closed reaction batch system.</p> <p>e. Vent Gas Absorption (VGA) unit installed to recover the VCM.</p> <p>f. High-pressure water is used for reactor cleaning (300 bar pressure).</p>
xx.	<p>The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.</p>	<p>Fire protection equipment like fire hydrant, fire monitors, Medium Velocity Sprinklers with deluge system, fire extinguisher and smoke detector are installed as per guidelines of NFPA.</p> <p>Oil spill kit 5 no's available at site for any emergency purpose.</p>
xxi.	<p>To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable material should be in place.</p>	<p>Minimum safe distance between chemical/flammable materials to ignition source is ensured to prevent fire and explosion.</p>
xxii.	<p>Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.</p>	<p>Project specific environmental manual prepared by Jacobs Engineering is available at site.</p>
xxiii.	<p>All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.</p>	<p>All the recommendation mentioned in the rapid risk assessment report, disaster management plan and safety guidelines have been implemented.</p>
xxiv.	<p>Company shall adopt Corporate Environment Policy as per the ministry's O.M.NO.J-11013/41/2006-IA.II(I) dated 26 April 2011 and implemented.</p>	<p>Company adopts a Corporate Environmental Policy & Continual improvement as per the guidelines of MoEF.</p> <p>ISO-14001 system certified for the unit by TUV-SUD India.</p>

xxv.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational health surveillance is being done on regular basis and records are maintained as per Factories Act
xxvi.	Green belt shall be developed in 33% of plot area to mitigate the effects of fugitive emissions all around the plant as per CPCB guidelines in consultation with the local DFO.	Green belt developed in 33% of the total plot area. To mitigate the effect of fugitive emissions all around the plant as per CPCB guidelines & Advise from DFO Cuddalore.
xxvii.	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.	<p>Provision arranged for housing for the construction labour with in the site with all necessary infrastructure and facilities such as fuel for cooking ,mobile toilets, sewage treatment plant etc..</p> <p>The temporary structure was removed after project activity completed ,without impact on surrounding environment.</p>

GENERAL CONDITIONS:-

S.No.	Stipulated conditions	Compliance status
i.	The project authorities shall strictly adhere to the stipulations made by the Tamil Nadu Pollution Control Board.	All the conditions stipulated by Tamil Nadu Pollution Control Board have been implemented .

S.No.	Stipulated conditions	Compliance status
ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the ministry of environment and forests. In case of deviations or alterations in the project proposal from those submitted to this ministry for clearance, a fresh reference shall be made to the ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	For expansion of PVC resin production from 300000 TPA to 600000 TPA .Environmental Clearance (EC) Ltr No.SEIAA-TN/F.No.6788/5(e)/EC-69/2019 dated : 19.11.2019 has been obtained All the additional condition imposed in the EC for 300000 to 600000 TPA expansion will be complied during expansion.
iii.	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	The location of ambient air quality monitoring stations were installed with consultation of Tamil Nadu Pollution Control Board.Online ambient air quality monitoring station is installed as per revised standards and all the data is connected online to Care Air Centre, TNPCB Board office, Chennai.
iv.	The overall noise levels in and around the plant area shall be kept well within the standards 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 Environment (Protection) act, 1986 rules viz, 75 dBA (day time) and 70 dBA (night time).	Noise level in and around the plant is maintained well within the standard . Appropriate acoustic control measure provided on high noise generation equipment/area. Ambient noise level monitoring is being carried out on monthly basis and results are within the stipulated limits. TNPCB monitors the noise level once in six months and results are within the limits.
v.	The company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	Rainwater harvesting system is implemented. Roof top rain water is collected and used for recharging the ground water.

S.No.	Stipulated conditions	Compliance status
vi.	Training shall be imparted to all employees on safety and health aspects of chemicals handling, pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Training programmers on safety and health aspect are conducted on a regular basis for employees and contractor workers. Pre-employment/regular medical examinations are being conducted for employees once in six months.
vii.	Usage of Personnel Protection Equipments (PPEs) by all employees / workers shall be ensured..	Usage of Personnel protective equipment by all employees is ensured.
viii.	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	All risk mitigation measures recommended in the Environmental Management Plan and Risk analysis report done in January 2012 have been implemented.
ix.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	<p>Several community development initiatives covering children's education, infrastructure development and rural health development are being carried out under Corporate Social Responsibility (CSR) at Cuddalore Plant.</p> <ul style="list-style-type: none"> a. Rural health centers are functioning in Semmankuppam, Nochikadu and Chitrapettai villages.3 location b. Education aid for school children studying at Chitrapettai Village. c. Infrastructure facility for evening study centre at Poondiyankuppam Village such as Facility for water, facility development such as floorTile work, ground leveling around the school etc.. d. Infrastructure facility for nearby schools. e. Free Evening tuition centre. f. Desilting of lake

S.No.	Stipulated conditions	Compliance status
x	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Several eco-development measures are being carried out in nearby villages for the overall improvement of the environment. <ul style="list-style-type: none"> a. Supply of saplings to nearby schools. b. Construction of individual toilets in Chitrapettai village to improve hygiene conditions. c. Costal Cleaning Activity in nearby villages.
xi.	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Environmental Monitoring Cell is established with sufficient technical staff. Well-equipped laboratory is in place to carry out the Environmental Monitoring .
xii.	As proposed, the company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forest as well as the statement government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management / pollution control measures shall not be diverted for any other purpose.	About 90 Crores of capital (Total capital: Rs 500 Crores) is used for the installation of Desalination, ZLD plant , APC measures. Annual cost for the operation and maintenance of environment system, and towards implementation of the stipulated conditions by regulating authorities is around Rs.4.833 Crores for the period of 2022-2023.
xiii	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zila Parisad/Municipal Corporation, Urban local body and the local NGO, if any from who suggestions/representations, if any were received while processing the proposal.	Copy of the clearance forwarded to the concerned Panchayat, Zila Parisad / Municipal Corporation.
xiv	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (Both in hard copies as well as by email) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the	Environmental Compliance status report Once in six month sent to ecompliance-tn@gov.in and TNPCB-Cuddalore/CPCB Zonal office & Regional office of the MoEF&CC as per new direction

S.No.	Stipulated conditions	Compliance status
	TN Pollution Control Board. A copy of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	
xv	The environmental statement for each financial year ending 31 st March in Form V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by email.	<p>Environmental Statement for each financial year is being submitted to Tamil Nadu Pollution Control Board.</p> <p>Last environment statement for the FY 2023-23 was submitted to Tamil Nadu Pollution Control Board on Sep 25th 2023. Vide letter dated CCVL/TNPCB/0250</p> <p>Compliance report and Form V is being sent to MoEF Regional Office, Chennai</p>
xvi.	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 SPCB/Committee and may also be seen at website of the ministry at www.moef.nic.in . This shall 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 concerned Regional Office of the ministry.	<p>Advertisement were given in two local news papers and same were forward to regional office, Bangalore vide letter dated 20.05.2013.</p> <p>Environment clearance details were published within seven days of receipt of clearance letter in local news papers that are widely circulated in the vernacular language.</p> <p>Copy of the advertisement was already forwarded to Regional Office, Bangalore vide letter dated 20.05.2013.</p>
xvii.	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 start of the project.	<p>The funding for the project is from Internal accruals and through loans from banks and agreement with banks on Feb 2007.</p> <p>Date of commencement of land development: Jan 2006.</p> <p>Date of completion: 21 September 2009.</p>



Chemplast Cuddalore Vinyls Limited

CCVL/TNPCB/0257
Nov 03, 2023

Additional Chief Conservator of Forest
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ) 1st and 2nd Floor,
Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Cuddalore Plant:
SIPCOT Industrial Complex Phase II
Semmankuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanmar.com
CIN U24100TN1991PLC020589

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, Marine Terminal Facility, Chithirapet village,
Cuddalore -608801, Tamil Nadu

Submission of Compliance Report from April-2023 to September -2023-Reg.

Ref: Environmental clearance No.11.63/2005.1A.III dated 19 Dec 2005

With Reference to the above ,we herewith furnish the Half yearly compliance Report for the period of April 2023 to September 2023 With respect to all special conditions issued in the Environmental clearance No.11.63/2005.1A.III dated 19Dec 2005 for our Marine Terminal Facility, Chithirapet village, Cuddalore District, Tamil Nadu

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,

N.Palanisamy
Senior Vice President - Operations



Encl: As above

Copy to:

Central pollution control board (MOEF&CC, Govt of India)
77-A, Padi, Ambattur Industrial Estate,
Chennai-600058

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005

Regd Office: 9 Cathedral Road Chennai 600 086 India



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

Chemplast Sanmar Limited
Marine Terminal Facility, Chitrapettai village
Cuddalore District, Tamil Nadu

Compliance Report for Environmental Clearance No.11.63/2005.1A.III dated 19.12.2005 for
Period Apr-"2023 to Sep"2023

A. SPECIFIC CONDITIONS

S.No	Stipulated conditions (Operation Phase)	Compliance status
i.	The unit should obtain No Objection Certificate from the TNPCB before commissioning of the jetty and the unit should comply with the norms prescribed by the TNPCB from time to time.	<p>Consent to operate was obtained from Tamil Nadu Pollution Control Board (TNPCB) under Water act (vide consent order No.21785 dated 31.03.2009 and Air Act (vide consent order No.17824 dated 31.03.2009).</p> <p>Subsequently the Consent order for the operation of the plant under Water & Air Act renewed and valid till 31.03.2027.</p> <p>Consent Order No: 2307147638958 dated 28.02.2023</p> <p>Consent Order No: 2307247638958 dated 28.02.2023</p>
ii.	All the conditions stipulated by Environment and Forest Department, Govt. of Tamil Nadu vide letter No.29436/EC/2005-1, dated 9.11.2005 and recommendations of the Tamil Nadu State Coastal Zone Management Authority in its meeting held on 17.10.2005.	All the conditions stipulated by Environment & Forest Department, Government of Tamil Nadu and recommendation of Tamil Nadu State Coastal Zone Management Authority was incorporated and implemented.
iii.	The Environmental and risk mitigation measure delineated in the Environmental Management Plan and Risk analysis reports must be strictly implemented while executing and operating the project.	Environmental and risk mitigation measures delineated in the Environmental Management Plan and Risk analysis reports are implemented.
iv.	The details pertaining to the sludge disposal obtained from the desalination plant may be provided.	<p>Hazardous waste renewal authorization No.23HFC37969943 dated 11.07.2023 was obtained from Tamil Nadu Pollution Control Board for the disposal of sludge from desalination plant.</p> <p>As per TNPCB direction, desalination plant sludge is disposed at common disposal facility of TamilNadu waste management Limited at Gummudipondi</p>

v.	Details pertaining to the model studies carried out for discharge of the brine from the desalination plant including the time taken for mixing may be provided.	National Institute of Ocean Technology (NIOT) carried out the Dispersion Model studies for discharge of the brine from the desalination plant. Copy of the report was already submitted vide letter No.CSL/MoEF/832 dated 24 August 2009.
vi.	The chemical characteristics of the sediments taken in the marine and Coastal Regulation zone area may be provided.	Chemical characteristics of the sediments in the marine and Coastal Regulation Zone area (CRZ) was studied by the Centre for Advanced Marine Biology Institute (CASMB), Parangipettai, Cuddalore.
vii.	The project authority may increase the depth of laying of underground and sub marine pipeline taking into account the relevant International codes and practices.	VCM underground and sub marine pipeline was laid as per International code and practices of DNV Standards. VCM underground pipeline is laid offshore at a depth of 3.0 meters from seabed and onshore pipeline was laid in a concrete trench at a depth of 1.5 meters from ground level.
viii.	Point wise clarification/action plan on the issue raised in the public hearing (for the main project).	Point wise clarification/action raised in the public hearing for the main project as follows: 1. Ground water usage and effluent disposal. Reply: No ground water is used and the entire water requirements are met through Desalination Plant. Total effluent is recycled through "Zero liquid discharge facility". 2. Dioxin release Reply: No combustion process is involved during the production of PVC and hence no dioxin emission possible. 3. Job opportunities Reply: About 2000 labours were engaged during the construction phase and also about 50 people are employed during operational phase.
ix.	It should be ensured that the existing mangroves, if any, at the project site are not adversely affected due to the project activities.	Mangroves /Vegetation are not available in the project area and nearby vicinity.
x.	All the construction material sand, blue metal, moor ram etc. shall be obtained only from the authorized quarries.	All the construction materials like sand, blue metal moor ram etc are procured from authorized quarries during construction of the project.
xi.	The land pits shall be reclaimed immediately after the construction phase.	All the land pits were reclaimed after the completion of construction.

xii.	There shall be no withdrawal of ground water in CRZ area, for this project. The proponent shall ensure that as a result of the proposed construction, ingress of saline water into ground water does not take place. Piezometers shall be installed for regular monitoring for the purpose at appropriate locations on the project site.	Ground water is not drawn in the CRZ zone for the project. Two piezometric sampling well is installed near the Port Control Building to monitor the ground water quality.
xiii.	The project shall not be commissioned till the PWD/Electricity Department provides the requisite water supply and electricity to the project.	The jetty was commissioned only after getting power supply from Tamil Nadu Electricity Board (TNEB).
xiv	The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.	All the construction activities of Marine Terminal Facility (MTF) were carried out in conformity with the provision of the CRZ notification, 1991 -
xv.	Unloading arm and transfer line of VCM etc must be made leak proof and designed international standards. The transfer line should be completely emptied after every unloading in order to prevent any risk during standby conditions.	Leak proof unloading arm was installed as per American Standard for Mechanical Engineer (ASME). Transfer line is being emptied after every unloading operation activity to prevent any risk during standby conditions.
xiv.	Green buffer zone shall be provided all around the project area in consultation with local forest Department and the report submitted to this Ministry's Regional Office at Bangalore.	Green buffer zone provided all around the project area . As per guidance of DFO, Cuddalore the native species planted and maintained with dedicated team reports are submitted periodically..
	Prior approvals from Chief Controller of Explosives, Chief Inspectorate of Factories must be obtained before installing the project.	No Objection Certificate obtained from Chief Controller of Explosives, Nagpur. Lr.No.G.22 (47) 172 dated 27.08.2008.Subsequent renewal obtained Fire License obtained from Divisional Fire Office, Cuddalore vide License L Dis.No.16154/B2/2022 dated 27.12.202 valid up to 26.12.2023. Factory License obtained dated on 28/10/2021 from Joint Director of Industrial Safety and Health, Cuddalore valid up to 31.12.2026.

B. GENERAL CONDITIONS:-

S. No.	Stipulated conditions	Compliance status
i.	Construction of the proposed structures should be undertaken meticulously conforming to the existing Central/Local rules and regulations including coastal Regulation zone Notifications 1991 and its amendments. All the construction design/ drawings relating to the proposed construction activities must have approvals of the concerned state/UTs government department/ Agencies.	<p>All the construction activities were carried out conforming to the Central/Local rules and regulations including CRZ notifications.</p> <p>The construction activities were carried out as per approvals of Director General of Shipping, (DG Shipping), Navigation Safety and Port Committee (NSPC).</p>
ii.	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	<p>Adequate provisions were provided for water supply, sanitation and fuel during the construction phase of the project.</p> <p>No mangroves in the project area/vicinity.</p>
	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluent by providing a proper wastewater treatment plant outside the CRZ area. The quality of treated effluent, solid wastes and noise level etc. must conform to the standards laid down by the competent authorities including the CPCB/ TNPCB/ MoEF under the Environment (protection) Act, 1986, whichever are more stringent.	<p>Noted</p> <p>The operation involves only unloading of VCM from ship to shore and no other activity is carried out at the site</p> <p>There is no generation of effluent, Solid waste in marine terminal facility.</p>
iv.	The proponent should obtain the requisite consent for discharge effluent and emission under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981 from the TNPCB before commissioning of the project and copy of each of these shall be sent to this Ministry.	<p>Consent to operate was obtained from Tamil Nadu Pollution Control Board (TNPCB) under Water act (vide consent order No.21785 dated 31.03.2009 and Air Act (vide consent order No.17824 dated 31.03.2009). before commissioning of the jetty.</p> <p>Subsequently the Consent order for the operation of the plant under Air & Water Act is being renewed from time to time. Presently Unit having a valid consent to operate up to 31.03.2027.</p>

S. No.	Stipulated conditions	Compliance status
		<p>Consent No: Air Act. :2307247638383 Dated on 08.02.2023 Valid till 31.03.2027</p> <p>Consent No Water Act. 2307147638383 on 08.02.2023 Valid till 31.03.2027</p>
v.	The proponents shall provide for a regular monitoring mechanism so as to ensure that the treated effluent conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for inspection to the concerned State/Central officials during their visits.	<p>There is no trade effluent generated at Marine terminal facility.</p> <p>Marine Water sample is collected every month and analyzed through NABL/MoEF approved lab, and TNPCB .The analysis reports are maintained and available for inspection.</p>
	In order to carry out the environmental monitoring during the operational phase of the project, the project authorities should provide an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.	<p>Environmental Monitoring Cell is appointed with sufficient technical staff for continuous monitoring of various environmental parameters.</p> <p>Well-equipped environmental laboratory is in place in the main plant to cater regular monitoring of ambient, stack and water quality.</p>
vii.	The sand dunes and mangroves, if any, on the site should not be disturbed in any way.	There is no sand dunes and mangrove in the project area/ vicinity.
viii.	A copy of clearance letter will be marked to the concerned Panchayat /local NGO, if any, from whom any suggestion/representations has been received while processing the proposal.	Copy of clearance letter already forwarded to concerned Panchyat/local NGO.
ix.	The TamilNadu pollution control board committee should display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office / Tahsildar's Office for 30 days.	Copy of clearance letter was displayed at the Regional Office and Collector's Office.

S. No.	Stipulated conditions	Compliance status
x.	The funds earmarked for environmental protection measures should be maintained, in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditures on environmental safeguards should be reported to this Ministry's Regional Office at Bangalore and the TNPCB/committee.	Funds earmarked for environmental protection is only used for Environmental improvements. The expenditure on Environmental protection for the year Rs.4.833 Crores during 2022-23 .
xi.	Full support should be extended to the officers of this Ministry's regional Office at Bangalore and the officers of the CPCB/TNPCB by the project proponents during their inspection for monitoring purpose, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Full support is being extended during site inspection of MoEF/CPCB/TNPCB officials. Necessary documents/details including status report is being furnished during the site inspection.
xii.	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	Noted
xiii.	This ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Project activities was completed and Marine Terminal is in operation since 2009.
xiv.	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.	Noted New conditions towards protection of environment by any competent authority will be complied with.
xv.	The Project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with TNPCB. 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	Copy of clearance letter already furnished to TNPCB. The advertisement was given in the widely circulated newspapers in English and local vernacular language.

S. No.	Stipulated conditions	Compliance status
	one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office.	
xvi.	The project Authorities should 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.	<p>Date of Financial Closure: Feb 2007.</p> <p>Date of commencement of construction: July 2007.</p> <p>Date of Commissioning of the MTF: 24 July 2009.</p>



Chemplast Cuddalore Vinyls Limited

CCVL/TNPCB/0258
Nov 03, 2023

Additional Chief Conservator of Forest
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ) 1st and 2nd Floor,
Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Cuddalore Plant:

SIPCOT Industrial Complex Phase II
Semmankuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanmar.com
CIN U24100TN1991PLC020589

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Semmankuppam village, Cuddalore -607005, Tamil Nadu


Submission of Compliance Report from April-2023 to September -2023-Reg.

Ref: Environmental clearance No. SEIAA-TN/F.6788/5(e)/EC-69/2019 Dated 19 Nov2019
Environmental clearance No. SEIAA-TN/F.6788/5(e)/EC-69/Amendment /2023
dated 08 Aug 2023.

With Reference to the above ,we herewith furnish the Half yearly compliance Report for the period of April 2023 to September 2023 With respect to all special conditions issued in the Environmental clearance No. SEIAA-TN/F.6788/5(e)/EC-69/2019 dated 19 Nov2019 for our plant, Semmankuppam Village, Cuddalore ,Tamil Nadu

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,


N. Palanisamy
Senior Vice President - Operations



Encl: As above

Copy to:

Central pollution control board (MOEF&CC, Govt of India)
77-A, Padi, Ambattur Industrial Estate,
Chennai-600058

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005

Regd Office: 9 Cathedral Road Chennai 600 086 India



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

Chemplast Cuddalore Vinyls Limited
Semmankuppam Village, Cuddalore -607005

Compliance Report for Environmental Clearance Letter No.SEIAA-
TN/F.No.6788/5(e)/EC-69/2019 dated 19.11.2019
for Period Apr'2023 to Sep'2023

A. SPECIFIC CONDITIONS

S. No	Stipulated conditions	Compliance status
1	It is mandatory for the project proponent to furnish to the SEIAAA, half yearly compliance report in hard and soft copies on 1st June and 1st December of each calendar year in respect of the conditions stipulation in the prior environmental clearance issued	Half yearly compliance report is being submitted before 1 st of June & 1 st of Dec for every year.
2	" Consent for establishment" shall be obtained from TamilNadu Pollution control board and a copy of the same shall be furnished to the SEIAA, Tamil Nadu before start of project construction activity at this site	We have obtained CTE from TNPCB & copy of the same has been forwarded vide Letter dated 28.11.2022 CCVL/SEIAA-TN/0952 To SEIAA. Consent to Establishment No.2206239983654 dated 23.05.2022 (Air) Valid till March 31,2026 Consent to Establishment No.2206139983654 dated 23.05.2022 (Water) Valid till March 31,2026
3	" Consent to Operate" should be obtained from the Tamil Nadu pollution control board before the start of the operation of the project and copy shall be submitted to the SEIAA-TN	Company is proposed to go for CTO in multiple phases based on the market demand and availability of financial resources. However, company assures the CTO obtained for each phase will be submitted to SEIAA , Tamil Nadu.
4	The implementation of Environmental management plan in regard to treatment and disposal of sewage & Effluent , solid waste ,management, hazardous - waste management and CSR activities should be carried out, as proposed and committed. Regular monitoring should be carried out, as proposed and committed. Regular monitoring should be carried out during operation phases.	We will assure that the implementation of Environmental management plan in regard to treatment and disposal of sewage & Effluent , solid waste ,management, hazardous - waste management and CSR activities will be out, as proposed and committed. Regular monitoring will be carried out, as proposed and committed. Regular monitoring will be carried out as and when we obtained the CTO and subsequent operation phases
5	The residue collected from the evaporator shall be documented by maintaining proper register and it	Noted. We assure that the residue collected from the evaporator will be documented by maintaining a dedicated

	should be made available at the time of inspection.	register and it will be made available at the time of inspection.
6	Adequate dust extraction system such as ducting with dust extracting arrangement wherever required shall be established to achieve occupational- health standards and ambient air quality standards.	Noted. We will establish adequate dust extraction system such as ducting with dust extracting arrangement required for the PVC drier to achieve occupational- health standards and ambient air quality standards once we add any new Drier in our operating plant
7	The proponent shall carryout best housekeeping practices as spillage management for handling and maintenance of raw materials and products inside the unit premises.	. Company is currently sustained with "Best housekeeping practices " at present & continue to do the same even after the expansion.
8	Nature of chemicals handled, the do and Donts shall be displayed at all vital locations as laid down in MSDS.	Company is already displayed the Do and Don't Boards of Chemicals handled at all vital locations. It will be sustained for the future as well.
9	The proponent shall ensure that the quantity of hazardous waste handed over to the TSDF shall match with the quantity generated.	. We are ensuring that the quantity of hazardous waste handed over to the TSDF is match with the quantity generated
10	The proponent shall provide a separate closed area earmarked for storing solid waste including hazardous waste as proposed.	We are providing a separate closed area earmarked for storing solid waste including hazardous waste as proposed.. It will be sustained for the future as well.
11	The proposed shall dispose hazardous waste generated as per the hazardous and other wastes(Management and Transboundary movement) Rules, 2016. Spent oil from DG sets should be stored in HDPE drums in an isolated covered facility and disposed off through TPCB registered recyclers	. We are disposing the hazardous waste generated as per the hazardous and other wastes(Management and Transboundary movement) Rules, 2016. Spent oil from DG sets is being stored in HDPE drums in an isolated covered facility and disposed off through TPCB registered recyclers. It will be sustained for the future as well.
12	The plastic wastes hall be segregated and disposed as per the provisions of plastic waste(Management & handling) Rules 2016.	We are in compliance with the plastic wastes segregation and disposal as per the provisions of plastic waste(Management & handling) Rules 2016. We continue to do the same in future as well.

13	The e-waste generated should be collected and disposed to a nearby authorized e-waste centre as per e-waste(Management & Handling) Rules 2016 as amended.	. We are in compliance with e-waste generation, collection and disposal to a nearby authorized e-waste centre as per e-waste(Management & Handling) Rules 2016 as amended. We continue to do the same in future as well.
14	The municipal solid waste generated shall be collected, segregated and disposed as per solid waste management Rules, 2016.	We are in compliance with the municipal solid waste generation, collection, segregation and disposal as per solid waste management Rules, 2016. We continue to do the same in future as well.
15	The industry shall conduct air sampling at least once in six months for the general core parameters(PM10, PM2.5, SOx, NOx) through TNPCB/NABL accredited laboratory and maintain records of the same and it should be made available at the time of inspection.	Currently we are conducting air sampling at least once in a month for the general core parameters(PM10, PM2.5, SOx, NOx) through TNPCB/NABL accredited laboratory and maintain records of the same and it is being made available at the time of inspection.
16	Regular monitoring on the air quality, water quality and noise on the selected locations in and around the project site as mentioned in the EMP report for creating base line data shall be continued and records shall be maintained.	We are engaging a third party agency for regular monitoring on the air quality, water quality and noise on the selected locations in and around the Plant site. It will be continued and records will be maintained.
17	A separate environmental and safety management cell with qualified staff shall be set up before establishment of the facility and shall be retained throughout the lifetime of the industry for implementation of the stipulated environmental safeguards.	The existing Environment Cell will be retained throughout the lifetime of the industry for implementation of the stipulated environmental safeguards.
18	The Green belt area already developed within the project area shall be properly maintained.	. We will continue to develop the Green belt area within the plant & will be properly maintained
19	The Green belt of 5-10 m width shall be developed in more than 33% of the total project area mainly along the plant periphery in downward wind direction and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the state Forest	For developing our future green belt ,the selection of plant species will be as per the CPCB guidelines in consultation with the state Forest department

	department.	
20	The industry shall promote tree plantation to neutralize their carbon foot print. The industry shall engage regularly in afforestation programme.	Company is planned to promote tree plantation to neutralize the carbon foot print. We will engage regularly in afforestation programme.
21	The proponent shall ensure effective risk management strategy regarding confined space management to avoid risk while handling raw materials products in the process area and storage.	Our company is ensuring effective risk management strategy regarding confined space management to avoid risk while handling raw materials products in the process area and storage.. We continue to do the same in future as well.
22	The energy sources for lighting purposes shall preferably by LED based.	. Currently we are in the process of replacing the lighting purpose with LED lamps. We will continue to do the same till all gets replaced.
23	The industry shall conduct air sampling at least twice in a week(104 times in a year), as stipulated under EP act 1986.	We are already conducting the air sampling survey & will continue to do the same.
24	Risk cum disaster management plan should be in paced in the industry premises at all time.	. The Risk cum disaster management plan is available and it is reviewed once in 5 years or whenever there is an expansion taking place
25	Water conservation scheme including rain water harvesting measures to augment ground water resources shall be implemented so as to collect and reuse the entire rainwater harvested as a supplement to fresh water.	.We will carry out the Water conservation scheme including rain water harvesting measures to augment ground water resources in future so as to collect and reuse the entire rainwater harvested as a supplement to fresh water.
26	The natural drainage pattern in the project area shall be maintained and storm water drain along the boundary and appropriate places shall be provided considering the catchment area and maximum intensity of rainfall to collect runoff water/rain water for proper disposal to avoid flooding around the premises.	It will be ensured that the natural drainage pattern in the plant area will be maintained and storm water drain along the boundary and appropriate places will be provided considering the catchment area and maximum intensity of rainfall to collect runoff water/rain water for proper disposal to avoid flooding around the premises.
27	The environmental clearances is issued without prejudice to any order that may be passed by the Hon'ble NGT/Hon'ble High court of Madras.	Noted

28	All the assurances given in EIA and EMP shall be adhered strictly.	Noted. It will be adhered strictly.
29	Detail study shall be carried out by engaging accredited agencies/ reputed institutions for Risk management and detailed Disaster management plan prepared for compliance.	We will carry out a detailed study by engaging accredited agencies/ reputed institutions for Risk management and detailed Disaster management plan prepared for compliance , whenever the expansion project is being executed.
30	Sufficient funds should be provided for Disaster management.	Noted
31	The Project proponent shall provide disinfection by UV system for the sewage treatment plant for treating the sewage before applying on land for gardening.	Whenever the new STP system is established, it will have the UV system for disinfection purpose.
32	The project proponent shall provide sufficient ventilation (air circulation) in the hazardous waste storage yard where the hazardous waste like spent carbon, chemical sludge, used or spent oil are being kept.	We have already provided sufficient ventilation (air circulation) in the hazardous waste storage yard where the hazardous waste like spent carbon, chemical sludge, used or spent oil are being kept. This will be sustained in future as well.
33	The project proponent shall carryout safety audit in different operating zone of the plant at least once in a year and same shall be considered as base for reviewing the unsafe condition during the plant safety meeting.	We are carrying out safety audit in different operating zone of the plant at least once in a year and same being considered as base for reviewing the unsafe condition during the plant safety meeting. This will be extended to the Plant expansion as well.
34	The project proponent shall prepare a code of practice for safe operation for educating the safety standards to the work force deployed in the plant through appropriate training by the concerned experts.	. We are already prepared a code of practice for safe operation for educating the safety standards to the work force deployed in the plant through appropriate training by the concerned experts. This will be continued in future as well.
35	As the plant operation involves the sensitive processing, the medical officer and the supporting staff involved in the health centre activities shall be trained in occupational health surveillance(OHS) aspects through the outsourced training from the experts available in the field of OHS for ensuring the health standard of	. The medical officer and the supporting staff involved in the health centre activities are trained in occupational health surveillance(OHS) aspects through the outsourced training from the experts available in the field of OHS for ensuring the health standard of persons employed.

	persons employed.	
36	The activity of the industry should not impact on agricultural, irrigation system and mangroves surrounding the area.	Noted.
37	The project proponent strictly follow the conditions as per O.M No. F. No. 22-23/2018-IA.II(Pt) MoEF & CC dated: 31.10.2019	Noted & will be adhered.
38	The proponent should continuously monitor the VOC and ensure that VOC levels are within permissible limits	We are continuously monitoring the VOC in the plant area and ensure that VOC levels are within permissible limits. This will be continued in future as well.
39	The EMP cost of Rs.4100.3 lakhs and operation and maintenance cost Rs. 842 lakhs shall be deposited in a nationalized bank by opening separate account and the head wise expenses statement shall be submitted to TNPCCB with a copy to SEIAA annually.	EMP cost incurred statement will be submitted to TNPCCB with a copy to SEIAA on annual basis once the project comes to operation.
40	There should be no threat to Bio diversity due to the operation of the industry.	Noted.
41	The project proponent has to provide rain water harvesting collection tank to the capacity of 37675.75 cu.m in order to recover and reuse the rain water during normal rains	Amendment sorted with SEIAA vide letter dated 20.08.2020
42	<p>The project proponent has to spent the CER fund of Rs.3.75 Crores(0.75% of the project cost) should be spent through competent Authority for the following activities before obtaining CTO from TNPCCB,</p> <p>a) De-silting and beautification of water bodies in an around the project site of Semmankuppam, Nochikadu, Sonanchavadi villages for an amount of Rs.0.75 crores.</p> <p>b) Women empowerment for skills development spent an amount of Rs.0.75 crores.</p>	It will be done once the project comes for operational.

	<p>c) Infrastructure for Panchayat Union Middle school, Semmankuppam village and Panchayat union Primary school, Chitrapettai village for an amount of Rs.1.5 crores.</p> <p>d) Strengthening the primary health centres at Semmankuppam, Nochikadu and Chitrapettai spent an amount of Rs.0.75 Crores.</p>	
43	The operation of the activity should not impact on the soil, micro flora & fauna present in and around the project site.	Noted
44	The project proponent shall carry out risk assessment process for all the operations involved in the plant and a suitable risk management plan showing the contours of sensitive zones should be prepared.	We will carry out risk assessment process for all the operations involved in the plant and a suitable risk management plan showing the contours of sensitive zones will be prepared once the expanded operation of the plant is established
45	The Project proponent shall take up better housekeeping measures including scraps disposal and up keeping the machineries, pipes etc.	Company is currently sustained with "Best house keeping practices " at present & continue to do the same even after the expansion.

GENERAL CONDITIONS:-

S.No.	Stipulated conditions	Compliance status
1.	This Environmental clearance shall not be cited to relax any other rules applicable to this project.	Noted
2.	The Project proponent should advertise at least 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 the environmental clearance informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with TNPCB.	<p>We have already released advertisement of the project in two local newspapers.</p> <p>Copy of the same is attached herewith.</p>

S.No.	Stipulated conditions	Compliance status
3.	A copy of the environmental clearance shall be sent by the project proponent to concerned local body and local NGO, if any from whom suggestions/ representatives, if any were received while processing the proposal.	We have already given a copy of EC to Local body.
4.	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, Nox (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	We are already monitoring the pollution parameters in air.
5.	The Environmental clearance shall also be put on the website of the company.	We have already uploaded the EC copy in the Website.
6.	No expansion or modernization in the project shall be carried out which prior approval of the SEIAA-TN. In case of any deviations or alterations in the project proposal from those submitted to this Authority for clearance, a fresh reference shall be made to the SEIAA-TN to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted
7.	All the environmental protection measures and safeguards as recommended in the EIA report shall be complied with.	All the environmental protection measures and safeguards as recommended in the EIA report will be complied with once the project comes to operation.
8.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned state pollution control board as prescribed under the Environmental (Protection) Rules 1986 as amended subsequently and put on the website of the company.	We are submitting the environmental statement for each financial year in Form-V to the concerned state pollution control board as prescribed under the Environmental (Protection) Rules 1986 as amended subsequently and put on the website of the company. The same practice will be continued in future as well.

S.No.	Stipulated conditions	Compliance status
9.	The implementation of the project vis-à-vis environmental action plans shall be monitored by the regional office of MoEF&CC at Chennai, TNPCB and CPCB. A six monthly compliance status report shall be submitted to monitoring agencies regularly.	Noted. It is assured that the implementation of the project vis-à-vis environmental action plans will be monitored by the regional office of MoEF&CC at Chennai, TNPCB and CPCB. A six monthly compliance status report will also be submitted to monitoring agencies regularly
10.	Data on ambient air, stack and fugitive emissions shall be regularly submitted online to the regional office of MoEF & CC, GOI at Chennai, TNPCB and Central pollution control board as well as hard copy once in six months and display data on RSPM, SO ₂ and NO _x outside the premises at the appropriate place for the general public.	Data on ambient air, stack and fugitive emissions is being regularly submitted online to the regional office of MoEF & CC, GOI at Chennai, TNPCB and Central pollution control board as well as hard copy once in six months and display data on RSPM, SO ₂ and NO _x outside the premises at the entrance gate for the general public
11.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories act.	Occupational health surveillance of the workers is being done on a regular basis and records maintained as per the Factories act. This will be continued in future as well.
12	Proper housekeeping and cleanliness must be maintained within and outside the plant.	Company is currently sustained with "Best house keeping practices " at present & continue to do the same even after the expansion.
13	Occupational health surveillance programme shall be undertaken as regular exercise for all the employees, especially for those engaged in handling hazardous substances. The first aid facilities in the occupational health centre shall be strengthened and the medical records of each employee should be maintained separately.	Occupational health surveillance programme is being undertaken as regular exercise for all the employees, especially for those engaged in handling hazardous substances. The first aid facilities in the occupational health centre is already strengthened and the medical records of each employee should be maintained separately.
14	The overall noise levels in and around the plant area shall be kept well within the standards prescribed for by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA rules, 1989 viz 75 dBA (day time) and 70 dBA(night time)	The overall noise levels in and around the plant area is kept well within the standards prescribed for by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels are conforming to the standards prescribed under EPA rules, 1989 viz 75 dBA (day time) and 70 dBA(night time)

S.No.	Stipulated conditions	Compliance status
15	A Separate Environmental Management cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and monitoring functions shall be set up under the control of a Senior Executive.	A Separate Environmental Management cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and monitoring functions is already available under the Lab Manager.
16	The requisite amount earmarked towards capital cost and recurring cost/annum for implementing pollution control measures shall be used judiciously to implement the Environmental management plan as furnished in the EIA report. The funds so provided shall not be diverted for any other purposes.	Noted
17	The project proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional office of the MoEF & CC, GOI at Chennai, the respective zonal office of CPCB and the SPCB. The criteria pollutant levels namely; RSPM, SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sector parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	We are already uploading the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and getting updated the same periodically. It is also simultaneously be sent to the Regional office of the MoEF & CC, GOI at Chennai, the respective zonal office of CPCB and the SPCB. The criteria pollutant levels namely; RSPM, SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sector parameters, indicated for the projects are being monitored and displayed at a convenient location near the main gate of the company in the public domain.
18	The Environmental statement for each financial year ending 31st march in Form V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the Environmental(Protection) Rules, 1986 as amended subsequently shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective regional offices of the MoEF & CC by e-mail.	The Environmental statement for each financial year ending 31st march in Form V as is mandated are being submitted by us to the concerned state pollution control board as prescribed under the Environmental(Protection) Rules, 1986 as amended subsequently and also be put on the website of the company along with the status of compliance of environmental conditions and also being sent to the respective regional offices of the MoEF & CC by e-mail.
19	Environmental clearance is being issued without prejudice to the action initiated	Noted

S.No.	Stipulated conditions	Compliance status
	under Environmental(Protection) act, 1986 or any court case pending or any other order shall prevail.	
20	The SEIAA, TN may alter/modify the above conditions or stipulate any further condition in the interest of environmental protection.	Noted
21	The SEIAA/SEAC or any competent authority may suitable add any further condition(s) on receiving report from the project authority. The above condition shall be monitored by the regional office of MoEF & CC located at Chennai.	Noted
22	The SEIAA, TN may revoke or suspend the Environmental clearances, if implementation of any of the above conditions is not satisfactory.	Noted
23	The SEIAA, TN may cancel the environmental clearance granted to this project under the provisions of EIA notification, 2006 if at any stage of the validity of this environmental clearance, if its is found or if it comes to the knowledge of this SEIAA, TN that the project proponent had deliberately concealed and/or submitted d false or misleading information or inadequate data for obtaining the environmental clearance.	Noted
24	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environmental (Protection) Act, 1986	Noted
25	The SEIAA-TN reserves the right to stipulate additional conditions if found necessary, The industry in a time bound manner shall implement these conditions.	Noted
26	The above conditions will be enforced inter-alia, under the provisions of the water (Prevention & Control of pollution) Act, 1974, the Air(Prevention & Control of Pollution) Act 1981, the environmental	Noted

S.No.	Stipulated conditions	Compliance status
	(Protection)Act, 1986, the public liability Insurance Act,1991, along with their amendments, draft minor mineral conservation & Development rules, 2010 framed under MMDR Act 1957, National commission for protection of child right rules, 2006 and rules made there under and aslo any other orders passed by the Hon'ble Supreme Court of India/Hon'ble high court of Madras and any other courts of Law relating to the subject matter.	
27	Any appeal against this environmental clearance shall lie with the Hon' ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted



**Chemplast Cuddalore vinyls Limited, Cuddalore
Consolidated Environmental Monitoring Report**

Parameters	MoEF&CC /CPCB/ Standards	Ground Level Concentration of Ambient Air Quality report – Apr'23 to Sep'23						
		Locations						
		Near Admin office	Near STP plant	Near fire water tank	Near weigh bridge	Near Boiler Area	Near Helipad	Near VCM storage
Particulate Matter (PM ₁₀), µg/m ³	100	54.14	56.74	55.2	64.38	54.14	52.6	55.16
Particulate Matter (PM _{2.5}), µg/m ³	60	21.212	22.24	21.76	28.26	21.212	19.08	23.18
Sulphur Dioxide (SO ₂), µg/m ³	80	14.26	14.12	14.4	15.82	14.26	17.42	16.3
Nitrogen Dioxide (NO ₂), µg/m ³	80	23.6	24.76	23.22	24.64	23.6	14.22	24.06
Ozone (O ₃), µg/m ³	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Lead (Pb), µg/m ³	1.0	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ
Carbon Monoxide (CO), mg/m ³	2.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ammonia (NH ₃), µg/m ³	400	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene (C ₆ H ₆), µg/m ³	5	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ
Benzo (a) Pyrene (BaP), ng/m ³	1	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ
Arsenic (As), ng/m ³	6	BDL	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ
Nickel (Ni), ng/m ³	20	BDL	BLQ	BLQ	BLQ	BLQ	BLQ	BLQ
Hydrocarbon mg/m ³	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL

BDL - Below Detectable Limit; BLQ- Below Limit of quantification ; LOQ-Limit of Quantification

Result obtained from third party MoEF &CC /NABL approved laboratory .



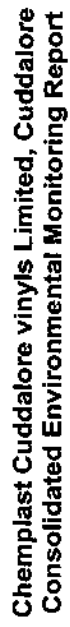
Chemplast Cuddalore vinyls Limited, Cuddalore
Consolidated Environmental Monitoring Report

Consolidated Boiler utility section Stack Monitoring report-From Apr"2023 to Sep" 2023				
Boiler tack	Parameters			
	SPM mg/Nm3	SO2 mg/Nm3	NOX mg/Nm3	
Apr-2023	31.4	155.0	97.0	
May-'2023	17.0	92.6	142	
Jun-'2023	23.8	95.8	168	
Jul-"2023	17.90	98.30	180	
Aug-2023	26.80	116	142	
Sep-"2023	23.8	95.50	165	
Report of NABL/MOEF&CC approved laboratory & Online report				



Chemplast Cuddalore vinyls Limited, Cuddalore
Consolidated Environmental Monitoring Report

Consolidated average Emergency EDG Stack Monitoring report-Period Apr"2023 to Sep" 2023				
DG Stack	Parameters			
	SPM mg/Nm3	SO2 mg/Nm3	NOX mg/m3	
EDG1 2000 KVA	31.4	35.9	279	
EDGII 2000 KVA	31.7	42	246	
EDGIII 2000KVA	37.1	36.1	229	
EDGIV 1010KVA	28	35.9	239	
Report of NABL/MOEF&CC approved laboratory analysis report.				



Consolidated Average Process Stack /Fugitive Emission Monitoring report- Apr''2023 to Sep'' 2023								
Location	PVC Drier	Dedusting (A)	Dedusting (B)	Dedusting (C)	Silo (A)	Silo (B)	Silo (C)	Coal Transfer Points -Near Bunker
Unit	mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
SPM	15.6	15.5	17.8	17.48	14.56	15.56	15.26	19.28 16.88



Chemplast Cuddalore vinyls Limited, Cuddalore
Consolidated Environmental Monitoring Report

VOC-SVOC Monitoring in waste water sample from Apr"2023 to Sep" 2023			
Location/Area	Unit	as Vinyl Chloride	
Centrifuge water	µg/Lit	BLQ (LOQ 10.0)	
Waste Water Stripper Out let	µg/lit	BLQ (LOQ 20.0)	
VOC-SVOC Monitoring Process stack Apr"2023 to Sep" 2023			
PVC Drier Stack	mg/m3	BDL (LOQ 0.1)	
Vent Gas Abortion	mg/m3	BLQ (LOQ 0.1)	
VOC-SVOC Monitoring Ambient Air Apr"2023 to Sep" 2023			
Behind VCM Storage tank	µg/m3	BLQ (LOQ : 0.1)	
Near Security man gate	µg/m3	BLQ (LOQ: 0.1)	

Result obtained from third party MoEF &CC /NABL approved laboratory : BDL - Below Detectable Limit; BLQ- Below Limit of quantification ; LOQ-Limit of Quantification



Chemplast Cuddalore vinyls Limited, Cuddalore
Consolidated Environmental Monitoring Report

VOC-SVOC Fugitive Source Apr''2023 to Sep'' 2023			
VCM tank Compressor area		µg/m3	BLQ (LOQ: 0.1)
PVC Bagging area		µg/m3	BLQ (LOQ: 0.1)
In between Slurry Blow down /Stripper feed vessel area.		µg/m3	BLQ (LOQ: 0.1)
In-between reactor area		µg/m3	BLQ (LOQ: 0.1)
In-between VCM recovery		µg/m3	BLQ (LOQ: 0.1)
Result obtained from third party MoEF &CC /NABL approved laboratory : BDL - Below Detectable Limit; BLQ- Below Limit of quantification ; LOQ-Limit of Quantification			