



**CENTRAL POLLUTION CONTROL BOARD  
ZONAL OFFICE (SOUTH)  
BENGALURU**

**Compliance Verification Report of M/s IMAGE, CBMWTF, Palakkad, Kerala**

**Background**

CPCB has issued direction under Section 5 of EP Act, 1986 to the unit M/s IMAGE, CBMWTF, Palakkad, Kerala vide letter no. B-31011(BMW)/30/93/2015/HWMD dated February 03, 2015 for non-compliance based on the inspection carried out during September 24 - 26, 2014 and directed the unit to take necessary measures for completing the corrective actions against the non-compliance within three months period.

The unit has submitted the compliance report vide letter dt. 02.07.2015 to CPCB. Accordingly, CPCB, HO Delhi has requested ZO(S), Bangalore to verify the point wise compliance status and submit the report for further necessary action.

The inspection of the said unit is carried out during October 12 - 13, 2015 by the following officials of Zonal Office (South), Bangalore.

- Mr. R. Rajkumar, Scientist C
- Dr. V. Deepesh, SSA
- Mr. S. Seenivel Raj, JLA

During the inspection wastewater and source emission samples were collected. The compliance status of the unit and other observations is as follows:

S.No.	Directions	Compliance
a)	To provide Main waste storage room for storage of untreated BMW in the facility.	Complied.  The unit has provided waste receiving closed shed for storage of untreated waste of size 7m x 15m x 20 m.

b)	Un-segregated bio-medical waste is collected from the member HCFs and is segregated within the facility which is not permitted by the BMW Rules.	The unit has given training programme to HCFs on segregation of waste at source on monthly basis. The copy is enclosed as <b>Annexure 1</b> .
c)	To provide adequate capacity of treatment equipment (Incinerator and Autoclave).	<p>Complied.</p> <p><b>Incinerator:</b></p> <ol style="list-style-type: none"> <li>1. ENSYS INCINERATOR - 250 kg /hr.</li> <li>2. ALFA THERM INCINERATOR - 200 kg / hr.</li> <li>3. THERMAX INCINERATOR - 200 kg / hr.</li> <li>4. ALFA THERM ROTARY INCINERATOR - 500 kg / hr.</li> <li>5. ALFA THERM INCINERATOR - 300 kg/hr (newly installed and in operation).</li> </ol> <p><b>Autoclave:</b></p> <ul style="list-style-type: none"> <li>• 3 Nos. Of 900 Litre/Cycle Capacity From M/S. Natsteel Equipments Pvt Ltd, Pune which already exist and in operation.</li> <li>• 2 nos. of autoclaves of 900 litre/cycle capacity newly installed and in operation.</li> </ul>
d)	To treat and dispose the waste within 48 hrs of its generation as stipulated under Rule 6 of the BMW Rules.	<p>Complied.</p> <p>The back log of untreated waste found during last inspection is treated completely. Presently, the wastes are being treated within 48 hrs.</p> <p>The month wise statement of the back log waste treated is enclosed as <b>Annexure 2</b>.</p>

e)	To operate the incinerators in accordance with operating parameters (like Temperature in Primary and secondary Chamber etc.) stipulated under Schedule V of the BMW Rules	Complied.  At time of inspection it was observed that the incinerators are operated properly with accordance to temperature in primary and secondary chamber.
f)	The stack emission monitoring results of the three incinerators in respect of PM (i.e Ensys: 1101 mg/Nm <sup>3</sup> , Alphtherm: 846 mg/Nm <sup>3</sup> , and Thermax: 2911 mg/Nm <sup>3</sup> were found exceeding the prescribed standards as stipulated under Schedule V of the BMW Rules.	Not complied.  1. ENSYS INCINERATOR was under maintenance so monitoring was not carried out. 2. ALFA THERM INCINERATOR - 407 mg/Nm <sup>3</sup> . 3. THERMAX INCINERATOR - 464 mg/Nm <sup>3</sup> . 4. ALFA THERM ROTARY INCINERATOR - 830 mg/Nm <sup>3</sup> . 5. ALFA THERM INCINERATOR - 24.1 mg/Nm <sup>3</sup> (newly installed) All results are with 12% CO <sub>2</sub> correction factor.  New Alfa therm incinerator only meeting the prescribed standard.
g)	To stop disposal of Sharp waste (untreated needles) in the land fill provided by the facility without treatment and shredding.	Complied.  The sharp waste is autoclaved and shredded before disposal.  The unit has installed additional shredder, which is in trial run.
h)	To route the wastewater generated in autoclave area to ETP for ensuring its treatment as per BMW Rules.	Complied.  The wastewater generated from the autoclave area is properly routed through the drain to ETP.

i)	To maintain Log book/records for operational parameters of autoclave as required under BMW Rules.	Complied.  Log book/record for operational parameters of autoclave is being maintained.
j)	To upgrade the ETP for adequate capacity with proper pipe fittings. So as to meet the prescribed standards stipulated under BMW Rules.	ETP is upgraded to 450 KLD and in operation. The flexible pipelines are removed and replaced by permanent pipelines. The treated wastewater is not meeting the KSPCB stipulated norms in case of Bio-assay, BOD & O&G. So it is <b>not complied</b> .  The treated wastewater is being recycled to scrubber.
k)	To make Existing DG Set working and same needs restoration to ensure power supply in case of power failure.	Complied.  380 KVA DG Set installed and in operation.
l)	To improve the housekeeping of the facility.	Housekeeping at waste receiving & storage area, incinerator area, Autoclave area and ETP are satisfactory.  Sorting area of autoclaved/treated waste needs improvement.

**Other Observations:**

- The samples at inlet and outlet of the ETP were collected. The treated wastewater is being recycled to scrubbers. The analysis results is given below:

Parameters	Inlet	Outlet	KSPCB Standard given in consent to operate - Expansion
pH	7.9	7.3	6.5 - 8.5
TSS	104	06	20
BOD	85	51	3
COD	262	171	-
O&G	-	1.5	1
Bio-assay	-	0% survival in 100% effluent	90% survival in 100% effluent after 96 hrs

\* All values are in mg/l except pH

BOD, O&G and Bio assay are exceeding the tolerance limits stipulated by KSPCB.

- The unit has five incinerators and monitoring of four incinerators were carried out except ENSYS INCINERATOR, which is under maintenance at time of monitoring. The analysis result is shown below:

Incinerator	PM without CO <sub>2</sub> correction factor	PM with CO <sub>2</sub> correction factor	HCl	Combustion Efficiency
Ensys (250 Kg/hr)	Not carried out since it is in maintenance			
Aplhatherm (200 Kg/hr)	115	407	BDL	95.27%
Thermax (200 Kg/hr)	128	464	BDL	99.43%
Aplhatherm(Rotary) 500 Kg/hr	228	830	BDL	99.82%
Aplhatherm (300 Kg/hr) New	9	24.1	BDL	99.82%
Standard	-	150	50	99%

\* All values are in mg/Nm<sup>3</sup>

PM values after CO<sub>2</sub> correction factor are exceeding the prescribed standard limit except Aplhatherm (new incinerator) 300 Kg/hr. The combustion efficiency of old Aplhatherm (200 Kg/hr) incinerator is 95.27%, which is less than the operating standard.

- Spore test was carried out randomly in three autoclaves (twice) with control. The autoclaved spore test showed no growth compared to the control (unexposed strip).
- The unit is having huge quantity of Ampoule bottles stored for which a grinder/crusher is installed and trial run is in operation for crushing those bottles. The crushed powder will be mixed along with ash and disposed to TSDF.
- The unit has installed needle cutter, which is also in trial run.
- Housekeeping of the sorting area of autoclaved/treated waste is not satisfactory.

**Recommendation:**

Modified direction under section 5 of EP Act, 1986 may be issued to the unit to comply with the following:

- To take necessary steps to control the emission from the incinerators within the stipulated norms.
- To take necessary steps to meet the stipulated tolerance limit prescribed by KSPCB in case of BOD, O&G and Bio-assay.
- To maintain proper housekeeping of sorting area of autoclaved/treated waste.

(R. Rajkumar)  
Scientist 'C'

(S. Suresh)  
Zonal Officer

## Photographs



Incinerator Area



New Alpha Therm Incinerator



Autoclaves



ETP





Sorting of Autoclaved Waste



Bottle Sorting



Ampoule Bottle Grinding



Needle Cutter/Separator



Ampoule Bottles Stored



DG Set