Item No. 02 to 05 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 710/2017

Shailesh Singh Applicant

Versus

Sheela Hospital & Trauma Centre,
Shahjahanpur & Ors. Respondent(s)

WITH

Original Application No. 711/2017

Shailesh Singh Applicant

Versus

Kailash Hospital and Heart Institute & Ors. Respondent(s)

WITH

Original Application No. 712/2017

Shailesh Singh Applicant

Versus

Shri Ganga Charan Hospital (P) Ltd.,
Bareilly & Ors. Respondent(s)

WITH

Original Application No. 713/2017

Shailesh Singh Applicant

Versus

Katiyar Nursing Home, Hardoi & Ors. Respondent(s)

Date of hearing: 18.01.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. Raj Kumar, Advocate for CPCB

ORDER

1. The issue raised in these applications is non-compliance of the provisions of Bio-medical Waste Management Rules, 2016 (BMW Rules)

by the States and UTs. The same have been framed under the Environment (Protection) Act, 1986. They apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle bio medical waste in any form including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, blood banks, Ayush hospitals, clinical establishments, research of educational institutions, health camps, medical or surgical camps, vaccination camps, blood donation camps, first aid rooms of schools, forensic laboratories and research labs with specified exceptions. The Rules lay down the duties of occupier, operator of a common bio-medical waste treatment and disposal facility, duties of the authorities, standards of treatment and disposal, segregation, packaging, transportation and storage, prescribed authority for implementation of the Rules, procedure for authorization to the occupiers and operators handling the BMW, constitution of an Advisory Committee with representatives of the concerned Departments of the State, separate Advisory Committee for the Ministry of Defence, provisions for monitoring of implementation of the rules in health care facilities, furnishing of annual reports by every occupier and operator, compiling, review and analysis of the information by the CPCB, maintenance of records by every authorized person, reporting of accidents, provision for suitable site for the treatment and disposal facilities, liabilities of the occupier and operator of the facility.

2. Grievance in these matters is that the rules are not being enforced by the Hospitals named as respondents in the Applications in the State of UP. However, in the course of proceedings, this Tribunal extended the scope of consideration to the entire Country, as situation in most of the States/UTs requires intervention for compliance of Rules. Vide order

dated 16.1.2019 in OA 606/2018, this Tribunal required Chief Secretaries of all States/UTs to monitor compliance of these Rules with other significant environmental issues in the interest of public health and environment and by later order, the Chief Secretaries were directed to set up monitoring cells directly under them. Directions were also issued in the present matter for constitution of District Environmental Committees at District level under the District Magistrates for such compliances. There are acknowledged gaps in terms of the giving of authorizations as well as in the segregation, treatment and disposal of waste.

3. The matter was reviewed vide order dated 22.01.2020 with reference to earlier proceedings and the report of the CPCB. It was noted in an earlier order that unscientific disposal of bio-medical waste had potential of serious diseases such as Gastrointestinal infection, Respiratory infection, Eye infection, Genital infection, Skin infection, Anthrax, Meningitis, AIDS, Haemorrhagic fevers, Septicaemia, Viral Hepatitis type A, Viral Hepatitis type B and C, etc. Such unscientific disposal also causes environmental pollution leading to unpleasant smell, growth and multiplication of vectors like insects, rodents and worms and may lead to the transmission of diseases like typhoid, cholera, hepatitis and AIDS through injuries from syringes and needles contaminated with various communicable diseases. The Tribunal referred to the news article published in "Dainik Jagran" dated 06.10.2017 stating as follows:-

> *"That the Gautam Buddha Nagar is the only district where a survey of 66 hospitals was conducted in October 2017 where 23 were found doing the management of Biomedical waste. 18 hospitals of which have been issued notices by the Regional Officer, UPPCB, GuatamBudh Nagar."*

4. Reference was also made to the report of the CAG placed on its website in May, 2017 as follows:

> *"Inadequate facility of bio-medical waste (BMW) treatment. As per the report paragraph 2.1.9.5 there were 8,366 Health Care Establishments (HCEs) out of which 3,362 HCEs were operating without authorization. Total BMW generated in the State was 37,498 kg/day out of which only 35,816 kg/day was treated and disposed of. BMW of 1,682 kg/day was being disposed of untreated due to inadequate treatment facility. But UPPCB failed to monitor unauthorised operation and untreated disposal of BMW and did not take any action against the defaulters."*

5. The Tribunal also referred to earlier directions and the report of the CPCB about the status of compliance dated 15.11.2019 based on information received from different States/UTs. The information related to the monitoring of the Health Care Facilities (HCFs), grant of authorizations, adequacy of common treatment facilities, constitution of State/District Advisory Committees, Barcodes system in every HCF and CBWTFs, training and capacity building of the Departments and workers, installation of online systems for monitoring, giving of reports, compliance of standards, etc. The Tribunal held that there was need for consolidated status report with statistics and recommendations. As already noted, vide order dated 15.7.2019, direction was issued for preparation of District Environment Plans as per Articles 243G, 243W and 243ZD read with Schedules 11 and 12 of the Constitution. The District Magistrate as head of the District Planning Committee was to monitor compliance of environmental norms, including Bio Medical Waste Management Rules once every month and send a report to the Chief Secretary. Relevant part of the order is extracted below:

> *"We find it necessary to add that in view of Constitutional provisions under Articles 243 G, 243 W, 243 ZD read with Schedules 11 and 12 and Rule 15 of the Solid Waste Management Rules, 2016, it is necessary to have a District Environment Plan to be operated by a District Committee (as a part of District Planning Committee under Article 243 ZD) with representatives from Panchayats, Local Bodies, Regional Officers, State PCB and a suitable officer representing the*

administration, which may in turn be chaired and monitored by the District Magistrate. Such District Environment Plans and Constitution of District Committee may be placed on the website of Districts concerned. The monthly report of monitoring by the District Magistrate may be furnished to the Chief Secretary and may be placed on the website of the District and kept on such websites for a period of one year. This may be made operative from 1.08.2019."

6. The matter was last considered on 20.07.2020 in the light of the consolidated report filed by the CPCB on 18.07.2020. It was observed:-

"1to4…..xxx…….xxx…….xxx

5. In above background, the CPCB has filed a consolidated report on 18.07.2020 with reference to the action points in terms of earlier orders including preparation of action plans, monitoring compliance and recovering compensation for violations. The CPCB received revised reports from 33 States/UTs and assessed the compliance status. The overall bio-medical waste management scenario has been summarized as follows:

*"(i) An inventory of about **2,70,416 nos. of Healthcare Facilities** (HCFs) with 97,382 bedded and 1,73,831 non-bedded HCFs was reported. Out of these 2,70,416 nos of HCFs, only **1,10,356 HFCs are authorized** till the year 2019.*

*(ii) Total generation of bio-medical waste is about **614 tonnes per day out of which about 534 tonnes per day is treated** through CBWTFs as well as captive treatment facilitates.*

(iii) About 57 tonnes per day of biomedical waste is treated by captive treatment facilities and about 472 tonnes per day of biomedical waste is treatment by CBWTF.

(iv) Summary of bio-medical waste management scenario in the country is given below:

- *No. of Healthcare Facilities (HCFs) :2,70,416*
- *No. of bedded HCFs :97,382*
- *No. of non-bedded HCFs :1,73,831*
- *No. of beds :22,06,362*
- *No. of CBWTFs :200*+28***
- *No. of HCFs granted authorization :1,10,356*
- *No. of HCFs having Captive Treatment Facilities :12,326*
- *No. of Captive Incinerators Operated by HCFs :120*
- *Quantity of bio-medical waste generated*

in Tonnes/day :614

- *Quantity of bio-medical waste treated in Tonnes/day :534*
- *No. of HCFs violated BMW Rules :27,301*
- *No. of show-cause notices/Directions issued to defaulter HCFs :16,956*

Note: (i)-CBWTFs in operation (ii) **-CBWTFs under installation*

State specific data pertaining, generation, treatment and disposal of biomedical waste including details of waste management infrastructure is summarized into a data ***Table given at Annexure V."***

6. In Para 4 of the report, it is stated that State of Rajasthan and Nagaland have not yet filed their revised action plans. In para 5.1 under the heading 'Inventory of all healthcare facilities (HCFs) and biomedical waste general', it is stated that 25 States/UTs have completed their inventories and ***10 States/UTs namely; Assam, Kerala, Mizoram, West Bengal, Jharkhand, Chhattisgarh, Goa, Gujarat, Meghalaya and Uttarakhand have yet to do it****. In para 5.2 under the heading 'Authorization to all Healthcare Facilities including non-bedded HCFs', it is stated that as per the Annual report submitted by SPCBs/PCCs,* ***out of 2,70,416 healthcare facilities, only 1,11,122 no. of health care facilities have applied for authorization and 1,10,356 HCFs have obtained authorized*** *under BMWM Rules, 2016. Thus, apart from those who have applied and those who have obtained authorization,* ***there are about 50,000 HCFs who have neither applied nor taken the authorization****. The said States may expedite the process and complete the same positively by 31.12.2020 and file a compliance report with the CPCB. In para 5.3 under the heading 'Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities (CBWTFs) to cover entire State or all HCFs', it is stated that* ***there is no CBWTF in seven States and UTs namely; Andaman & Nicobar, Arunachal Pradesh, Goa, Lakshadweep, Mizoram, Nagaland and Sikkim*** *to cater service of treatment and disposal of biomedical waste and these States are managing disposal of biomedical waste with existing captive treatment facilities installed by HCFs or by deep burial of waste. These States have reported that they are under the process of setting up of new CBWTFs. In para 5.5 under the heading 'Implementation status of Barcode system', it is stated that only 4 States have implemented the barcode system. The remaining have either partially implemented or not established such system. In para 5.6 under the heading 'Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals, etc', it is stated that Andaman & Nicobar, Assam, Jammu & Kashmir, Manipur, Andhra Pradesh, Chhattisgarh, Karnataka, Meghalaya, Nagaland, Rajasthan and Tripura have not provided any information regarding monitoring of veterinary hospitals, animal houses etc. CPCB has conducted*

random inspections of veterinary hospitals/animal houses, whereby following common discrepancies were observed:

- ***Majority of veterinary Hospitals have not obtained authorization** obtained from prescribed authority, that is the SPCBs/PCCs;*
- *The **Hospitals have not registered with the CBWTFs** for treatment and disposal of BMW generated in their veterinary hospitals;*
- ***No segregation of waste at source is practiced through separate color-coded collection bins**;*
- ***No records are maintained about waste generation, collection, transportation, treatment and disposal, etc.***

CPCB has communicated the above short-comings to Departments of Animal Husbandry of all the concerned States.

*7. In para 5.7 under the heading 'Monitoring infrastructure of SPCBs/PCCs', it is stated that various States/UTs have not given any information regarding their monitoring infrastructure. In para 5.9 under the heading 'Installation of OCEMS by CBWTFs and transmission of data to servers of SPCBs/ CPCB', it is stated that 150 out of 200 CBWTFs have connected with Central server of CPCB for transmission of online continuous Emission Monitoring Systems. CBWTFs in States/UTs namely Gujarat, Tamil Nadu, MP and West Bengal have installed CBWTFs in all facilities, however **some of the CBWTFs are yet to connect with CPCB server. State-wise list of connectivity of with CPCB server is given at Annexure-V.***

*8. **The above gaps need to be bridged having regard to the significance of scientific disposal of bio-medical waste. Individual averments with regard to the concerned hospitals mentioned in O.A Nos. 710/2017, 711/2017, 712/2017 and 713/2017 may also be verified and appropriate action taken in accordance with law and a specific report given by the concerned State PCBs to the CPCB. CPCB may include such information in its next report.***

9. We also reiterate earlier direction for constitution of District Planning Committees to monitor District Environment plans covering important environmental issues. Monitoring at District level may go long way in protection of environment and public health and compliance of Constitutional mandate. It will be appreciable that the State PCBs/PCCs collect information on the subject from the District Magistrates and furnish reports in this regard to the CPCB. We also find it necessary to require PCBs/PCCs to ascertain status of compliance of norms by the CBWTFs, specially that no biomedical waste is disposed by CBWTFs at any place in an illegal manner and report the same to the CPCB.

*10. **Let all the States/UTs which are lacking in compliance take further steps and give their reports to the CPCB online. A further consolidated report be compiled by the CPCB based on information collected from all the State PCBs/PCCs as on***

30.11.2020. The report may be filed by 31.12.2020 *by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF."*

7. Accordingly, the CPCB has filed its report dated **13.01.2021** giving the status of the compliance of the Rules as follows:-

"3. Bio-medical Waste Management Scenario:

As per the annual information, submitted by 34 SPCBs/PCCs, there are 3,19,907 no. of Health Care Facilities (HCFs) out of which 1,06,643 no. of HCFs are bedded and 2,15,336 no. of HCFs are non-bedded facilities such as clinics, blood banks, etc.

Out of 3.19 lakh healthcare facilities 1.55 lakh facilities granted authorization under the BMW Rules. It is observed that number of authorizations have increased by 40% compared to earlier inventory. Similarly, the number of healthcare facilities brought under regulation have been increased 20% from 2,70,416 to 3,19,907 facilities.

Out of 3,19,907 no. of HCFs, about 75 % of them utilising services of CBWTFs, while 18,552 No. of HCFs, that is 5.8% of HFs are having captive bio-medical waste treatment and disposal facilities. There is no information on about 20% of HCFs since those facilities are yet to be brought under authorization process.

There are 202 no. of CBWTFs in the country and apart from it, 36 facilities are under construction. As per inventory, total generation of bio-medical waste is about 615 tonnes per day out of which about 541 tonnes per day of bio-medical waste are treated and disposed through authorized facilities. The quantity disposed through CBWTFs is about 486 tonnes per day, while 55 tonnes per day is disposed by captive facilities.

A summary of bio-medical waste management scenario in the Country is given below:

>	*No. of HCFs*	:	*3,19,907*
>	*No. of bedded HCFs*	:	*1,06,643*
>	*No. of non-bedded HCFs*	:	*2,15,336*
>	*No. of beds*	:	*24,86,823*
>	*No. of CBWTFs*	:	*202* + 36***
>	*No. of HCFs granted authorization*	:	*1,55,103*
>	*No. of HCFs having Captive Treatment Facilities*	:	*18,552*
>	*No. of Captive Incinerators Operated by HCFs*	:	*130*
>	*Quantity of bio-medical waste generated in*	:	*615*
>	*Quantity of bio-medical waste treated in*	:	*541*
>	*No. of HCFs violated BMW Rules*	:	*28,816*

>	*No. of Show-cause notices/Directions issued to defaulter HCFs : 17,196*

*Note: * - CBWTFs in operation** - CBWTFs under installation*

Note: Above data is subject to minor corrections since, anomalies observed in data received from some of the States has been communicated to respective SPCBs/PCCs vide letter dated 15.12.2020 for necessary clarification and rectification.

The above data with respect to number of healthcare facilities and corresponding authorizations pertains to the year 2019. Compliance on authorizations has been further increased as per status report submitted by 29 SPCBs/PCCs in this matter. The same will reflect in annual compliance report for the year 2020, which would be available after submission of reports by SPCBs/PCCs by July, 2021.

4. Status of Compliance to BMWM Rules, 2016

CPCB identified 12 Key Performance Indicators (KPIs) to assess States with respect to effectiveness in monitoring, ensuring compliance and implementation of BMWM Rules, 2016. These indicators in different in States/UTs, have been monitored and gaps / discrepancies observed for improvement were communicated to State Pollution Control Boards and Pollution Control Committees.

CPCB has requested SPCBs/PCCs to submit information relating to the following 12 KPIs in a prescribed form:

1. *Inventory of all Healthcare Facilities and biomedical waste generation*
2. *Authorization to all Healthcare Facilities including non-bedded HCFs*
3. *Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities (CBWTFs) to cover entire State or all HCFs*
4. *Constitution of State Advisory Monitoring Committee and District Level Monitoring Committee*
5. *Implementation status of Barcode system*
6. *Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc.*
7. *Monitoring infrastructure of SPCBs/PCCs*
8. *Training and Capacity Building of officials of SPCBs/PCCs and Healthcare Facilities*
9. *Installation of OCEMS by CBMWTs as a self-monitoring tool and transmission of data with servers of SPCBs/ CPCB*
10. *Preparation of Annual Compliance Status Reports*
11. *Compliance by Common Facilities (emission/discharge standards, barcoding, proper operation, etc.)*
12. *Compliance by Healthcare Facilities (Segregation, pre-treatment, on-site storage, barcoding and other provisions etc.)*

4.1 Submission of report by SPCBs/PCCs

CPCB has followed-up with SPCBs/PCCs for submission of State specific reports on compliance along with action taken on gaps identified by CPCB. Reports have been submitted by all SPCBs/PCCs except 06 SPCBs/PCCs namely Arunachal Pradesh, Daman & Diu, Goa, Jharkhand, Karnataka and Nagaland.

4.2 Inventory of Biomedical Waste Generating Units:

Inventory of biomedical waste generating units is an essential requirement to manage biomedical waste. It will help in planning and implementation, through authorization process, thereby waste generated from facilities can be accounted for proper collection and disposal.

As per the information received from States, 23 SPCBs/PCCs have completed the inventory as on 30.11.2020. It is reported that inventory in in process in Maharashtra and Rajasthan.

It is pertinent to mention that inventory of Healthcare Facilities and grant of authorization has been completed by many States. However, data pertaining to the same is expected to be mentioned in Annual Report for the year 2020. As per current compliance status report submitted in the matter, State-wise number of Healthcare Facilities (bedded and non-bedded) along with their authorization status received from 29 SPCBs/PCCs is given below:

Table: Status of Authorization of Healthcare Facilities

S. No	Name of State/UT	Total no.	Bedded Health	Non-Bedded	Authorization Status		
		HCFs	Care Facilities (HCFs)	HCFs	HCFs granted authorization	HCFs without authorization	Authorization Completed
1	Andaman Nicobar	183	39	144	79	104	43%
2	Andhra Pradesh	10225	7078	3147	8688	1537	85%
3	Assam	1043	582	461	1043	0	100%
4	Bihar	24996	4821	20174	5629	19367	23%
5	Chandigarh	890	49	841	890	0	100%
6	Chhattisgarh	5374	2302	2887	5189	185	97%
7	Delhi	10277	1225	9052	9916	361	96%
8	Gujarat	31360	11289	20079	27920	3440	89%
9	Haryana	6193	3054	3139	6006	187	97%
10	Himachal Pradesh	8800	585	8215	3927	4873	45%

11	J & K	6606	1541	5065	604	6002	9%
12	Kerala	13869	2126	11743	6735	7134	49%
13	Lakshadweep	46	10	36	39	7	85%
14	Madhya Pradesh	8527	4100	4527	6270	2257	74%
15	Maharashtra	63642	20231	43411	24902	38740	39%
16	Manipur	712	145	567	712	0	100%
17	Meghalaya	903	181	722	650	253	72%
18	Mizoram	654	106	548	135	519	21%
19	Odisha	3624	1501	2123	3302	322	91%
20	Puducherry	387	86	301	212	175	55%
21	Punjab	9871	3814	6057	8178	1693	83%
22	Rajasthan	8583	6254	2329	7070	1513	82%
23	Sikkim	287	34	253	287	0	100%
24	Tamil Nadu	23935	7099	16836	23935	0	100%
25	Telangana	6542	3742	2800	6518	24	100%
26	Tripura	1743	158	1585	870	873	50%
27	Uttarakhand	3582	1683	1899	2851	731	80%
28	Uttar Pradesh	25411	13670	11741	21531	3880	85%
29	West Bengal	8509	3008	5501	8488	21	100%
	Total	286774	100513	186183	192576	94198	67%

The data indicates that 18 States/UTs namely Andhra Pradesh, Assam, Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Lakshadweep, Manipur, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh and West Bengal have achieved more than 80% authorization of inventoried HCFs. The overall efficiency of authorizations issued in the country is 67% however the same need to be improved in every State and UT. There is a need for expediting the process of authorizing healthcare facilities, so that waste generated from facilities can be verified for proper collection and disposal.

4.5 Infrastructure for treatment and disposal of biomedical waste:

There are 202 CBWTFs in the country with cumulative treatment and disposal capacity of 1200 MT/day, of which incineration capacity is 814 MT/day. The present generation of 615 MT/day may look adequate at national perspective, however, at individual State's level availability of CBWTFs may vary. It is evident from the fact that States namely Assam, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya, Odisha, Puducherry, Rajasthan, Tamil Nadu and Uttarakhand use deep burial pits for disposal of BMW, however as per BMWM Rules, 2016 use of deep burials is allowed only in remote or rural areas where there is no access of CBWTF. These States/UTs required to ensure that deep

burial pits are authorized by respective SPCB/PCC and as per the standard prescribed under said Rules. SPCBs/PCCs should also strive to facilitate installation of CBTFs wherever possible to cover as many Healthcare facilities so that the burden of landfilling infectious (Yellow category) biomedical waste can be reduced.

Capacity utilization of CBWTFs vary among States/UTs depending on available infrastructure in a specific coverage area of 75Km, number of CBWTFs, geographical distribution in the State, population density in particular coverage area as well as connectivity of HCFs with CBWTFs. Therefore SPCBs/PCCs should relook at the available infrastructure considering above factors.

In States namely Assam, Jammu Kashmir, Kerala, Odisha, Pondicherry and Tamil Nadu, the capacity utilization of existing common infrastructure has exceeded 75%, therefore these States may examine the need for additional facilities by conducting gap analysis in each coverage area. While States namely A&N, Arunachal, Goa, Lakshadweep, Mizoram, Nagaland, Sikkim and Tripura does not have common facilities for treatment & disposal of biomedical waste, should facilitate setting up of new facilities of appropriate capacities.

SPCBs/PCCs namely Assam, Tamil Nadu and Uttarakhand have already conducted gap analysis to assess requirement of additional CBWTFs and accordingly they are under process of setting up of additional CBWTFs. All the remaining SPCBs/PCCs are required to require to conduct gap analysis for entire State to ensure coverage of common facilities in entire population and State's geographical area so as to minimize usage of deep burial pits for disposal of biomedical waste.

Mizoram SPCB has submitted proposal seeking financial assistance from Ministry of Environment Forest & Climate Change.

State-wise details on Common Infrastructure and capacity utilization

S. No	***Name of State***	***BMW Generation (Tons/day)***	***No of CBWTFs***	***BMW Treatment (Tons/day)***	***Authorized Capacity***	***CBWTF capacity utilized***
1	*Andaman and Nicobar Islands*	*0.7*	*0*	*0.7*	*No CBWTF*	*NA*
2	*Andhra Pradesh*	*15.1*	*12*	*15.1*	*44.4*	*34%*
3	*Arunachal Pradesh*	*0.4*	*0*	*0.4*	*No CBWTF*	*NA*
4	*Assam*	*8.8*	*1*	*6.2*	*7.2*	*86%*

5	*Bihar*	*34.8*	*4*	*10.8*	*45.3*	*24%*
6	*Chandigarh*	*3.9*	*1*	*3.9*	*6.5*	*60%*
7	*Chhattisgarh*	*3.7*	*4*	*4.3*	*22.8*	*19%*
8	*Dadar Nagar Haveli*	*0.3*	*Sent to Surat*	*0.3*	*Sent to Surat*	*NA*
			CBWTF		*CBWTF*	
9	*Delhi*	*28.8*	*2*	*28.8*	*62.8*	*46%*
10	*Goa*	*1.5*	*0*	*1.5*	*No CBWTF*	*NA*
11	*Gujarat*	*36.4*	*20*	*36.4*	*103.9*	*35%*
12	*Haryana*	*14.8*	*11*	*14.8*	*83.4*	*18%*
13	*Himachal Pradesh*	*3.4*	*2*	*3.4*	*9.2*	*37%*
14	*Jammu and Kashmir*	*7.3*	*4*	*7.7*	*9.8*	*79%*
15	*Jharkhand*	*5.9*	*3*	*5.9*	*13.1*	*45%*
16	*Karnataka*	*77.5*	*27*	*36.3*	*108.4*	*33%*
17	*Kerala*	*42.9*	*1*	*40.3*	*48.0*	*84%*
18	*Lakshadweep*	*0.1*	*0*	*0.1*	*No CBWTF*	*NA*
19	*Madhya Pradesh*	*17.8*	*14*	*17.3*	*46.5*	*37%*
20	*Maharashtra*	*62.3*	*31*	*62.3*	*130.9*	*48%*
21	*Manipur*	*1.0*	*1*	*0.9*	*2.6*	*35%*
22	*Meghalaya*	*1.2*	*0*	*0.9*	*0.8*	*Inadequate capacity*
23	*Mizoram*	*0.9*	*0*	*0.9*	*No CBWTF*	*NA*
24	*Nagaland*	*0.6*	*Nil*	*0.6*	*No CBWTF*	*NA*
25	*Odisha*	*18.0*	*5*	*17.4*	*14.9*	*Inadequate capacity*
26	*Puducherry*	*5.9*	*1*	*5.9*	*5.9*	*No additional capacity*
27	*Punjab*	*16.1*	*5*	*16.1*	*29.1*	*55%*
28	*Rajasthan*	*20.7*	*8*	*18.5*	*35.3*	*52%*
29	*Sikkim*	*0.5*	*0*	*0.5*	*No CBWTF*	*NA*
30	*Tamil Nadu*	*58.3*	*8*	*58.3*	*72.9*	*80%*
31	*Telangana*	*20.5*	*11*	*20.5*	*118.7*	*17%*
32	*Tripura*	*1.4*	*0*	*1.4*	*No CBWTF*	*NA*
33	*Uttarakhand*	*3.8*	*2*	*3.8*	*7.5*	*51%*
34	*Uttar Pradesh*	*52.5*	*18*	*52.5*	*91.3*	*58%*

35	*West Bengal*	*41.6*	*6*	*41.6*	*79.9*	*52%*
	TOTAL	*615*	*202*	*541*	*1200*	*45%*

Note: (i) In States where there is no CBWTFs, the biomedical waste is disposed off through captive treatment facilities (incineration or deep burial) installed by HCFs.

(ii) Disposal by incineration is considered as 60% waste generated.

(iii) The capacity of autoclave has been calculated considering 6 batches per day.

4.6 Implementation of Barcode System

Rules envisage implementation of barcode system by CBWTFs and HCF to track movement of biomedical waste between points of generation till its disposal at common facilities. As per status reports, only 04 States/UTs namely Bihar, Kerala, Punjab and West Bengal have adopted barcode system for tracking of biomedical waste.

22 States/UTs namely Andaman & Nicobar, Andhra Pradesh, Assam, Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, Madhya Pradesh, Maharashtra, Manipur, Odisha, Puducherry, Rajasthan, Sikkim, Tamilnadu, Telangana, Uttar Pradesh and Uttarakhand have reported that they are under process of adoption of Barcode system.

03 States/UTs namely Mizoram, Meghalaya and Sikkim submitted that there is no CBWTFs in operation and hence barcode system is not adopted yet. However, as per CPCB guidelines, in case the areas not covered by CBWTFs, concerned SPCB will be responsible for implementation of barcode system.

Hon'ble Supreme Court while hearing a matter of improper disposal of BMW in WP(C) 13029 of 1985, directed Ministry of Environment Forest & Climate Change and Central Pollution Control Board to implement the Barcode system through Centralized system. Accordingly, CPCB has already submitted technical proposal to MoEF&CC envisaging integration of all barcode systems into a central portal operated by CPCB. Further, as suggested by MoEF&CC, CPCB has constituted a Technical Committee to advise on planning and implementation of Barcode System at Central Level.

4.7 Monitoring of Healthcare Facilities other than Hospitals / Clinics

Healthcare Facilities like Veterinary Hospitals, AYUSH hospitals, Animal Houses etc. also come under the purview of BMWM Rules,

2016 and are responsible for ensuring scientific disposal of biomedical waste. CPCB has advised SPCB/PCCs for carrying out monitoring of such HCFs and also to ensure their authorization.

As per the compliance reports, all SPCBs/PCCs have reported that they have included facilities other than clinics and hospitals in their inventory, except Assam, Kerala and Lakshadweep.

4.8 Monitoring Infrastructure of SPCBs/PCCs and organizing training programs

Andaman & Nicobar, Lakshadweep, Manipur and Rajasthan have informed that they are under process of upgradation of their laboratories for conducting emission monitoring and effluent analysis. Remaining SPCBs/ and PCCs have adequate infrastructure to conduct monitoring to very compliance to standards / norms prescribed under BMWM Rules, 2016.

Training program is ongoing activity of State Boards and as informed every SPCB and PCC conducts training program regularly for Healthcare workers and State Board officials.

4.9 Installation of Online Continuous Emission Monitoring System

As per rules, every CBWTF with incinerator facility is required install online continuous emission monitoring system (OCEMS) and report the real time emission data to SPCB and CPCB servers. As per status report, 75% of CBWTFs have installed OCEMS systems. States namely Andhra Pradesh, Assam, Chandigarh, Delhi, Haryana, Himachal Pradesh, Puducherry, Punjab, and Telangana, have ensured data transfer from all CBWTFs in respective States.

One or more CBWTFs in the States namely Bihar, Chhattisgarh, Gujarat, Jharkhand, Jammu & Kashmir, Karanataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu, Uttarakhand, Uttar Pradesh and West Bengal have yet connected with CPCB server. None of the CWBTFs in Odisha and Manipur have installed OCEMS.

As per information available at CPCB OCEMS server, about 153 out of 202 CBWTFs have installed OCEMS analyzers and transmitting data to CPCB server. State-wise details is given below:

S. No	***Name of State***	***Total no. of CBWTFs (As per AR 2019)***	***OCEMS installed and data transmitted to CPCB***
1	*Andaman Nicobar*	*0*	*0*
2	*Andhra Pradesh*	*12*	*12*

3	*Arunachal Pradesh*	*0*	*0*
4	*Assam*	*1*	*1*
5	*Bihar*	*4*	*3*
6	*Chandigarh*	*1*	*1*
7	*Chhattisgarh*	*4*	*3*
8	*Daman &Diu and Dadra & Nagar Haveli*	*Waste handover to Gujarat facility*	*Waste handover to Gujarat facility*
9	*Delhi*	*2*	*2*
10	*Goa*	*0*	*0*
11	*Gujarat*	*20*	*15*
12	*Haryana*	*11*	*11*
13	*Himachal Pradesh*	*2*	*2*
14	*Jharkhand*	*4*	*2*
15	*J & K*	*3*	*1*
16	*Karnataka*	*27*	*25*
17	*Kerala*	*1*	*1*
18	*Lakshadweep*	*0*	*0*
19	*Madhya Pradesh*	*14*	*9*
20	*Maharashtra*	*31*	*18*
21	*Manipur*	*1*	*0*
22	*Meghalaya*	*0*	*0*
23	*Mizoram*	*0*	*0*
24	*Nagaland*	*Nil*	*0*
25	*Orissa*	*5*	*0*
26	*Puducherry*	*1*	*1*
27	*Punjab*	*5*	*5*
28	*Rajasthan*	*8*	*5*
29	*Sikkim*	*0*	*0*
30	*Tamil Nadu*	*8*	*4*
31	*Telangana*	*11*	*11*
32	*Tripura*	*0*	*0*
33	*Uttarakhand*	*2*	*1*
34	*Uttar Pradesh*	*18*	*17*
35	*West Bengal*	*6*	*3*
	Total	*202*	*153*

4.10 Submission of Annual Report of Biomedical Waste Management

Except Nagaland SPCB, every State Board has submitted annual compliance Report on Biomedical Waste Management for the year 2019. Gaps identified in compliance reports have been communicated to concerned SPCB/PCC for clarification.

4.11 Compliance by CBWTFs and HCFs

As per status reports, SPCBs/PCCs have been conducting monitoring of CBWTFs and HCFs for verification of compliance. As per Annual report, SPCBs/PCCs have observed 28816 violations against which

17196 directions / Notices were issued against defaulting HCFs and CBWTFs. State-wise details of action taken is given below;

S. No	Name of State	Total no. of violation by HCFs & CBWTFs	Total No. of show cause notices/Directions issued to defaulter HCFs/CBWTFs
1	Andaman Nicobar	0	0
2	Andhra Pradesh	466	640
3	Arunachal Pradesh	76	76
4	Assam	414	409
5	Bihar	809	809
6	Chandigarh	232	412
7	Chhattisgarh	33	8
8	Daman &Diu and Dadra & Nagar Haveli	Nil	92
9	Delhi	3597	1004
10	Goa	0	0
11	Gujarat	3068	3068
12	Haryana	128	83
13	Himachal Pradesh	55	55
14	Jharkhand	3231	325
15	J & K	5693	120
16	Karnataka	3926	905
17	Kerala	844	936
18	Lakshadweep	0	0
19	Madhya Pradesh	907	907
20	Maharashtra	273	225
21	Manipur	1	0
22	Meghalaya	0	0
23	Mizoram	0	2
24	Nagaland	Nil	Nil
25	Orissa	47	47
26	Puducherry	50	50
27	Punjab	3139	3139
28	Rajasthan	364	2573
29	Sikkim	Nil	Nil
30	Tamil Nadu	355	347
31	Telengana	826	826
32	Tripura	0	0
33	Uttarakhand	48	48
34	Uttar Pradesh	171	27
35	West Bengal	63	63

4.12 Comparative Evaluation of States

Effectiveness of States in implementing BMWM Rules based Key Performance Indicators have been assessed relatively based on a quantifiable score, where equal weightage is given to each

performance indicator with a score of 2 is given for initiatives taken for implementation, 1 for under progress action points and Nil for non-implemented action points. Seven States not having common facilities have been excluded for relative evaluation. Higher score against a State will only indicate where the States stands despite needing more actions on ground for effective implementation of BMWM Rules. Accordingly, comparative evaluation on implementation of Rules by 28 States/UTs against a total score of 24 is give in Table below.

Indicative & Relative performance of States in implementation of Rules

S. No	***Name of State***	***Score (out of 24)***
1	*Chandigarh*	*21*
2	*Delhi*	*21*
3	*Himachal Pradesh*	*21*
4	*Puducherry*	*21*
5	*West Bengal*	*21*
6	*Bihar*	*20*
7	*Haryana*	*20*
8	*Madhya Pradesh*	*20*
9	*Punjab*	*20*
10	*Telangana*	*20*
11	*Andhra Pradesh*	*19*
12	*Jammu & Kashmir*	*19*
13	*Manipur*	*19*
14	*Tamil Nadu*	*19*
15	*Uttarakhand*	*19*
16	*Gujarat*	*18*
17	*Kerala*	*18*
18	*Odisha*	*18*
19	*Uttar Pradesh*	*18*
20	*Assam*	*17*
21	*Chhattisgarh*	*17*
22	*Maharashtra*	*17*
23	*Andaman and Nicobar*	*16*
24	*Mizoram*	*16*
25	*Rajasthan*	*16*
26	*Sikkim*	*16*
27	*Meghalaya*	*15*
28	*Lakshadweep*	*14*

Note: This table indicate only the relative standing of 28 States on implementation of Rules and higher score against a State should not be taken as full implementation of Rules.

State specific information on implementation of BMWM Rules, 2016 compiled as per the status reports submitted by SPCBs/PCCs is given at ***Annexure III****.*

5. Actions taken by SPCBs/PCCs and Scope of Improvement

CPCB has assessed the implementation status of 29 States based on status reports submitted SPCBs/PCCs. Assessment based on State-wise activities pertaining to implementation of BMWM Rules and scope of further improvement are given at ***Annexure IV.***

6. Over-all observations and Recommendations

(i) It is noticed that, consequent to directions issued by Hon'ble NGT, there has been 20% increase in number of HCFs identified and 40% increase in number of HCFs brought under the process authorization under BMWM Rules, 2016. This would result in improvement in management of biomedical waste. However, there is no information on about 20% of the identified HCFs since those facilities are yet to be brought under authorization process. SPCBs/PCCs should therefore, compete the remaining task expeditiously.

(ii) It is observed that out of 3,19,907 no. of HCFs, about 75 % of them utilising services of CBWTFs, while 18,552 No. of HCFs, that is 5.8% of HCFs are having captive bio-medical waste treatment and disposal facilities. Since most of the captive facilities utilize deep burial method of disposal, the objective of the States should be to extent possible minimize disposal of biomedical waste through captive facilities and facilitate availability of CBWTFs for final disposal.

(iii) The data indicates that only 10 States/UTs namely Chhattisgarh, Haryana, Lakshadweep, Manipur, Nagaland, Puducherry, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal have achieved more than 80% authorization of inventoried HCFs. The overall efficiency of authorizations in the country is far from satisfactory at 48%. Therefore, all SPCBs/PCCs should expedite the process of authorizing healthcare facilities, so that waste generated from facilities can be verified for proper collection and disposal.

(iv) The present generation of 615 MT/day of biomedical waste may look adequate at national perspective, however, at individual State's level availability of CBWTFs may vary. It is evident from the fact that despite having CBWTFs, States namely Assam, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya, Odisha, Puducherry, Rajasthan, Tamil Nadu and Uttarakhand still use deep burial pits for disposal of BMW as the existing CBWTFs fail to cover entire State.

(v) Capacity utilization of CBWTFs vary among States/UTs depending on available infrastructure in a specific coverage area of 75Km, number of CBWTFs, geographical distribution in the State, population density in particular coverage area as

well as connectivity of HCFs with CBWTFs. Therefore, SPCBs/PCCs should relook at the available infrastructure and facilitate new CBWTFs to cover entire population and State's geographical area so as to minimize usage of deep burial pits to the extent possible.

(vi) In States namely Assam, Jammu Kashmir, Kerala, Odisha, Pondicherry and Tamil Nadu, where the capacity utilization of existing common infrastructure has exceeded 75%, these States may examine the need for additional facilities by conducting gap analysis in each coverage area.

(vii) States namely A&N, Arunachal, Goa, Lakshadweep, Mizoram, Meghalaya, Nagaland, Sikkim and Tripura do not have common facilities for treatment & disposal of biomedical waste, should facilitate setting up of new facilities of appropriate capacities in consultation with State Governments.

(viii) Having 4 years completed since re-notification of Rules, SPCBs/PCCs may now act strictly against non-complying HCFs. They may consider imposition of ECC as per the guidelines issued by CPCB in compliance with Orders of Hon'ble NGT.

(ix) Incidents of illegal dumping of biomedical waste are reported from time to time, and such incidents were also reported during COVID19 pandemic period. CPCB has prepared separate guidelines for "Monitoring Compliance of Common Biomedical Waste Treatment Facilities by State Pollution Control Boards / Pollution Control Committees" which provide check-lists for monitoring CBWTFs specially to monitor illegal handling of biomedical waste. Said guidelines gives guidance to State Boards to verify Operational Compliance, Adequacy of Infrastructure, Reporting of data and Inspections & Monitoring. SPCBs/PCCs should periodically verify operations of CBWTFs as per said check list. A copy of the same is given at Annexure V.

(x) Compliance of CBWTF is an important factor since CBWTFs release combustion gases and handles highly infectious wastes from multiple hospitals. SPCBs should therefore consider closing down or restrict operation of non-complying CBWTFs till they time it demonstrates compliance, and mean while arrangement should be made to transport waste collected from member HCFs of such non-compliant facilities to another CBWTF nearby. SPCBs should also treat non-complying facilities as inadequate and allow new compliant facilities in same coverage area.

(xi) As per Rules, implementation of barcode system is mandatory to track movement of BMW, this system would also help in daily accounting of BMW. Despite the lapse of 3 years given for implementation of the system, only 04 States/UTs namely Bihar, Kerala, Punjab and West Bengal have adopted barcode system and 22 States/UTs are under process of adoption of the same. While there is some improvement implementing barcoding system, it is reported that HCFs are not joining the system. This indicates that SPCBs have failed to implement this provision effectively.

(xii) There has been improvement in submission of Annual compliance status reports by SPCBs. SPCBs/PCCS shall

continue the same and they may prepare State specific Annual reports and upload the same in respective websites.
(xiii) About 75% of CBWTF have installed online continuous emission monitoring system (OCEMS) and real time emission data transmitted to SPCB and CPCB servers. States namely Bihar, Chhattisgarh, Gujarat, Jharkhand, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu, Uttarakhand, Uttar Pradesh and West Bengal should ensure that all CBWTFs in their State install OCEMS systems. Odisha and Manipur should ensure installation of OCEMS in their States in time bound manner."

8. We may also note that Oversight Committee constituted by this Tribunal for the environmental issues in the State of U.P., headed by Justice S.V.S. Rathore, a former Judge of the Allahabad High Court, has furnished two reports dated 13.08.2020 and 08.01.2021. In the first report the recommendations are as follows:-

"8. Recommendation

In view of the above, we recommend as follows:

1. There is an elaborate track and trace system of ***BMW*** *prescribed in the Rules in which all the coloured bags are bar-coded and the movement of trucks is tracked through GPS. However, barring a small pilot in Lucknow, none of the operators is using a bar-coding system which puts a big question mark on the reliability of the data. State PCB must ensure that the bar-coding system be strictly followed failing which action under law be initiated against the concerned operators.*

2. There are large infrastructural gaps in HCFs due to which they are not complying with BMW Rules. 452 HCFs out of 530 HCFs with an operating capacity of more than 100 beds do not have STPs/ETPs. Even in Government facilities, out of 1027 HCFs comprising of District Hospitals and CHCs 564 HCFs do not have collection sheds where biomedical waste can be collected. As far as PHCs are concerned, only 628 PHCs out of 3620 PHCs have deep burial pits. There is no permanent agreement for BMW disposal in 2992 PHCs. The progress of the construction of ETPs in District Hospitals is also very slow. This year, only 40 District Hospitals have been taken up for ETP construction, leaving the balance for Phase-II and all the 853 CHCs for Phase-Ill. These infrastructure gaps must be addressed immediately, failing which action under EPA, 1986 be initiated against the defaulters.

3. ***Compliance with Biomedical Waste Rules 2016 appears to be lax. There are still 2483 HCFs that have not taken authorization under BMW Rules. Out of these, 441 HCFs are Government HCFs against which no prosecution has been launched so far. All these facilities must be immediately inspected and authorizations be issued. Gaps in infrastructure must be addressed within one month and responsibility for non-compliance be fixed. Let the State PCB apprise this Committee and Hon'ble NGT about the enforcement action taken by them on the above points within one month****.*

4. While we are getting information about the Health Department, there appears to be total communication gap with the Animal Husbandry Department and Ayush Department. The Committee could not get information of BMW Rules Compliance in any of the Veterinary Hospitals or Ayush Hospitals. While Health Department has a monitoring mechanism for BMW, these departments have not created any such mechanism for monitoring the progress of BMW Rules in their Hospitals. Chief Secretary may be directed to monitor the progress with Principal Secretaries of these Departments and ensure filing of compliance report before NGT. Responsibility for negligence, if any found out, maybe fixed.

5. An important gap area noticed is the disposal of radioactive materials. With the proliferation of radiotherapy, nuclear medicine, X Rays, CT Scans and other equipments using radioactive materials, there is an urgent need to ensure foolproof disposal of these highly volatile materials. This is an area where health department must develop standard protocols and build capacity for all the stakeholders.

6. By far the most important aspect is capacity building amongst the stakeholders. Pollution in Hospitals is a constant challenge. The nature and extent of infections keep on varying, the latest being COVID-19. Hence the SOPs also keep on changing to meet the exigencies. What is required is to continuously keep organizing capacity building workshops for all stakeholders- doctors, paramedics, other hospital staff, laboratory staff, blood bank staff, private practitioners, nursing homes and the HCFs. We feel that capacity building endeavor by the State Government needs to be increased manifold.

7. Lastly, the meetings of the State Advisory Committee and District Advisory Committee should take place more frequently."

9. In the second report summary of status of compliance has been furnished, as follows:-

"V. SUMMARY OF THE COMPLIANCE STATUS AS ON 06.01.2021

S. No	Directions of Hon'ble Tribunal	Concerned Department	Compliance Status
1	*Complete inventory of Healthcare Facilities (HCFs) and Biomedical waste generation*	*UPPCB*	***Complied*** • *There are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs.* • *These Facilities are presently generating 52.5 TPD of Bio Medical Waste.* • *There are 18 Common Biomedical Waste Treatment Facilities (CBTF) in the entire State with treatment capacity of 54.4 TPD.*
2	*Authorization to all non-bedded HCFs like clinics, laboratories, research institutes as well as veterinary hospitals, etc. identified in inventory of HCFs within 3 months*	*UPPCB*	***Partially complied*** *There are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs.*
3.	*Adequate number of Common Facilities to cover all HCFs in the State. [Also to ensure an adequate number of Common Biomedical]*	*UPPCB*	***Complied*** • *Total biomedical waste generation: 52.5 MT/day* • *Total capacity of CBWTFs operating in the State: 54.4 ton/day*
4	*Constitution of State and District Advisory Committees*	*UPPCB/Health Department*	***Partially Complied*** • *State and District Advisory Committees have been constituted.* • *The State Advisory meeting was held on 21.09.2020 regarding the disposal of excessive COVID-19 Biomedical waste generated from COVID-19 designated hospitals.*
5	*Barcodes system in every HCF and CBWTFs*	*Health Department*	***Partially complied*** • *Uttar Pradesh Medical Supply Corporation had floated a tender for bar coding and Vehicle tracking system for Biomedical waste management and its prebid meeting was on 29.05.2020. The bid submission date was on 11.07.2020.* • *UPMSCL has awarded the contract to the L1 Bidder and the Contract has been signed between the DG Medical and Health and VTS/ Bar coding Service Provider on 23.09.2020.* • *As per the Contract agreement, the service provider had to get approval of the solution design and finalization of the software, which was seen by the officials of Medical care on 16.12.2020.* • *Both the Weblink and mobile application was found to be satisfactory as per the requirements, so the Service Provider has been given the approval by Director General Medical & Health Services on 24.12.20 and directed to Roll out and scale it up to all the districts of the state and also give the training to all the CBWTF personnel's and periodically inform*

			DGMH as per the Contract Agreement. • *The procurement of the hardware has been done and is currently being Installed on the Vehicles of the CBWTF one by one.*
6	*Monitoring of Healthcare Facilities other than hospitals/clinics – Veterinary Hospitals, Animal Houses, AYUSH Hospitals, blood banks, Pathological labs etc.*	*Health Department*	***Non-complied*** *No information regarding Veterinary Hospitals, Animal Houses, AYUSH Hospitals, blood banks, Pathological labs etc. has been provided.*
7	*Availability of adequate infrastructure with SPCBs/PCCs to monitor compliance*	*UPPCB*	***Complied*** *There is adequate infrastructure available with SPCB to monitor compliance.*
8	*I. Training and Capacity Building of officials of health Department and SPCBs"* *II. Training and Capacity Building of Healthcare workers in HCFs*	*Health Department/ UPPCB*	***Partially complied*** • *BMW committees have been constituted in all District level Hospitals. Nodal Officers have been designated in each District to ensure proper implementation of the Biomedical Waste Management Rule 2016 and all have been given TOT's for proper management and disposal of BMW.* • *Officers in the rank of ACMOs have been designated as Nodal Officers in each District as well as in Health care facilities to ensure proper implementation of the BMW Rule.*
9	*Installation of OCEMS by CBWTFs as a tool for self-monitoring and compliance verification by SPCBs/PCCs*	*UPPCB*	***Partially complied*** • *18 CBWTFs are operational in State, out of which OCEMS of 14 are connected with server of CPCB and rest are not operational.* • *For connection of said 04 CBWTFs (M/s Synergy Waste Management Pvt. Ltd., Barabanki, Lucknow, M/s SMA Watergrace Mediwaste Management (P) Ltd., Lucknow, M/s Will Environment Inc., Kanpur, M/s MPCC, Bijauli, Jhansi) OCEMS with CPCB server, the direction has been issued under Section-5 of Environment Protection Act, 1986 vide UPPCB letter dated 10.08.2020.*
10	*Submission of Annual Reports to CPCB*	*Health Department*	***Complied*** *The annual report of Public Health care facilities for the year 2019 has been sent to Regional Office, UPPCB and UPPCB has sent the report to CPCB.*
11	*Compliance to standards by CBWTFs*	*UPPCB*	***Partially Complied*** • *18 CBWTFs are operational in State, out of which 15 are complied and 03 are non-complied. The non-complying CBWTFs are M/s MPCC, Jhansi, M/s MPCC, Khalilabad, Santkabir Nagar and M/s Sangam Mediserve, Handiya, Prayagraj.* • *Till date SPCB has imposed EC of Rs. 1.43 Cr against 08 CBWTFs.* • *Prosecution under section 15 of EPA, 1986 and under Air/Water Act has been filed against 03 abovementioned CBWTFs.*

12	*Compliance of HCFs [For on-site segregation, pre-treatment of infectious waste-yellow (h), separate storage space for BMW and treatment of wastewater]*	*UPPCB*	***Partially complied*** • *There are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs.* • *Health Department has designated Nodal Officers in each District to ensure proper implementation of the Biomedical Waste Management Rules, 2016 and all have been given training of trainers (ToT) for proper management and disposal of BMW from COVID-19 facilities (Isolation hospital and Quarantine camps/ homes).*
13	*Monitoring of compliance of BMW management as per District environmental Plan by the District Magistrates*	*UPPCB*	***Partially complied*** • *In compliance with Rule-12(4), District Monitoring Committees (DMCs) have been constituted in each District headed by the District Magistrate to monitor the implementation of the BMW Rule.* • *The State advisory meeting was held on 21.09.2020 regarding the disposal of excessive COVID-19 Biomedical waste generated from the COVID-19 designated hospitals.*
14	*Environmental Compensation imposed on defaulters*	*UPPCB*	***Partially complied*** • *Environmental Compensation of Rs. 7.60 Crore imposed on 141 HCFs. Out of this amount, 19.5375 Lakhs has been recovered.* • *Environmental Compensation of Rs. 1.43 Cr imposed on 08 CBWTFs. Out of this amount, Rs. 47 Lakhs has been recovered.*
15	*Action taken against defaulters*	*UPPCB*	***Partially complied*** • *Prosecution under Section 15 of Environmental Protection Act, (EPA)-1986 against Health Care Facilities: 04* • *Prosecution under Section 15 of EPA-1986, against CBWTFs: 03* • *Notice issued against defaulter HCFs: 3880* • *Show Cause Notice issued under EPA, 1986 against HCFs: 27*
16	*Individual averments with regard to the concerned hospitals mentioned in* ***O.As No. 710/2017, 711/2017, 712/2017 and 713/2017*** *may also be verified and appropriate action taken in accordance with law and a specific report given by the concerned State PCBs to the CPCB .*	*UPPCB/ Health Department*	***Partially complied*** *Health Department has sent letter regarding Inspection to CMO Shahjahanpur, Noida, Bareilly and Hardoi. They had to send a comprehensive report by 1st January 2021 about compliance of Biomedical waste management carried out in the hospitals mentioned in OAs 710/2017, 711/2017, 712/2017 and 713/2017. Reports of inspection carried out by CMO's for Ganga Charan Hospital, Bareilly and Kailash Hospital, Gautam Buddha Nagar has been received by the Health Department.*

10. Final recommendations of the Oversight Committee is as follows:-

"VI. RECOMMENDATIONS BY THE OVERSIGHT COMMITTEE

In view of the above, we recommend as follows:

1. *In compliance with the Biomedical Waste Management Rules, 2016,* ***every biomedical waste management facility must obtain authorization from State Pollution Control Board. At present, there are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs. The SPCB may be directed to inspect these facilities immediately and issue authorizations provided they are fully compliant. The responsibility for non-compliance should be fixed.***

2. ***As far as the implementation of barcoding for colored bags and containers containing BMW is concerned, a pilot scale project has been taken up in Lucknow district. For scaling up of the project to the entire State, the bid has been finalized and the contract has been provided to service provider. The Health Department may be directed to complete the work for implementation of barcoding and tracking of vehicles through GPS within a month positively.***

3. ***With regard to the implementation of Biomedical Waste Management Rule, 2016, installation of ETP is mandatory for above 10-bedded hospitals. It was informed that due to some litigation the work of ETP construction has stopped. UP Jal Nigam may be directed to resolve the issue in this regard and expedite the process of ETP construction and complete the work within the specified time duration.***

4. ***In compliance with BMW Rules 2016, disposal of BMW by deep burial is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility. The Health Department/concerned department may be directed to follow the provisions and guidelines issued by CPCB from time to time and standards mentioned in Schedule III of BMW Rules 2016 for such facility.***

5. ***In compliance with the Biomedical Waste Management Rules, 2016, no information is being provided by the AYUSH hospitals (since AYUSH hospitals have been given the permission for surgery) and Department of Animal Husbandry. Chief Secretary, U.P. may be directed to monitor the progress with Principal Secretary of Medical Education, AYUSH Department and Department of Animal Husbandry. Since Health Department is the nodal department, Medical***

Education, AYUSH Department and Department of Animal husbandry should send their information to Health Department where it can be compiled for further communication.

6. ***The CPCB may be directed to lay down standard for new technologies for treatment and disposal of biomedical waste and prescribe specifications for treatment and disposal of biomedical wastes. Further, the CPCB may also be directed to undertake or support research regarding biomedical waste.***

7. ***The SPCB may be directed to grant and renewal, suspension, refusal or cancellation of authorization under Rule 7, 8 and 10 of BMW Rules, 2016. Further, SPCB may also be directed to regularly monitor the compliance of various provisions and conditions of authorization.***

8. ***State PCB may be directed to ensure the implementation of Biomedical Waste Management Rules 2016 and recommendations of the Advisory Committee in all health care facilities.***

9. ***For non-compliance with BMW Rules, 2016, notice have been issued against 3880 HCFs. Prosecutions has been filed against 04 HCFs and 03 CBWTFs under Section 15 of EPA, 1986, and show cause notices have been issued against 27 HCFs under EPA, 1986. The State PCB may be directed to initiate action under the law against the non-compliant units.***

10. ***EC of Rs. 7.17 Cr and Rs. 85 Lakhs have been imposed against 130 HCFs and 06 CBWTFs, respectively. The imposed penalty has yet not been realized. State PCB may be directed to take necessary action and ensure realization of EC as per prescribed procedure.***

11. ***An important gap area noticed is the disposal of radioactive materials. With the proliferation of radiotherapy, nuclear medicine, X Rays, CT Scans and other equipment using radioactive materials, there is an urgent need to ensure foolproof disposal of these highly volatile materials. This is an area where health department must develop standard protocols and build capacity for all the stakeholders.***

12. ***All the HCFs where the collection sheds are under construction shall ensure that no waste should be stored at their premises. They should regularly hand over their waste to the service provider for proper treatment and disposal on day to day basis.***

13. ***The process of conversion of biomedical waste into clean energy i.e. hydrogen fuel using sunlight by the***

technique of photo reforming based on Welsh Government model may also be explored in India.

14. The approach for conversion of biomedical plastic waste into construction of bituminous road and partial replacement of cement in concrete may also be explored and researched.

15. The meetings of the State Advisory Committee and District Advisory Committee shall take place regularly to monitor and ensure compliance with BMW Rules, 2016."

11. From the above it is seen that there are huge gaps in the compliance of authorization regime. In some of the States, compliance is ranging from 17% to 38% only. We also note underutilization of the common bio-medical facilities at many places. Adequacy of facilities and their siting may need review. Such facilities must obtain requisite Environmental Clearance (EC). Recycling of waste will only be through authorized recyclers. As observed earlier, it is utmost necessary to ensure that hazardous bio-medical waste is not mixed with the general waste. CPCB needs to review the compliance status from time to time, atleast once in every quarter and issue directions based on the observations from the reports received.

12. CPCB may ensure that for strict compliance of the rules, the compensation regime is duly applied against the defaulters, following due process. Standards of handling of BMW need to be duly complied. The authorities must ensure that waste is disposed of only through authorized agencies, common facilities are located as per siting guidelines and they must have EC. There should be no pilferage by unauthorized recyclers. Adequate number of common bio-medical facilities should be set up. The Chief Secretaries of all the States/UTs may oversee compliance atleast every quarter in terms of direction of this Tribunal vide order dated 16.01.2019 in O.A. No. 606/2018 followed by

further orders. The Chief Secretaries may *inter-alia* ensure that authorization is secured by every health care facility in their respective jurisdiction and also there is adherence to the norms. Similarly, the District Magistrates may, at their level, take necessary steps in their Districts, in accordance with the District Environmental Plans. As found by the Oversight Committee for UP, ETPs are either not provided or are not functional in various health care facilities as required under the Rules. Compliance in this regard may be ensured in all States/UTs. While permitting deep burials, it may be ensured that ground water contamination does not take place.

13. Apart from the above general directions applicable to all the States/UTs, the UP State PCB may look into the compliance status of the Hospitals, who are parties in O.A. Nos. 710/2017, 711/2017, 712/2017 and 713/2017, and give a report to the Oversight Committee for UP, headed by Justice S.V.S. Rathore, a former Judge High Court of Allahabad within two months.

The applications are disposed of in above terms.

A copy of this order be forwarded to the CPCB, State PCBs/PCCs of all the States, Chief Secretaries of all the States/UTs by e-mail for compliance.

A copy of this order be also forwarded to Justice S.V.S. Rathore, former Judge High Court of Allahabad by e-mail.

Adarsh Kumar Goel, CP

S.K. Singh, JM

Item No. 07 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 72/2020

(With report dated 08.01.2021 and 14.01.2021)

In re: Scientific Disposal of Bio-Medical Waste arising out of Covid-19
treatment- Compliance of BMW rules-2016,

Date of hearing: 18.01.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPER
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. Raj Kumar, Advocate for CPCB

ORDER

1. The issue for consideration is the remedial action to address the gaps in compliance of the BMW Rules, 2016, as applicable to the disposal of bio-medical waste **arising out of handling of COVID-19** disease.

2. Scientific management of such waste is necessary for protection of environment and public health in view of potential of such infectious waste affecting public health generally and the concerned workers and professionals etc. in particular. The matter was earlier considered vide order dated 23.04.2020 in the light of news item dated 19.04.2020, published in the Indian Express titled **'Biomedical waste facilities, a red flag in coronavirus fight'.** The Tribunal also considered the 'Guidelines for Handling, Treatment and Disposal of Waste Generated during Treatment/ Diagnosis/ Quarantine of COVID-19 Patients'. It was observed:-

> **"***We had interaction broadly on the* ***need for revision of the laid down guidelines to address all concerns in the light of best practices and experience from time to time*** *so that all aspects of scientific disposal of liquid and solid waste management are taken care of not only at institution level but also at individual levels (such as manner of disposal of used PPEs, used bags, gloves, goggles, etc., without the same getting straightaway mixed with other municipal solid waste causing contamination etc.), dealing with situations where adequate facilities (like incinerators) are not available, distinct colour guidelines for the bins etc., reviewing effectiveness of the monitoring mechanism, including securing information by way of electronic manifest system from the handlers of such waste and its online reporting by the State PCBs/PCCs on daily basis by developing necessary software, creating awareness by special awareness programmers, organizing trainings in concerned Local Bodies, Health Departments, etc., providing workers handling COVID-19 waste with adequate protective gear, adequate coordination with media and other concerned regulatory authorities in the States and the Central Government. We have also observed that out of 2.7 lakh HCFs identified, only 1.1 lakh HCFs are authorized under the BMW Management Rules, 2016 so far. The State PCBs/PCCs have to make serious efforts to bridge this gap to mitigate possible risk in terms of unscientific disposal of bio-medical waste and to enforce rule of law.***"***

3. The Tribunal referred to pending proceedings in O.A. No. 710/2017, *Shailesh Singh v. Sheela Hospital & Trauma Center, Shahjahanpur & Ors.* to remedy gaps in compliance of Bio- Medical Waste Management Rules, 2016 generally. In the said matter, vide order dated 22.01.2020, the Tribunal observed:-

> **"***2. .....****unscientific disposal of bio-medical waste had potential of serious diseases such as Gastrointestinal infection, Respiratory infection, Eye infection, Genital infection, Skin infection, Anthrax, Meningitis, AIDS, Haemorrhagic fevers, Septicaemia, Viral Hepatitis type A, Viral Hepatitis type B and C, etc. Such unscientific disposal also causes environmental pollution leading to unpleasant smell, growth and multiplication of vectors like insects, rodents and worms and may lead to the transmission of diseases like typhoid, cholera, hepatitis and AIDS through injuries from syringes and needles contaminated with various communicable diseases .....***
>
> *3. Reference was also made to the report of the CAG placed on its website in May, 2017 as follows:*
>
> > *"Inadequate facility of bio-medical waste (BMW) treatment. As per the report paragraph 2.1.9.5 there were 8,366 Health Care Establishments (HCEs) out of which 3,362 HCEs were*

operating without authorization. ***Total BMW generated in the State was 37,498 kg/day out of which only 35,816 kg/day was treated and disposed of. BMW of 1,682 kg/day was being disposed of untreated due to inadequate treatment facility.*** *But UPPCB failed to monitor unauthorised operation and untreated disposal of BMW and did not take any action against the defaulters."*

4. *The matter was again reviewed on 15.07.2019 in the light of the report of the CPCB particularly with reference to inventory of HCFs and biomedical waste generation, operation of healthcare facilities without authorization,* ***action by the States with no treatment & disposal facilities, implementation of Barcode system, constitution of State Level Advisory Committees, submission of Action Plans by State Governments, key performance indicators****, Environmental Compensation for violation by the healthcare facilities and Environmental Compensation for common biomedical waste treatment facility.*

5. *The recommendations in the report were accepted. All the States/UTs were directed to take further action on that basis. The Tribunal also directed:-*

"1to7 xxx xxx xxx

8. The States/UTs may furnish complete inventory of HCFs and BMW generation within two months and where the inventories are incomplete, the same may be completed. We place on record our disapproval of the inaction of States in furnishing the inventory studies as well as for incomplete inventories. ***It is regretful to note that 25% of identified HCFs have not even taken authorization from the concerned State PCBs in absence of which, monitoring of waste management is not taking place. The States which have not set up common treatment and disposal facility must do so within two months as per Rules.*** *The States who have not furnished the information on the barcode system may also furnish such information at the earliest but not beyond two months. The States which have not yet constituted State Level Advisory Committee may also do so within two months. The action plans and their execution must be carried out having regard to the key performance indicators.* ***The States which have inadequate action plans, not satisfactory action plans, needing further actions must also do the needful within two months realizing their responsibility to the environment and public health which ought to be monitored directly by the Chief Secretaries in terms of order of this Tribunal dated 16.01.2019 in O.A. No. 606/2018 and further orders in the said matter****.*

4. The Tribunal further observed:

"*7. COVID 19 pandemic has emerged in the last few months and has affected number of people across the world. More than one and a*

half lac people have died world over and more than 600 in India. The virus spreads mainly by droplets and also by touch of contaminated articles. To prevent spread, lock down has been enforced, restricting people to their homes, so as to avoid social contact. Affected persons are treated in hospitals and those suspected are quarantined in various facilities or at home. Large scale testing has been and is being done. By way of precaution, masks, gloves, PPE etc. are used which are disposed of thereafter. In the process, huge bio-medical waste is generated which itself can be source of disease. While the BMW Rules generally take care of the situation by way elaborate provisions to deal with biomedical waste generated in dealing with infectious diseases such as HIV, HINI etc., present pandemic has presented further challenge inter-alia on account of:

(i) Existing gaps in compliance of BMW Rules in terms of capacity to scientifically dispose of generated waste and non-compliance of procedural and monitoring aspects;

(ii) COVID-19 virus has emerged suddenly and is highly infectious, requiring more precautions compared to other infectious diseases.

9. ***There appears to be need for further revision of the guidelines to cover all aspects covering not merely institutions but also individual households and dealing with situations where scientific disposal facilities like incinerators are not available and any unmindful deep burial without adequate safeguards can adversely affect the ground water and pose danger to health and safety of people.***

Disposal of COVID-19 waste in general bins so as to be part of municipal waste or unscientific handling sewage and other liquid waste without safeguards can also be hazardous. There is also need to incorporate best practices in the light of further experience and new thoughts emerging from time to time, apart from continued supervision and monitoring, compiling data in an online format, use of electronic /digital manifest system to track and log COVID-19 waste from all sources, preventing its accidental spillage, analyzing the data for strategic planning and the feedback by creating necessary software, to the extent viable.

There is also need for creating awareness about the precautions and steps to be taken by all handlers and workers as well as citizens, making a model plan, to be adopted locally by the Panchayat, Sub-division, District and State authorities with such further changes as may be necessary in local conditions. Health of all operators has been protected and preventive measures taken. There is need for orientation/training of persons responsible for compliance in Local Bodies and Health department by an online mechanism besides providing them with adequate protective gear. CPCB has to take lead and coordinate with media as well as the concerned Central/State departments.

Let the Chief Secretary of States/UTs by coordinating the activities of State's concerned departments like of Urban Development, Health, Irrigation & Public Health also closely

monitor the scientific storage, transport, handling, management and disposal of COVID-19 waste as its unscientific handling poses a grave threat environment and health of people. At the national level, let a high level task team of Ministry of MoEF&CC, Health UD, Jal Shakti, Defence and CPCB supervise the handling and scientific disposal of COVID-19 waste in accordance with the guidelines.

Let the State Departments of Environment and PCBs/PCCs ensure compliance of Biomedical Waste Management Rules, 2016 and furnish action take report to CPCB and CPCB take further steps and furnish a consolidated report to this Tribunal of the steps taken and the ground status as on 31.5.2020. The report may be furnished by 15.06.2020.

*List for further consideration on 22.06.2020.***"**

5. The matter was last considered on 20.07.2020 as follows:-

"5. Pursuant to above, CPCB has filed its consolidated report on 17.06.2020 mentioning the steps taken and ground status of compliance.

6. The report mentions the meeting held by the Member Secretary, CPCB with the State PCBs/ PCCs, preparation of awareness material such as web circular, posters, videos, pictoral guidelines, user manual, waste tracking app, Covid – 19 related audios-videos and jingles. High Level Task Team was constituted with representatives from Ministries of Environment Forest & Climate Change, Health and Family Welfare, Jal Shakti, Housing and Urban Affairs and Defence. Model plans were prepared by the High Level Task Team for management of Covid – 19. CPCB revised its guidelines on 10.06.2020 covering following aspects:-

> ***"****a. Description of general solid waste including indicative list of items for segregation in isolation wards, quarantine centres and homecare;*
>
> *b. Scope of Training and awareness to waste handlers in hospitals and quarantine centres;*
>
> *c. Use of COVID-19 biomedical waste tracking App "COVID19BWM" developed by CPCB by waste generators, transporters, CBWTF operators and SPCBs.*
>
> *d. Guidance on handling of general solid waste from quarantine centres and isolation wards and disposal of solid waste.*
>
> *e. Options for safe disposal of COVID-19 related biomedical waste, in case capacity of existing capacity of common biomedical waste treatment and disposal facilities (CBWTFs) is exhausted.***"**

7. The guidelines have been circulated to concerned Central and State Government Departments. Waste tracking system software has been developed for waste generators, Common Biomedical Waste Treatment and Disposal Facility (CBWTF) Operators, State Pollution Control Boards / Pollution Control Committees and Urban Local Bodies. The system will track the generation, collection and disposal of waste. Some States have developed their own apps. 13 State PCBs/PCCs have initiated submission of daily status. Rest of the States are giving reports manually. A consolidated table based on information received with comments about adequacy of facility has been filed. The data has been analysed as follows:

> *"As per the information given by SPCBs/PCCs,* ***2,907 hospitals, 20,707 quarantine centres, 1,539 sample collection centres and 264 testing laboratories, are involved in generation of COVID-19 waste. Generation of COVID-19 related biomedical waste in the country is about 101 Metric Tonnes per day (MT/day). State-wise generation of COVID-19 biomedical waste generation and its management****"*

8. It is further stated:-

> ***"****(iii) As per the information received from SPCBs/PCCs, about 101 MT per day of COVID-19 related biomedical waste generated in the country, this quantity is in addition to normal biomedical waste generation of about 609 MT per day. Further, about 195 CBWTFs are providing the services of collection, transportation and disposal of COVID-19 biomedical waste from hospitals, isolation wards, quarantine centres, home quarantines, homecare, sample collection centres and testing laboratories.*
>
> *(iv) Available capacity for incineration of COVID-19 biomedical waste in the country is about 840 Metric Tons (MT) against the total generation of about 710 MT per day (comprising of 609 MT/day of regular biomedical waste and 101 MT/day of COVID related biomedical waste). It is estimated that about 55% of cumulative incinerator capacity in the country is being utilised. However, there may be capacity limitation in specific areas or cities when the available capacity of CBWTFs in a coverage area of 150 Km may not be adequate due to spike in generation of biomedical waste.*
>
> *(v) Sudden spike in generation of biomedical waste may create critical situation in States with 70% or more capacity utilization of incinerators, therefore such States may identify stand-by facilities such as common hazardous waste incinerators, industrial captive incinerators and captive disposal facilities at HCFs. Use of deep-burial pits may be considered as a last option. Proper segregation of waste will also increase disposal capacity of incinerators.*
>
> *(vi) Status of compliance by State/UTs and SPCBSs/PCCs with respect to awareness & training to waste handlers,*

preparation of model plans for villages and usage of COVID-19 biomedical waste tracking app."

9. The table mentions that certain States have yet to implement guidelines regarding training and awareness programme and have to give information about execution of model plans for villages and sub-divisions. The summary of the compliance status is mentioned as follows:-

> *"(vii)* ***Improper segregation of waste has been reported from COVID-19 isolation wards, quarantine centres and quarantine homes. As per the provisions under Biomedical Waste Management Rules, 2016, Solid Waste Management Rules, 2016 and CPCB's COVID-19 guidelines, segregation of wastes is essential for effective management of wastes.***
>
> ***(viii) Mixing of general solid waste with biomedical waste would result in additional load on CBWTF incinerators, which are not designed for domestic solid waste.***
>
> ***(ix) It is also observed that non-segregation of waste also results in incineration of contaminated plastics, which otherwise should have been collected in red bag for sterilization and recycling.***
>
> ***(x) SPCBs/PCCs are required to follow-up with ULBs to ensure regular collection of solid waste and biomedical waste from isolation wards, home quarantine centres and homecare units. SPCBs/PCCs may also issue appropriate instructions to concerned departments in State to ensure compliance to CPCB guidelines."***

10. ***In view of the above, while several significant steps have been taken by CPCB and others, the gaps in compliance as mentioned need to be urgently bridged. Segregation of Covid-19 from general waste is a must, not only to avoid additional load on CBWTF incinerators but also in the interest of avoid further contamination adversely affecting public health. There has to be constant and regular monitoring by the Chief Secretaries, State PCBs/PCCs and Health Departments in the States/ UTs and by the High Level Task Team at Central level with further coordination by CPCB. We may also observe that where waste is not going to CBWTF incinerators, deep burial systems may be properly maintained as per protocols taking all due precautions to prevent harm to the environment.***

11. CPCB may take further initiatives which should include conducting of appropriate programme on Doordarshan, All India Radio and other media.

12. Let a further consolidated report be compiled by CPCB based on information collected from all the State PCBs/PCCs as 30.10.2020 and filed by 31.12.2020 *by e-mail at judicial-*

ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF."

6. We have separately dealt with the general issue of compliance of Bio-Medical Waste (Management & Handling) Rules, 2016 in all the States/UTs and issued directions of general nature today in *O.A. No. 710/2017, Shailesh Singh v. Sheela Hospital & Trauma Centre, Shahjahanpur & Ors. etc.* The scope of the present matter in addition to the general issue of compliance of BMW Rules is Covid related biomedical waste.

7. In pursuance of order dated 20.7.2020, a consolidated report dated 14.01.2021 has been filed by the CPCB as follows:-

"To ensure compliance to the above-mentioned order from Hon'ble Tribunal, CPCB vide letter 21.08.2020 forwarded said order to every State Pollution Control Boards/Pollution Control Committees and requested SPCBs/PCCs to submit compliance status report as per the format prepared by CPCB. A copy of afore-said CPCB letter dated 21.08.2020 is given at ***Annexure III****.*

3. COVID-19 Biomedical Waste Management Scenario:

As per the as per the information received from State Pollution Control Boards/Pollution Control Committees, the inventory of COVID19 waste generating sources, quantity of waste generated and number of facilities engaged in disposal is given below;

No of HCFs having Isolation wards	*:*	*3,095*
No of Quarantine Camps/Home Care Facilities	*:*	*2,768*
No. of sample collection center	*:*	*704*
No. of laboratories	*:*	*576*
Quantity of COVID19 BMW generated (Tons/day)	*:*	*146**
Quantity of regular BMW generated (Tons/day)	*:*	*615*
Number of CBWTFs engaged	*:*	*198*
Treatment capacity of Common incinerators (Tons/day)	*:*	*822*
No of States used deep burial pits	*:*	*12*

** Average quantity of COVID-19 BMW in December, 2020.*

4. Status of compliance by State Pollution Control Boards/Pollution Control Committees

*CPCB vide letter dated 17.09.2020 (given at **Annexure IV)** directed every SPCB/PCC to comply with Hon'ble NGT order dated 20.07.2020 and to ensure scientific disposal of COVID-19 biomedical waste along with following action points;*

(i) Proper segregation of COVID-19 biomedical waste from general waste.
(ii) Constant and regular monitoring by SPCBs/PCCs.
(iii) In case there in no CBWTF existing in the State/UT, ensure that deep burial system constructed / operated as per standards given in CPCB guidelines.

*Action taken report on COVID-19 biomedical waste management has been received from 32 SPCBs/PCCs, while State Boards of Arunachal Pradesh, Assam and Nagaland have not yet submitted compliance report. State-wise details on action taken on above action points is given at **Annexure V.***

5. Action taken by CPCB

5.1 Revision of Guidelines

The guidelines prepared by Central Pollution Control Board for "Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients" has been revised 4 times since Match 2020, looking at the requirements of COVID-19 Pandemic situation and learnings from national and international knowledge resources. Revision-4 of said guidelines was issued on 17.07.2020, with additional guidance on following aspects;

(i) Guidance for temporary Healthcare Facilities like railway coaches, COVID care centers etc.
(ii) Segregation of general waste and medical waste in COVID19 isolation wards.
(iii) Requirement of separate space for storage of COVID-19 biomedical waste temporarily in Healthcare Facility.
(iv) Safe disposal of used mask or gloves by general public other than COVID-19 positive patient at households.
(v) Disposal of PPEs at Commercial Places, Material Recovery Facilities for general waste and Crematorium/graveyards.

*A copy of CPCB Guidelines "Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients" : Revision 4 is given at **Annexure VI**.*

***5.2 Meeting of High Level Task Team**:*

Central Pollution Control Board has constituted a High Level Task Team (hereafter will be referred as HLTT) under Chairman, CPCB to review the COVID-19 waste management across the Country. 1st review meeting was held on 26.05.2020 with State Government Departments of Environment, Health and Urban Development, and SPCBs/PCCs to discuss management of COVID-19 waste in respective State / Union Territory. Task team has reviewed the status and emphasised the need

for complying with guidelines issued by CPCB. Action points decided by Task Team were circulated to State Government for ensuring scientific disposal of COVID-19 biomedical waste.

2nd meeting of High Level Task Team was held on 24.09.2020 wherein status of COVID-19 biomedical waste management was discussed with Chairman and Member Secretaries of SPCB and PCCs. Chairman, HLTT has reviewed state-wise implementation status, including following action points:

- *Use of CPCB tracking App. for COVID19 waste.*
- *Facilitate use of alternative incinerators for disposal of biomedical waste, where waste quantities beyond capacity of CBWTFs is generated.*
- *Compliance to CPCB guidelines.*
- *Preparation of District level model.*
- *Monitoring of Illegal Disposal of Biomedical waste*

Recommendations of HLTT along with State-wise action areas for improvement were forwarded to SPCBs/PCCs vide email dated 20.10.2020. Copy of the same given at ***Annexure VII.***

5.3 Implementation of COVID19BWM Tracking Application:

Within a period of 2 weeks CPCB has developed an online "Tracking App" for collection and disposal of COVID-19 biomedical waste, the App is called 'COVID19BWM'. The 1st version of the Mobile App has been introduced and a demonstration was given to SPCBs/PCCs on 06/05/2020. Thereafter, a separate web-portal has also been created to monitor data pertaining to Mobile Tracking App, being used by healthcare facilities, waste collectors and CBWTFs. Access to Web-portal is given to SPCBs/PCCs and CBWTFs.

Details on usage of Tracking App, in the Country is given below;

COVID-19 BMW generation (January, 2021) : 95 – 120 MT/Day

(Quantity of generation varied between 95 - 220TPD between June'19 – January'21)

No. of CBWTFs used for disposal of COVID-19 BMW : 198
No. of CBWTFs using COVID19 BWM App : 184

No. of generators using COVID19 BWM App : 8,159

5.4 Action taken by CPCB against defaulting Facilities:

CPCB vide letter dated 30.05.2020 informed every CBWTF operator in States and Union Territories to use the COVID19BWM Tracking App. Show-cause notices under Section 5 of E(P) Act, were issued to 206 CBWTFs for not using the Tracking App, vide letter dated 21.07.2020, asking to explain the reason why Environmental Compensation should not be imposed for failing to comply with CPB guidelines.

Further, based on the reply received from CBWTF operators, CPCB vide letter dated 29.09.2020 Issued directions under section 5 of Environment (Protection) Act, 1986 to 33 non-complying CBWTFs imposing Environmental Compensation of Rs. 3,000/- per day w.e.f. 30.06.2020. At present, 184 out of 198 facilities are using the Tracking App.

As per request of CBWTF Association of India, Chairman, CPCB held a meeting with Association to discuss compliance to afore-said CPCB directions, wherein Chairman has confirmed that action as per law will be taken for violation of provisions under BMWM Rules, 2016 and CPCB guidelines.

5.5 COVID19 BMW Generation and Adequacy of Treatment Facilities

(i) As per the information submitted by SPCBs/PCCs, 198 Common Biomedical Waste Treatment Facilities are providing service for collection, transportation, treatment and disposal of biomedical waste including COVID-19 waste.

(ii) As per the status reports submitted by SPCBs/PCC [as on December, 2020], the quantity of COVID waste in December month is about 146MT/day, apart from it, about 615 tons/day of regular biomedical waste is also generated. This would require incineration of about 456 MT/day out of 761 MT/day of total generation.

(iii) CBWTFs in the country have a cumulative incineration capacity of 840 tons/day, which is adequate to dispose incinerable fraction of COVID19 waste in present situation. However, in localised situations of high incidences of COVID19 disease, the nearby capacity of CBWTFs may not be adequate. Such situation prevailed at cities namely Pune, Chennai and Salem, where Maharashtra and Tamil Nadu SPCBs had allowed the nearby common hazardous waste incinerators at TSDFs for disposal of BMW. At present situation some quantity of excess COVID19 BMW is still being sent to common hazardous waste incinerators at Taloja, Mumbai and Gummidipundi, Chennai.

State wise details on COVID waste generation with treatment capacity utilization is given in table below:

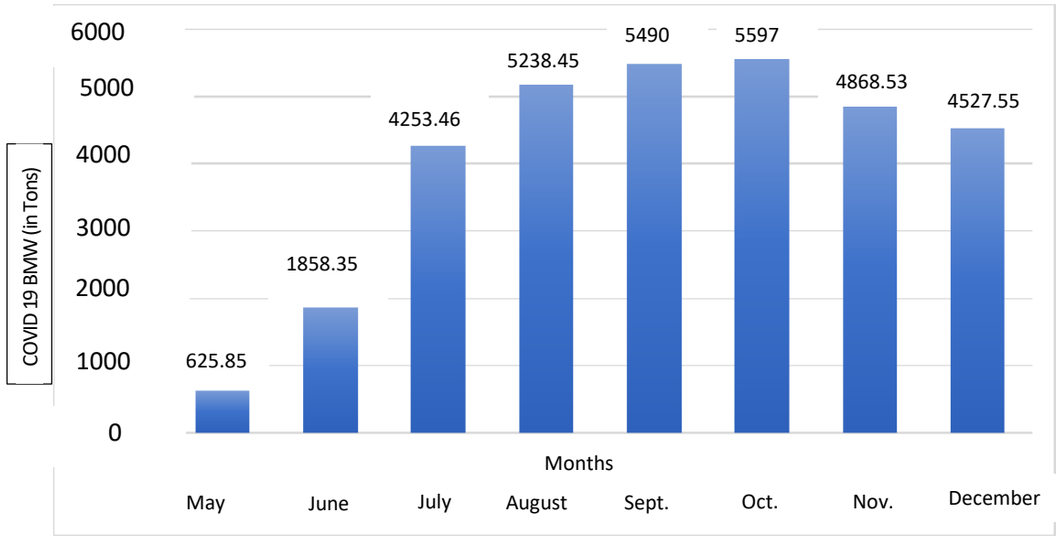
S.No	***Name of State***	***Non-COVID BMW generation (Tons/day)***	***COVID BMW generated (Tons/day)***	***Total Quantity of BMW***	***Number of CBWTFs engaged***
1	*Andaman and Nicobar Islands*	*0.67*	*0.014*	*0.2*	*no CBWTF*
2	*Andhra Pradesh*	*15.05*	*10.597*	*25.7*	*11*

3	*Arunachal Pradesh*	*0.40*	*0.112*	*1.0*	*no CBWTF*
4	*Assam*	*8.82*	*0.755*	*8.6*	*1*
5	*Bihar*	*34.81*	*0.752*	*35.6*	*4*
6	*Chandigarh*	*3.87*	*2.361*	*5.6*	*1*
7	*Chhattisgarh*	*3.74*	*0.31*	*16.4*	*2*
8	*Dadar Nagar Haveli*	*0.30*	*0.037*	*0.3*	*1*
9	*Delhi*	*28.79*	*10.365*	*37.2*	*2*
10	*Goa*	*1.49*	*0.174*	*2.0*	*no CBWTF*
11	*Gujarat*	*36.42*	*15.470*	*50.5*	*20*
12	*Haryana*	*14.81*	*6.772*	*21.0*	*11*
13	*Himachal Pradesh*	*3.41*	*1.556*	*4.2*	*2*
14	*Jammu and Kashmir*	*5.90*	*1.133*	*13.9*	*2*
15	*Jharkhand*	*7.26*	*0.375*	*4.9*	*2*
16	*Karnataka*	*77.55*	*7.033*	*72.6*	*25*
17	*Kerala*	*42.93*	*17.499*	*89.5*	*1*
18	*Lakshadweep*	*0.10*	*0.01*	*72.0*	*no CBWTF*
19	*Madhya Pradesh*	*17.85*	*8.048*	*23.8*	*14*
20	*Maharashtra*	*62.25*	*20.3*	*82.7*	*29*
21	*Manipur*	*0.95*	*0.299*	*1.4*	*1*
22	*Meghalaya*	*1.22*	*0.276*	*1.7*	*2*
23	*Mizoram*	*0.94*	*0.104*	*0.9*	*no CBWTF*
24	*Nagaland*	*0.63*	*0.074*	*0.2*	*no CBWTF*
25	*Odisha*	*17.99*	*4.051*	*18.7*	*4*
26	*Puducherry*	*5.90*	*0.552*	*4.9*	*3*
27	*Punjab*	*16.05*	*2.806*	*18.8*	*5*
28	*Rajasthan*	*20.69*	*3.417*	*25.7*	*8*
29	*Sikkim*	*0.48*	*0.079*	*0.5*	*no CBWTF*
30	*Tamil Nadu*	*58.27*	*8.104*	*55.3*	*9*
31	*Telengana*	*20.47*	*2.220*	*18.4*	*11*
32	*Tripura*	*1.40*	*0.015*	*1.4*	*1*
33	*Uttarakhand*	*3.81*	*2.460*	*6.6*	*2*
34	*Uttar Pradesh*	*52.50*	*8.918*	*61.4*	*18*
35	*West Bengal*	*41.57*	*9.002*	*43.1*	*6*

(iv) The present generation of 615 MT/day of regular biomedical waste may look adequate at national perspective, however, at individual State's level availability of CBWTFs may vary. It is evident from the fact that despite having CBWTFs, States namely Assam, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya, Odisha, Puducherry, Rajasthan, Tamil Nadu and Uttarakhand still use deep burial pits for disposal of BMW as the existing CBWTFs fail to cover entire State.

(v) With inclusion of COVID19 waste, States namely Assam, Bihar, Jammu & Kashmir, Kerala, Meghalaya, Odisha, and Uttarakhand do not have adequate incineration capacity with Common Biomedical Waste Treatment Facilities, hence respective State Boards should initiate for setting up of new CBWTFs.

(vi) Real-time generation of COVID19 waste is being tracked through Tracking App. The data from App indicates that, the quantity of waste is peaked during July – October, 2020 and thereafter, there is gradual reduction by December, 2020. Variations in quantity generated is attributed to decrease in number of COVID cases. A graph showing generation trend is given below:



Note: There may also be less number of users during May and June

5.6 Check-list for Monitoring compliance by CBWTFs:

Few incidents of illegal dumping of biomedical waste was reported during COVID Pandemic. In one of the cases, Hon'ble NGT took suo-moto cognizance of illegal disposal of biomedical waste by a CBWTF, in Original Application No. 110 of 2020. In its Order dated 20.07.2020, Hon'ble NGT directed CPCB to prepare separate guidelines to improve monitoring system for Common Biomedical Waste Treatment Facilities.

Accordingly, CPCB has prepared guidelines for monitoring operations as well as compliance of CBWTFs along with checklist for evaluating performance of CBWTFs by SPCBs/PCCs. These guidelines have been circulated to all SPCBs/PCCs with request to ensure close monitoring as per checklist. Copy of said guidelines is given at ***Annexure VIII****.*

5.7 Awareness Programs

CPCB has prepared awareness material in the form of infographics and shared the same at CPCB website. The content was also shared on CPCB's Social Media accounts. CPCB has also uploaded an awareness video prepared by UNIDO in collaboration with MoEF&CC, as per CPCB's guidelines.

In the month of September Senior Scientist from CPCB has given an interactive talk on Biomedical Waste Management during COVID-19 Pandemic on Vigyan Prasar, Department of Science & Technology. Said Programme was e-telecasted on their website. Another interactive session on "COVID-19 Medical Waste Management" was

also given on Doordarshan on 08th January, 2021 which shall be telecasted during month of January, 2021.

6. Conclusion & Remarks

- ***States like Andaman & Nicobar, Arunachal Pradesh, Daman & Diu, Goa, Lakshadweep, Mizoram, Nagaland, Sikkim and Tripura do not have Common Biomedical Waste Treatment Facility to treat and dispose the biomedical waste. Respective State Boards should initiate steps to set up Common Treatment Facilities so as to avoid usage of deep burial pits in long term.***

- ***State namely Assam, Bihar, Jammu & Kashmir, Kerala, Meghalaya, Odisha and Uttarakhand should examine the existing treatment capacity with Common Treatment Facilities and may facilitate setting up of more treatment facilities to cater biomedical waste generation including COVID19 waste.***

- ***As per the status reports received from SPCBs, guidelines issued by CPCB have been followed in every State/UT and the COVID19 biomedical waste is being treated & disposed of through Common Biomedical Waste Treatment Facilities and other authorized facilities.***

- ***Capacity of incinerators operated by Common Facilities across the Country has been adequate during the pandemic situation except in few cities namely Thane, Pune and Chennai. The existing capacity of CBWTFs in such cities needs to be upgraded.***

- ***The initial situation in cities like Delhi was improved after effective segregation of solid waste.***

- ***Real-time generation of COVID19 waste is being tracked effectively through CPVID19BMW tracking App developed by CPCB. Usage of this App may continue till prevalence of the pandemic situation.***

- ***18 out of 198 CBWTFs located in Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh States/UTs have not yet started using COVID19BWM Application for tracking of COVID-19 biomedical waste. SPCBs/PCCs may ensure compliance by those facilities also.***

- ***Localized high incidences of COVID19 disease, may lead to a situation where the capacity of CBWTFs in coverage area may***

become inadequate, an in such cases SPCBs and PCCs are required to act proactively and facilitate sending excess biomedical waste to nearby common hazardous waste incinerators at TSDFs or industrial incinerators.

- ***State Boards namely Andhra Pradesh, Bihar, Chandigarh, Delhi, Gujarat, Karnataka, Kerala, Madhya Pradesh, Punjab, Tamil Nadu, Telangana and Uttar Pradesh confirmed that deep burials are not being used for disposal of COVID-19 biomedical waste.***

- ***All SPCBs/PCCs may continue to monitor COVID19 waste closely till the end of pandemic situation."***

8. In view of above, further follow up action may be taken by all the States and UTs, which may be further monitored by the CPCB. The Chief Secretaries of all the States/UTs may, while reviewing the COVID situation, also review the status of compliance of the COVID related Bio-medical Waste Management at least once in every month, till the situation so requires.

9. We have perused the affidavit filed on behalf of the MoEF&CC on 13.01.2021 which is in substance based on the report of the CPCB.

10. The Oversight Committee for environmental issues in the State of UP, set up by this Tribunal headed by Justice SVS Rathore, a former Judge of Allahabad High Court at Lucknow, has also filed its report on 08.01.2021 about the compliance status in the State of UP. The recommendations in the report are :-

"VII. RECOMMENDATIONS BY THE OVERSIGHT COMMITTEE

In view of the above, we recommend as follows:

1. *Although the directions have been issued by UPPCB for registration of all waste generators in COVID19 BMW mobile application developed by CPCB to ensure proper collection, transportation, treatment and disposal of BMW/Covid-19 waste. The SPCB may be directed to ensure the registration of all health care facilities/institutions including quarantine*

centers and pathological labs on the above portal and proper training must also be provided to the concerned persons regarding the uploading of COVID-19 waste generated by them.

2. *As far as the implementation of barcoding for colored bags and containers containing BMW is concerned, a pilot scale project has been taken up in Lucknow district. For scaling up of the project to the entire State, the bid has been finalized and the contract has been provided to service provider. The Health Department may be directed to complete the work for implementation of barcoding and tracking of vehicles through GPS within a month positively.*

3. *In compliance with the Biomedical Waste Management Rules, 2016, every biomedical waste management facility must obtain authorization from State Pollution Control Board. At present, there are 25,411 (bedded: 13,670; Non-bedded: 11,741) Health care facilities. Of these, 21,531 (bedded: 11,434; Non-bedded: 10,097) have been authorized by the State Pollution Control Board and notice has been sent to all unauthorized HCFs. The SPCB may be directed to inspect these facilities immediately and issue authorizations provided they are fully compliant. The responsibility for non-compliance should be fixed.*

4. *With regard to the implementation of Biomedical Waste Management Rule, 2016, installation of ETP is mandatory for above 10-bedded hospitals. It was informed that due to some litigation the work of ETP installation has stopped. UP Jal Nigam may be directed to resolve the issue and expedite the process of ETP construction and complete the work within the specified time duration.*

5. *In compliance with BMW Rules 2016, disposal of BMW by deep burial is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility. The Health Department/concerned department may be directed to follow the provisions and guidelines issued by CPCB from time to time and standards mentioned in Schedule III of BMW Rules 2016 for such facility.*

6. *In compliance with the Biomedical Waste Management Rules, 2016, no information is being provided by the AYUSH hospitals. Chief Secretary, U.P. may be directed to monitor the progress with Principal Secretary of Medical Education and AYUSH Department. Since Health Department is the nodal department, both Medical Education and AYUSH Department should send their information to Health Department where it can be compiled for further communication.*

7. *The CPCB may be directed to lay down standard for new technologies for treatment and disposal of biomedical waste and prescribe specifications for treatment and disposal of biomedical wastes. Further, the CPCB may also be directed to undertake or support research regarding biomedical waste.*

8. *The SPCB may be directed to grant and renewal, suspension or refusal cancellation or of authorisation under Rule 7, 8 and 10 of BMW Rules, 2016. Further, SPCB may also be directed to regularly monitor the compliance of various provisions and conditions of authorization.*

9. *State PCB may be directed to ensure the implementation of Biomedical Waste Management Rules 2016 and recommendations of the Advisory Committee in all health care facilities.*

10. *As far as liquid waste is concerned, steps should be taken to disinfect the treated liquid waste before its reuse for irrigation or similar other purposes.*

11. *The instances of improper disposal of PPE kits and other such materials highlight the loophole in the management of the BMW waste. It must be ensured that such incidents should not happen. All stakeholders dealing with the collection, transportation and treatment of BMW waste must be made accountable for the slightest negligence in the management of COVID-19 waste.*

12. *All hospital housekeepers, sanitation workers and other staff dealing with handling and management of BMW/COVID-19 waste shall be provided with regular free health checkups and treatment if any required from the respective HCFs where they are working.*

13. *The SOPs for home quarantine have been prepared by UPPCB/UDD, while the local public is unaware about the handling and disposal of the generated COVID waste. The UDD/UPPCB may be directed to issue a service helpline number for public for COVID-19 waste related issues. Further, the UDD may also be directed to ensure door to door collection facility of COVID waste based on Ghaziabad model.*

14. *For non-compliance with BMW Rules, 2016, notices have been issued against 3880 HCFs. Prosecutions has been filed against 04 HCFs and 03 CBWTFs under Section 15 of EPA, 1986, and show cause notices have been issued against 27 HCFs under EPA, 1986. The State PCB may be directed to initiate action under the law against the noncompliant units.*

15. *EC of Rs. 7.60 Cr and Rs. 1.43 Cr have been imposed against 141 HCFs and 08 CBWTFs, respectively. The imposed penalty has yet not been realized. State PCB may be directed to take necessary action and ensure realization of EC as per the prescribed procedure.*

16. *The meetings of the State Advisory Committee and District Advisory Committee should take place regularly to monitor and ensure compliance of the BMW Rules, 2016 in general and COVID-19 guidelines in particular.*

17. *All the HCFs where the collection sheds are under construction shall ensure that no waste should be stored at their premises. They should regularly hand over their waste to the service provider for proper treatment and disposal on day to day basis.*

18. The instances of improper disposal of PPE kits, gloves, face masks and face shields used by general public is commonly reported. An important aspect in handling COVID-19 waste is making public aware about the procedure to handle and dispose such wastes. SPCB/UDD may be directed to launch IEC campaigns through visual media, print media, spot hoardings billboards, pamphlets and newspapers to educate people about the management and disposal of such wastes.

19. The process of conversion of COVID waste into clean energy i.e. hydrogen fuel using sunlight by the technique of photo reforming based on Welsh Government model may also be explored in India.

20. The conversion of COVID-19 related biomedical wastes such as PPE kits and face masks into construction bricks as per the approach undertaken by Mr. Binish Desai, The Recycle Man of India. Other industries or waste management startups may also be promoted to convert biomedical/COVID-19 waste into eco-friendly construction material.

21. The approach for conversion of COVID-19 related plastic waste into construction of bituminous road and partial replacement of cement in concrete may also be explored and researched."

11. The report is accepted and further action may be taken in terms of the recommendations by the concerned authorities in the State of UP, which may be monitored by the Chief Secretary, UP. Apart from the action to be taken in the State of UP, all the States/UTs may take further follow up action in terms of para 8 above which may be reviewed by the Chief Secretaries of all the States/UTs and also monitored by the CPCB at the national level.

The application stands disposed of accordingly.

A copy of this order be forwarded to the Chief Secretaries of all the States/UTs and the CPCB by e-mail for compliance.

Adarsh Kumar Goel, CP

S.K. Singh, JM

Dr. Nagin Nanda, EM

January 18, 2021
Original Application No. 72/2020
SN