F. No. HSM-11/3/2022-HSM
Government of India
Ministry of Environment, Forest & Climate Change
Hazardous Substances Management Division (HSMD)

Indira Paryavaran Bhawan
Jorbagh Road, Aliganj
New Delhi-110003
Date: 05.03.2024

To,
The Registrar General,
Principal Bench
National green tribunal
Coparnicus Marg, New Delhi-110001

Subject: Compliance Status Report in M.A. No. 98 of 2022 in O.A. No. 180/2021 Titled as Mukul Kumar Vs. State of Uttar Pradesh & Ors.

Sir,

In compliance to the order dated 23.01.2023 passed by the Hon'ble National Green Tribunal in M.A. no. 98 of 2022 in O.A. no. 180/2021 titled as Mukul Kumar vs. State of Uttar Pradesh & Ors., The Hon'ble Tribunal directed that CMC may continue monitoring and file further compliance status report, Hence, a compliance status report is hereby attached with a request to put up before the Hon'ble National Green Tribunal for consideration.

This issues with the approval of the Competent Authority.

Enclosure: As Above

Yours Sincerely,
DINESH RUNIWAL
DINESH RUNIWAL 2024.03.05 13:56:05 +05'30'
(Dinesh Runiwal)
Scientist 'E'

COMPLIANCE STATUS REPORT IN M.A. NO. 98 F 2022 IN O.A. NO. 180/2021 TITLED AS MUKUL KUMAR VS. STATE OF UTTAR PRADESH & ORS.

1.0 Background:

The matter relates to violation of BMW Rules, 2016 & CPCB guidelines by Respondent No. 7 i.e., SP Green Light Environment Waste Management LLP (SPGLEWML) Bareilly, U.P. in operating a CBWTF facility situated at Shahjahanpur, U.P. while treating, handling and disposing of waste generated during treatment/diagnosis/quarantine of Covid-19 patients. O.A. no. 180/2021 was disposed of vide order dated 07.01.2022 wherein the Hon'ble Tribunal had directed CMC to meet urgently within two weeks to consider the above state of affairs and prepare an effective monitoring strategy to ensure that there are adequate number of Facilities, with appropriate infrastructure and their functioning is reviewed on regular basis at District and State level. It was also directed by the Hon'ble NGT to compile a national report as on 30.04.2022 based on reports received from the State Level Committees who may give their reports after compiling reports from the districts which may be uploaded on its website.

In compliance of the order dated 07.01.2022, MoEFCC submitted a status report dated 13.09.2022 before this Hon'ble Tribunal.

2.0 Further Action Taken

The ministry vide D.O. letter dated 14.11.2022 *(Copy attached)* has requested CPCB to provide status report on the actions points identified during stakeholder review meeting. CPCB vide letter dated 28.02.2023 submitted the status report *(Copy Attached)* on the issues as presented below:

- Installation of OCEMS in CBWTFs - The previous review by CMC in May 2022 indicated that 158 CBWTFs had installed OCEMS, which increased to 201 CBWTFs pursuant to CMC's intervention.
- Fee structure of CBWTFs - As per the previous submissions, the fee structure of CBWTFs is regulated by an Advisory Committee, chaired by the Secretary of State Health Dept. On the insistence of CMC to bring uniformity in the process, the CPCB took up the matter with States/ UTs to resolve State-specific procedures. The CPCB also mentioned having a consultation in March-2023; however, further details on whether it was convened and decisions taken therein are not shared.

- Clarity on applicable liquid effluent standards - The CPCB issued a clarification to all the State PCBs/ PCCs about the applicability of liquid effluent standards under the provisions of BMWM Rules, 2016 to avoid ambiguity.

- Rollout of a web portal for BMW tracking and Annual reporting - CPCB has informed that work has been awarded to M/s Atishay Limited, Bhopal, Madhya Pradesh to develop a portal by October 2023.

- Standard Monitoring Framework for Inspection of HCFs and CBWTFs - A framework comprising standard procedures has been circulated to all State PCBs/ UT PCCs to monitor the healthcare facilities and CBWTFs.

- Standard guidelines for gap analysis study - CPCB has developed a format for carrying out gap analysis and the same is issued under CPCB guidelines for CBWTFs. On the aspect of study by SPCBs/PCCs, CPCB has informed that requisite information is sought, and the same shall be taken up during the consultation proposed in March-2023.

- Revision of implementation guidelines for BMWM Rules, 2016 - CPCB convened a meeting with stakeholders on 14.07.2022 and has been receiving inputs from stakeholders. The revision of guidelines is under process.

- Examination and validation of new treatment technology - CPCB had undertaken a site visit in December-2022 to examine the adequacy of 'STERILWAVE' Technology. The Expert Committee comprised of Dr. T K Joshi (BMW Expert), Dr. Sushant Wath, Pr. Scientist NEERI and CPCB officials. Monitoring and sampling were also conducted. The results are awaited.

It was observed that out of the various issues deliberated in the past meetings, the following aspects need to be further delved into, apart from stock-taking and inviting comments from other stakeholders (SPCBs/ State Govts. /CBWTF Associations, etc.):

- Development of Web portal for BMW tracking and Annual Reporting

- Revision of BMWM Rules, 2016 implementation guidelines

- Uniformity of Fee Structure of CBWTFs

- Proposal of New BMW treatment technology

- Status of coordination on Gap-analysis studies carried out by States/ UTs for the establishment of CBWTFs

3.0 Central Monitoring Committee Meeting

The 3rd meeting of Central Monitoring Committee (CMC) to review the implementation of Bio-medical Waste Management Rules,2016 was conducted under the chairmanship of Shri Naresh Pal Gangwar, Additional Secretary on 18.07.2023 at 11:00 AM. The meeting was held in Hybrid mode. Wherein CPCB was asked to present the status of BMWM Rules 2016 implementation in the country with a focus on the above-mentioned issues.

It is stated that after detailed deliberations among the members, following action points emerged from the discussion for which CPCB was required to take (i) Steps for the development of the portal by 30th November 2023, and once the portal becomes fully functional, CPCB shall submit a proposal to MoEFCC to amend the BMWM Rules, 2016 by duly aligning it to the waste tracking and online annual reporting provisions (ii) To submit Expert Committee Report on new BMW technology (STERILWAVE), along with its recommendations. **(**iii) To develop guidelines on 'Gap Analysis studies for CBWTF establishment' in consultation with all stakeholders, within 1 month of the issue of these Minutes of Meeting and future gap analysis to be done accordingly. Results of gap analysis to be considered for giving permission to new facilities. (iv) To develop the implementation guidelines by 30th November 2023 and align the guidance developed on Gap Analysis with the comprehensive guidelines prepared on BMWM Rules, 2016 implementation (v) To prepare a status update on CBWTF fee structures fixed by various States/ UTs, and based on its examination devise guidance for arriving at a uniform basis of fee structure. (vi) examine, clarify and issue a standardized procedure on the aspect of the reuse of body fluids (in line with the existing provisions) by biotechnology, R&D institutes, and cancer hospitals.

It was further deliberated that Healthcare Facilities to implement Bar code generation to track BMW by 30th November, 2023; Stakeholders (CII, IMA, and others) are requested to submit their representations to CPCB to enable them to take up the examination of issues raised in the meeting and make recommendations to MoEFCC, including the need for amendments in the BMWM Rules, 2016; CBWTF Association to make a representation to CPCB on the issue of ZLD ETPs; Submissions w.r.t. development of SOPs for AYUSH clinics and hospitals, matters related to inclusion in BMWM Rules, 2016 implementation guidelines, and representations on gap analysis studies may be submitted to CPCB within 20 days of the issue of these 'Minutes of Meeting.

(Copy of Record of Discussion of the meeting of Central Monitoring Committee held on 18.07.2023 enclosed) Following points has been decided in the meeting and accordingly CPCB vide letter dated 21.11.2023 submitted the status of action taken *(Copy Attached)* on the decision of Central Monitoring Committee.

S.No.	Issues deliberated in Meeting	Status given by CPCB

1.	Development of web portal for BMW tracking and annual reporting	• CPCB has taken up the project "Implementation of centralized barcode system and tracking of Bio-medical Waste". • CPCB has constituted a working group for implementation of centralized bar code system. • Further, around 200 CBWTFs are registered with centralized Bar Code System. • Task regarding fetching of information of live tracking of biomedical waste through API is under process. • CPCB also conducting zone-wise meeting through video conferencing for all CPCB operators during 31st October-3rd November, 2023 to expedite the process of integration of their bar code system to centralized bar code system. • Project is expected to be completed by 31st December, 2023.
2.	Revision of BMWM Rules, 2016 implementation guidelines (Timeline Given-3 Months)	• Guidelines have been made and circulated to all SPCB/PCCs vide letter dated 12.10.2023 or conduction gap analysis. Reply of SPCB/PCCs is still awaited. • Further, CPCB may revise the guidelines based on the observation of gap analysis conducted by SPCBs/PCCs.
3.	Uniformity of Fee Structure	• CPCB is in process of devising a uniform basis for fixing the CBWTFs Charges. • CPCB has also requested SPCBs/PCCs vide letter dated 27.10.2023 to provide information regarding cost charged from the health facilities by CBWTFs.
4.	Proposal of New BMW treatment technology	• The proposal of technology "STERILEWAVE" based on the sterilization and shredding for treatment of biomedical waste received from M/s Meldom Traders was examined and an Expert Group was constituted for assessment of the said technology. • CPCB vide letter dated 09.11.2023 has shared the report with MoEFCC.
5.	Clarification and issue a standardized procedure on the aspect of the reuse of body fluids (in line with the existing provisions) by biotechnology, R&D institutes, and cancer hospitals	• CPCB has already prepared "Guidelines for Handling of Biomedical Waste for Utilization". • CPCB vide letter dated 15.09.2020 and 07.10.2021 has requested all SPCBs/PCCs to encourage vendors/firms for utilization of biomedical waste in BMW Rules, 2016 and CPCB guidelines.
6.	Submissions by States	----
7.	Submissions by Stakeholders	• Vide DO letter dated 22-08-2023 *(Copy attached),* the Secretary (AYUSH) has highlighted the need for specific

		guidelines for the management of waste generated from the AYUSH Hospitals and clinics in view of the special procedures/ practices undertaken there. Secretary (AYUSH) has also sought a concurrence to engage with the stakeholders and submit its inputs within a month. • Accordingly, vide letter dated 4th September, 2023 (*Copy attached)* MoEFCC has requested M/o Ayush to keep a representative of CPCB in the working group or committee to ensure that the inputs are aligned to the BMWM Rules, 2016.

3.0 Further Action-Plan

MoEFCC vide letter dated 04.03.2024 *(Copy attached)* has sought information from all the SPCBs and PCC regarding (i) Constitution of institutions for monitoring the implementation of Bio-medical Waste Rules, 2016 (ii) Factual Information on requirement of Additional CBMWTFs (iii) Remedial Actions taken by States,

The Compilation of this report is to be presented for further discussion and deliberations by the Central Monitoring Committee to review the implementation of and compliance of BMWM rules across the country.

4.0 Submission on follow-up action

It is respectfully submitted that this Hon'ble Tribunal may be pleased to accept this Compliance Status Report. The Ministry shall further convene CMC meeting and coordinate with remaining States and CPCB and file additional information made available to it.

DINESH RUNIWAL
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नरेश पाल गंगवार, आई.ए.एस
Naresh Pal Gangwar, IAS

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सत्यमेव जयते

अपर सचिव
भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
ADDITIONAL SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST
AND CLIMATE CHANGE

D.O. No. 11/3/2022-HSM

Dated: 14th November, 2022

Respected Sir,

I would like to highlight some of the issues referred by MoEFCC and follow-up measures identified during the review meeting on Bio medical waste management with stakeholders.

2. In the meetings of the Central Monitoring Committee (CMC) held under my chairmanship on 02-02-2022 and 09-05-2022 wherein stakeholders have sought clarifications and raised specific issues/ challenges faced by them in implementation of BMWM Rules, 2016. The stakeholders had requested the MoEFCC and CPCB to assist/ support them to improve overall implementation of rules. The copies of the 'Minutes of Meeting' of the CMC are attached for ready reference.

3. The follow-up actions identified during stakeholder review and matters referred separately to CPCB are mentioned below:

- Coordinate with Common Bio-medical Waste Treatment Facility (CBWTF) Association and ensure installation of OECMs and its linkage with CPCB/ SPCB/ PCC server
- Arranging a stakeholder consultation to address common issues arising in BMW management and prepare a guidance framework on fee structure of CBWTFs
- Issue fresh consolidated instructions clearly mentioning the mandated/ prescribed standards for liquid effluent management for each category of Healthcare Facilities/ CBWTFs
- Expediting the rollout of a web-portal for bar-coding of waste for tracking as well as annual reporting purpose, in line with the EoDB initiative
- Submission of Standard Monitoring Framework
- Development of Standard guidelines for Gap-Analysis for all States/ UTs
- Revision of BMWM Rules, 2016 implementation guidelines
- Examination and validation of new treatment technology for BMW

4. In this regard, I would like to highlight here that while CPCB has already taken action on some of the above-mentioned points, there have been slow progress in certain aspects. Hence, it is requested that you may personally intervene in the matter so that the identified actions are completed, at the earliest.

Regards,

Yours Sincerely,

(Naresh Pal Gangwar) 14.11.2022

Shri Tanmay Kumar
Additional Secretary and Chairman
Central Pollution Control Board,
Parivesh Bhawan, East Arjun Nagar,
Shahdara, Delhi-110032.

पृथ्वी विंग, पांचवा तल, कमरा नं. 505, इंदिरा पर्यावरण भवन, जोर बाग रोड़,
नई दिल्ली–110003, फोनः (011) 20819247, ई–मेलःasnpg.mefcc@gov.in
Prithvi Wing, 5th Floor, Room No. 505, Indira Paryavaran Bhawan, Jor Bagh Road,
New Delhi-110003, Tel.: (011) 20819247, E-mail: asnpg.mefcc@gov.in

'Records of Discussion' of the meeting of the Central Monitoring Committee re-constituted to review the implementation of the Biomedical Waste Management Rules, 2016 on 02.02.2022 at 11:00 am.

A meeting of the re-constituted Central Monitoring Committee (CMC) to review the implementation of Bio Medical Waste Management Rules, 2016 (BMWM Rules, 2016) was held on 02.02.2022 at 11AM through video-conferencing. The meeting was chaired by Shri Naresh Pal Gangwar, Additional Secretary, MoEFCC. The meeting was attended by officials of Central Ministries (M/o HFW and M/o AYUSH), Regulatory Agencies (CPCB and SPCBs), State Health Deptts, Local Authorities, Subject experts, Stakeholders like IMA, ICMR, CBWTF Association, invited members and officials of HSM Division, MoEFCC. The list of participants is annexed.

2. At the outset, the Director(HSMD) made introductory remarks and welcomed the Chair & all participants. The participants were apprised that the CMC meets annually and was due to meet this year, however, convening of this meeting is also in compliance with the order of Hon'ble NGT in the matter of Original Application No. 180/2021 (Mukul Kumar Versus State of Uttar Pradesh & Ors.). The Hon'ble tribunal has asked the CMC to review the implementation of BMWM Rules, 2016 in the country and convene a meeting with all State Advisory Bodies also. Thereafter, CPCB was requested to make a presentation on the status of biomedical waste management in the country.

3. The CPCB representative presented the brief background of the Rules and mechanism of implementation along with the roles and responsibilities of relevant stakeholders in biomedical waste management framework. It was apprised that CPCB regularly coordinates with SPCBs/ PCCs in resolution of issues related to BMW management and gathering annual information. However, several states, despite regular communication, do not submit their report in time. As per the information submitted by SPCBs/ PCCs, it was observed that total 656 tonnes/day of biomedical waste was generated in the country, out of which 590 tonnes/day was treated. The CPCB also presented information on bedded and non-bedded health care facilities (HCFs), CBWTF operators (operational as well as under installation), non-compliance/ violations observed during inspections, show cause notices issued, environmental compensation levied on operators and HCFs etc.

3a. CPCB also highlighted gaps in implementation of BMWM Rules, 2016 viz. operation of unauthorized HCFs in the country, non-implementation of Bar code system by States, non-installation of OCEMS and absence of data sharing by CBWTFs and captive incinerators, compliance of environmental standards by HCFs and waste incinerators, non-compliance of CPCB guidelines etc. The CMC was apprised that CPCB has issued guidelines for implementation of BMWM Rules, 2016, including addressing the BMW generated during COVID-19 pandemic. The following actions have also been taken for management of BMW:

- Development of a mobile application - COVID19BWM, to capture the data of related to COVID-19 BMW generation and its treatment by CBWTFs
- Hosting COVID-19 waste management related awareness material on its website including posters, do's & don't s, video clippings, guidelines, data on waste management etc.
- Interaction with stakeholders for implementing centralized barcode system for reporting and tracking of BMW as per the orders from Hon'ble Supreme Court and preparation of RFP document
- Examination of new technology for BMW management based on non-burn approach and allowing one pilot installation for trail run and assessing technical adequacy
- Imposing Environmental Compensation Charges against defaulting facilities for violations observed during random compliance verification.

4. The CPCB representative submitted that State Authorities, including SPCBs/ PCCs, may undertake the following towards improving the implementation of BMWM Rules, 2016:

- Preparation of State inventory of HCFs in targeted manner and according them authorization, with a view to bring them under the ambit of Rules and regulate.
- Regular collection of domestic hazardous waste, including identified domestic BMW, by ULBs and Municipalities as per Solid Waste Management Rules, 2016 and its channelization to CBWTFs.
- Assessment of the adequacy of deep burial pits *(used by the HCFs)* by concerned SPCB/ PCC, restrict them in rural or remote areas and verifying their compliance to standards prescribed under BMWM Rules, 2016.
- Adequacy assessment of CBWTFs treatment capacities vis-a-vis BMW

generation through gap-analysis studies and regulate utilization of captive treatment facilities in HCFs.

- Proper treatment of recyclable waste (*collected by CBWTFs*) and its handover to registered recyclers.
- Regular inspection of CBWTFs and HCFs to ensure compliance to prescribed standards.
- Analyze OCEMS data for self-regulation and policy making

5. The Chair sought data on installation of OCEMS in CBWTFs and inquired whether any action has been taken against non-compliant units. The CPCB informed that there were 208 operational CBWTFs in the country, out of which 196 have installed OCEMS in their facility. The remaining units have been issued notices by CPCB. The Chair further inquired about the status of compliance of captive facilities and also whether all HCFs are mapped to CBWTFs. The CPCB informed that all HCFs are required to be connected to CBWTFs, if operational in 75kms. However, due to lack of an inventory, the States Authorities do not provide. It was also highlighted that even after installation of OCEMS, CBWTFs face technical issues in high-end transmission of data to CPCB and SPCB portals. **The Chair noted that CBWTFs are key stakeholders and can play a role in not only sensitization of OCEMS non-compliant CBWTFs but they can also support SPCBs/ State Health authorities in mapping HCFs to CBWTFs, as serves their business interest.**

6. Thereafter, States were invited to presented their status and highlight issues. The representative of Haryana State Pollution Control Board (HSPCB) informed there are total 6320 HCFs in the State, out of which 6163 are authorized and 157 are unauthorized. The BMW generation in the states is 19.2TPD (approx.), which is disposed through 11 CBWTFs. The CBWTFs are monitored and inspected on quarterly basis. HSPCB representative further informed that in compliance to the Rule 11 of BMW Rules, 2016, State Advisory Monitoring Committee (SAMC) and District Level Monitoring Committee (DLMC) were constituted in 2018 and so far, 6 meetings of SAMC have been convened. It was informed that PGIMER, Chandigarh has been engaged to conduct study on gap analysis of existing CBWTFs in Haryana. The HSPCB representative further informed that several steps have been taken to manage BMW such as use of CPCB app, circulation of awareness materials, conducting training programme etc.

7. The MS, HSPCB mentioned that there are certain issues that need to be addressed like setting-up of new CBWTFs, fees charged by CBWTFs & its differential structure, grant of consent/ authorization to HCFs operating in non-confirming areas and implementation of BMW bar-coding tracking & reporting of waste. It was mentioned that Haryana has banned issuing licenses for CBWTFs since 2017. It was emphasized that differential fee structure be introduced keeping in mind the fact that the purpose of Govt. Dispensaries *vis-a-vis* private clinics is different. The Govt. Dispensaries/ Institutes/ Animal Husbandry centers are not profit-oriented; however, their purpose is to impart healthcare services to the masses, remote places, rural areas etc. Hence, they bear additional costs of BMW authorization and payment of fee to CBWTF operators, which act as a deterrent for citizen-centric services. To resolve these issues, it was suggested that a set of guidelines or framework be prepared on 'Fee structure' and circulated to all stakeholders wherein apart from size of facility, no. of beds etc. enough emphasis be given to purpose of establishment and viability of non-profit oriented entities. It was also suggested that a National level and uniform system of barcoding be framed and adopted.

8. Thereafter, the representative of Karnataka Pollution Control Board (KPCB) presented the status of biomedical waste management. It was informed that there are 41,709 HCFs (bedded and non-bedded) in the State from which a total of 82,604 kg/d of BMW is generated. It was informed that a total of 18,956 HCFs had applied for authorization, of which 18302 were granted authorization while 81 were rejected. The remaining 287 applications are still under consideration for a decision. There are 25 CBWTFs operational in the state. The COVID-19 waste treated and disposed of in the state was 37805 kg/d. A total of 26 Show Cause Notices were issued to CBWTFs on violations of BMWM Rules, 2016. About 198 workshops/ training programs were in one year. The KPCB representative also sought clarification on procedure to conduct gap-analysis and requested that a guidelines or SOP for the same would be handy for all SPCBs/ PCCs.

9. Thereafter, representative of UPPCB presented the status of BMW management in the state and informed that there are 31474 HCFs functional in the state, which generate 64,038kg/day of BMW. A total of 22 CBWTFs with cumulative incinerable capacity of 94.4MT/day is operational in the state that

were engaged in the treatment COVID-19 BMW also. In compliance of Rule 11 of BMW rules, five meetings of SAMC have been convened since 2019. The implementation of barcode and GPS system in CBWTFs was also mentioned. It was also mentioned that UPPCB imposed Environmental compensation and issued notices to unauthorized and non-compliant CBWTFs as well as HCFs. UPPCB made following suggestions:

- Criteria of 75 km radius requires review as it hampers commercial interest of the CBWTFs and lead to litigation's
- Deep Burial for disposal of waste should be allowed for places where very less waste is generated like Ayush and Veterinary centers
- The need of CBWTF agreement from Medical Consultants/ Physicians need to be reviewed

10. The Gujarat PCB representative apprised the CMC that are 32990 HCFs operational in the State. It was informed that 20 CBWTFs are operational with total incineration and autoclave capacity are 87,600Kg/Day and 37,800 Kg/day respectively. It was informed that GPCB coordinates with CBWTFs and ULBs for compliance of CPCB Guidelines and undertakes inspection for safe, effective management, treatment, and disposal of COVID 19 waste. It was further mentioned that there about 248 transportation vehicles used for collection of BMW, which are owned by CBWTFs operators and equipped with GPS. The GPCB is reportedly undertaking awareness and training programmes on BMW management for HCFs and CBWTF operators.

11. The ICMR representative supported the initiatives of GPCB and mentioned that awareness creation and training programmes are key to BMW management at all levels. It was also mentioned that systematic training should be provided at all levels i.e. from the BMW generation source to waste handlers, transporters and point of end disposal.

12. The nominated subject expert representing IMA, Prof. JA Jayalal emphasized on adoption of bar-coding of BMW as an enabling activity towards achieving digital health mission. It was requested that MoEFCC or MoHFW in coordination CPCB, may like to develop a National portal for uniform implementation of waste tracking that can also serve the purpose of reporting. It was also suggested that rather than HCFs reporting data on portal, the SPCBs be entrusted the task. The Dir(HSMD), however, highlighted that being the point of primary data generation, the HCFs are crucial for data gathering

and reporting. Further, to ease the reporting process, CPCB is in the process of developing a portal for waste tracking and reporting. The IMA representative also highlighted the aspect of liquid effluent criteria in respect of small HCFs and clinics.

13. Another Expert memeber, Dr. Ritu Gupta, AIIMS mentioned that waste generation in hospital laboratories generally remains low; however, they are required to tie-up and handover the waste to CBWTFs for remaining operationally compliant. It was mentioned that the fee charged by the CBWTFs appears to be on higher side as compared to the waste treated. Hence, there is a need to prepare Guidelines to regulate the issue. It was also suggested that every SPCB/ PCC should organize a training programme for healthcare workers and nursing staff. Further, BMW may be introduced as a part of academics specifically for health workers and nursing staff.

14. The representative of CBWTF Association of India added that member CBWTFs have started self-monitoring and data sharing with CPCB and SPCBs on regular basis. Further, in case of non-compliant CBWTFs, the work is already going on to install OCEMs along with putting in place a system for transmission of data. The representative submitted that, if considered appropriate, CPCB may form a technical committee to review the OCEMS implementation every three months.

15. After detailed deliberations, the Chair, in consultation with CMC members identified the following issues for proper BMW management:

- CPCB shall coordinate with CBWTF Association and ensure installation of OECMs and its linkage with CPCB/ SPCB/ PCC server, at all CBWTFs in a targeted manner, which would be physically verified through field inspections.
- SPCBs shall periodically monitor the BMW management system established in HCFs and CBWTFs and impose environmental compensation on defaulters.
- CPCB may arrange a stakeholder consultation to address common issues arising in BMW management and prepare a guidance framework on fee structure of CBWTFs to support stakeholders.
- To address the ambiguities arising among HCFs/ CBWTFs on liquid effluent management, CPCB may like to issue fresh consolidated instructions clearly mentioning the mandated/ prescribed standards for

each category of HCF/ CBWTFs.

- CPCB may expedite the formal rollout of a web-portal for bar-coding of waste for tracking purpose as well as annual reporting purpose, in line with the EoDB initiative
- The state Governments, CBCB/SPCBS and State Advisory Committees must ensure that BMWM Rules, 2016 and CPCB guidelines are strictly followed in letter and spirit and seek clarification on issues of conflict, if any, from CPCB and MoEFCC. The rules also need to be followed while giving clearance/permission to new facilities.
- The State Environment Impact Assessment Authorities should also ensure that BMW rules are complied with while giving clearance to new facilities.
- The State Health Deptts. and SPCB/ PCC may ensure training of staff and workers BMW management at all levels.

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Annexure I

List of Participants

MoEF&CC

1. Shri Naresh Pal Gangwar, Additional Secretary
2. Shri Ved Prakash Mishra, Director
3. Shri Dinesh Runiwal, Scientist E
4. Ms. Shivani Mudgal, Consultant
5. Ms. Apoorva Guar, Consultant
6. Ms. Aiyshwarya Laxmi, Intern

CPCB

7. Dr. Prashant Gargava, Member Secretary
8. Shri V P Yadav, Additional Director
9. Ms. Youthika Puri

Representative of Ministries/Departments

10. Dr Bhima Devi, Ministry of Ayush
11. Dr Nabendu Chatterjee, ICMR

Representative of State Pollution Control Boards

12. Shri V D Radhakolia, GPCB
13. Shri Satinder Pal, SEE, HSPCB
14. Member Secretary, UPPCB
15. Representative of KPCB

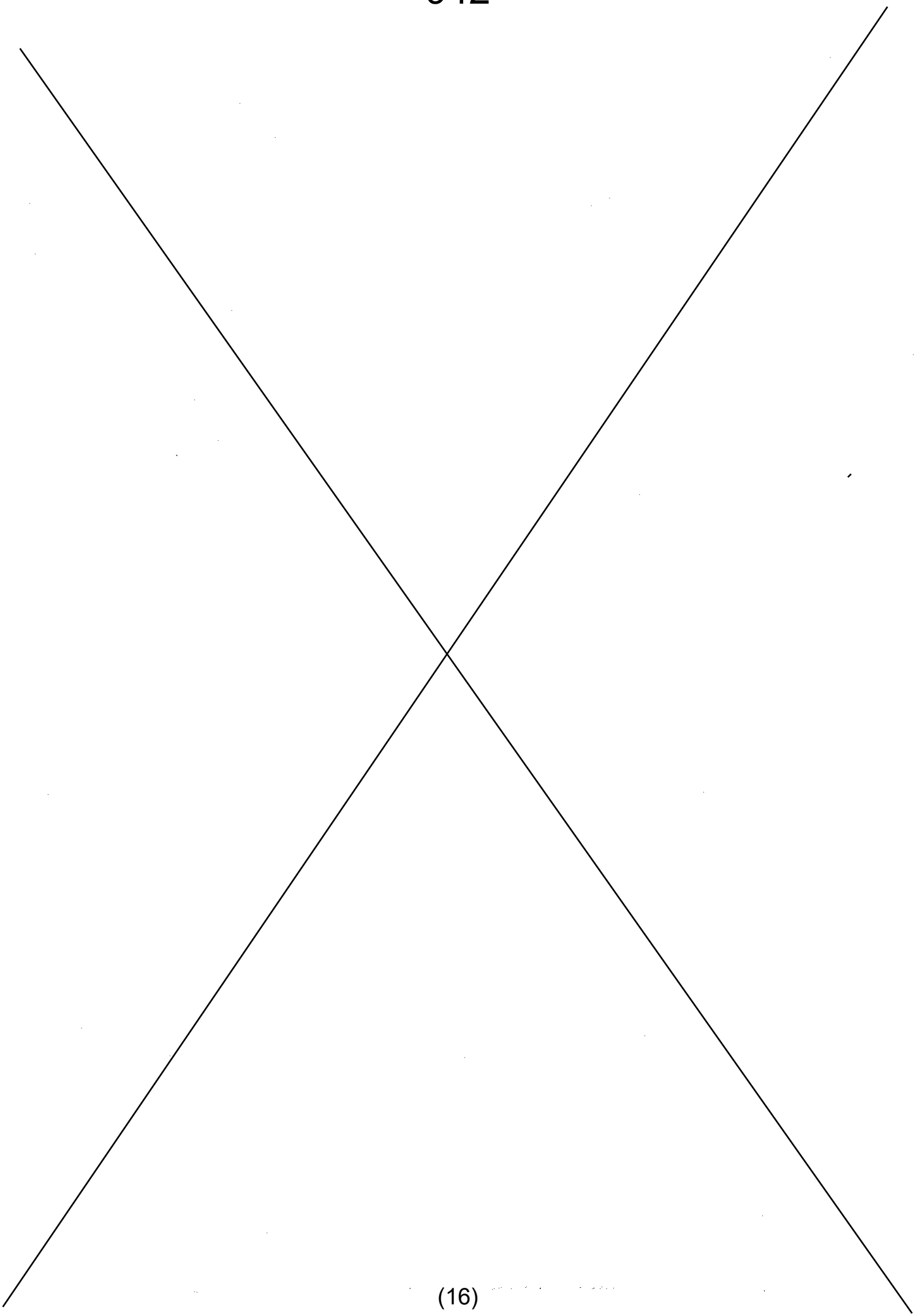
Expert members

16. Shri Sujeet Kumar Singh, Director, NCDC
17. Dr J.A.Jayalal, IMA

18.Dr. Ritu Gupta, Head, Laboratory, DR BRAIRCH, AIIMS, New Delhi
19.Dr R. K. Srivastava, Additional Medical Superintendent, Safdarjung Hospital, New Delhi
20.Dr Kishore Malviya, CII
21.Shri Santosh Yadav, CII
22.Shri Asad Warsi, CBWTF Association of India

Others

23.Prof. Anup Thakar
24.Dr. Birender Singh, Gujarat
25.Dr. Nishant R T
26.Dr. Shipra Pandey
27.Shri Rajkumar
28.Shri Ramesh C
29.Shri Tika Ram



Annexure-7

Record of discussion of meeting held between the CMC and State Advisory Bodies constituted under BMWM Rules, 2016 and State-level Committees constituted in compliance of Hon'ble NGT's direction in matter of O.A. No. 180/2021 - Mukul Kumar Versus State of Uttar Pradesh & Ors.

A virtual meeting of Central Monitoring Committee (CMC) and State Advisory Bodies constituted under BMWM Rules, 2016 and State-level Committees constituted in compliance with Hon'ble NGT's direction in matter of O.A. No. 180/2021 (Mukul Kumar Versus State of Uttar Pradesh & Ors.) was held under the chairmanship of Shri Naresh Pal Gangwar, Additional Secretary, MoEFCC on 09.05.2022 at 11:00 am. The meeting was attended by Members of CMC, Representatives of State Advisory Bodies *(constituted under BMWM Rules, 2016)*, State Level Committees *(constituted as per NGT judgment dated 07.01.2022 in the matter of OA 180/ 2021)*, State Health Departments, State Pollution control Boards/ Pollution Control Committees, CBWTF Association of India etc.

2. At the outset, the MoEFCC representatives gave a brief introduction on the purpose of meeting followed by a presentartion highlighting the background of the Hon'ble NGT case, and directions issued by Hon'ble NGT. The participants were apprised that in compliance of NGT order, Ministry has issued advisory to all States/ UTs, convened meeting of CMC on 02.02.22, asked all state health department and SPCBS/ PCCs to submit information and requested CPCB to submit Standard Monitoring Framework. It was informed that so far, Ministry has received information from 20 states/ UTs viz. Andaman & Nicobar, Arunachal Pradesh, Andhra Pradesh, Daman Diu & Dadra Nagar Haveli, Delhi, Goa, Haryana, Himachal Pradesh, Kerala, Karnataka, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Pondicherry, Rajasthan, Sikkim, Telangana, Tripura and West Bengal. However, in absence of information from about half of the States/ UTs, the Ministry has now sought additional time of 3 months from Hon'ble NGT for preparation of National Report on implementation of Biomedical Waste Management Rules, 2016

3. Following MoEFCC's presentation, states viz. Bihar, Himachal Pradesh, Puducherry, Telangana, Andhra Pradesh, and Goa made a presentation on status of Bio-Medical waste management in compliance with the BMWM rules 2016. Their presentation highlighted the status and details of the State Level Committee constituted under BMW Rules, 2016, details of the meetings held by State Level Committees, status of compliance of HCFs and CBWTFs, present method of disposal of BMW, Gap Analysis of BMW generated and CBWTF capacity. The remaining states

present in the meeting were requested to submit their presentations to the MoEFCC.

4. Thereafter, CPCB made a presentation on follow-up action on OA 180 of 2022. It was informed that CPCB had also forwarded the NGT order to SPCBs/ PCCs. CPCB has also reportedly sought information from the States to prepare a Standard Monitoring Framework. CPCB informed that it had also convened a meeting with the CBWTF Association of India to discuss the implementation of OCEMS where in few action points were emerged such as financial assistance for upgradation of small facilities, arrange meetings with CBWTF operators and OCEMS vendors to discuss technical issues, request for waiving off from installation of OCEMs for parameters such as NOx, Dioxins and Furans, Hg. A meeting was also held with Maharashtra, Punjab, and Telangana SPCBs to discuss gap analysis on BMW generation and treatment facilities. As a part of the deliberations, it was suggested that CPCB may constitute a committee to develop a standard/ uniform method for carrying out Gap Analysis for BMW manafement.

5. On the aspect of operation of CBWTFs, the representative of Odisha PCB and Punjab PCB suggested that the limit of 75 km radius for CBMWTF should be further reduced to 40 or 50 km radius, as a prescription of radius in small states allow a player to create monopoly in the area for BMW management. Further, it was also suggested that the mandatory requirement of 1000 beds for CBWTF facility should be decreased to approx. 500 beds to achieve the aim of 'One district, one Facility'. However, the CMC and other stakeholders noted that the proposal needs further discussion among various entities engaged in BMW management.

6. The representative of CBWTF Association of India extended its support to form committee to resolve issues related to gap analysis for biomedical waste management, installation of OECMS etc.

7. After detailed deliberations, the Chair, in consultation with participants identified the following actions for proper BMW management:

- CPCB shall submit Standard Monitoring Framework and updated State-level information considering that a National Level Report was filed by it in same matter.
- CPCB shall develop standard guidelines for Gap Analysis for all states.
- State Health Departments/ State Pollution Control Boards/ UT Pollution Control Committees that have not submitted information so far, may do so on PRIORITY

- CPCB may also coordinate with State Pollution Control Boards/ Pollution control Committees, CBWTFs Association of India, if needed, for fine tuning the standard monitoring framework.
- CPCB requested all States to submit copy of the minutes of the meetings of the State and District Level Monitoring Committees for further examination, referring ideas and adherence to the timelines fixed for improving BMW management.
- All stakeholders were requested to submit suggestions for updating CPCB guidelines on biomedical waste management.

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Annexure

List of Participants

List of Participants

MoEF&CC

1. Shri Naresh Pal Gangwar, Additional Secretary
2. Shri Ved Prakash Mishra, Director
3. Shri Dinesh Runiwal, Scientist E
4. Ms. Shivani Mudgal, Consultant
5. Ms. Aiyshwarya Laxmi, Intern

CPCB

6. Shri M K Choudhury, RD, CPCB, Shillong
7. Shri V P Yadav, Additional Director
8. Ms. Youthika Puri

Representative of State Pollution Control Boards

9. Prof. (Dr.) Adarsh Pal Vig, Chairman, Punjab Pollution Control Board

10.Shri AV Shah, MS, Gujarat Pollution Control Board
11.Member Secretary, Puducherry Pollution Control Committee
12.Member Secretary, Bihar State Pollution Control Board
13.Member Secretary, Rajasthan State Pollution Control Board
14.Member Secretary, Himachal Pradesh Pollution Control Board
15.Member Secretary, Maharashtra Pollution Control Board
16.Member Secretary, Nagaland Pollution Control Board
17.SEE, CFO, Andhra Pradesh Pollution Control Board
18.Shri Rakesh Kumar, SEE, Punjab Pollution Control Board
19.Shri Satinder Pal SEE, Haryana State Pollution Control Board
20.Shri R. K. Tyagi, CEO-6, Uttar Pradesh Pollution Control Board
21.Shri P S Pankaj, Delhi Pollution Control Committee
22.Shri Brijesh Sheth, Gujarat Pollution Control Board
23.Representative of Tamil Nadu Pollution Control Board
24.Representative of Meghalaya State Pollution Control Board
25.Representative of Mizoram Pollution Control Board
26.Representative of Telangana State Pollution Control Board
27.Representative of Odisha State Pollution Control Board
28.Representative of Daman & Diu and Dadra Nagar Haveli Pollution Control Committee
29.Representative of Goa State Pollution Control Board
30.Representative of Arunachal Pradesh Pollution Control Board
31.Representative of Karnataka Pradesh Pollution Control Board

Representative of State Health Departments

32.Joint Secretary, Health, Kerala
33.DHME, Health & Family Welfare, Mizoram
34.Representative of Health & Family Welfare Department, West Bengal
35.Dr.P.Senthil Kumar, Nodal Officer, DM&RHS, Telangana
36.Dr. Birender Singh, sqamo, Gujarat
37.Representative of National Health Mission, Jharkhand
38.Representative of Indira Gandhi Institute of Medical Sciences Institute Patna, Bihar
39.OSD, Agartala Government Medical College
40.Representative of Punjab Health Systems Corporation

Representative of Environment Departments/Urban Development departments etc.

41.Representative of Urban Development and Housing Department, Bihar

42.Principal Chief Conservator of Forests (Climate Change) Bihar
43.Representative of Animal and Fisheries Resources Department, Bihar
44.Shri Jayant Raushan, Bihar State Disaster Management Authority
45.Office Of Commissioner Industries, Rajasthan
46.Municipal Commissioner, Patna

Others

47.Common Bio-medical Waste Treatment and Disposal Facilities Association of India
48.Dr Lalnuntluangi SNO HWC Mizoram
49.Dr. Santosh Yadav, CII
50.Dr Ashok Kumar, ADMS
51.ER Meghnad Nath
52.Dr Baroon Subba
53.Ms. Princey Verma
54.Shri Kedar Nath
55.Ms.Poonam Panwar
56.DR Shipra Pandey
57.Shri Shakeel Ahmed, Telangana
58.Dr. Pempa T. Bhutia
59.Dr Baroon Subba
60.Dr. R R Tiwari
61.Ms. Priyanka
62.Shri Rajeev Kumar
63.Shri Bhargab Jyoti Das
64.Shri Bishu Karmakar
65.Dr.Anirban
66.Dr. Kallol
67.Dr. Jaskirandeep Kaur
68.Dr.Shalini
69.Dr Vidyapati Chaudhary
70.Shri Piyush
71.Ms. Ruksana
72.Ms. Sadhya Rai
73.Shri Sudhir Kumar
74.Shri Apurva
75.Dr. Amar Supate

76.Shri Dipak Rudra Pal
77.Shri Sanjay
78.Shri Rajeev Kumar
79.Dr.RS Dhaliwal
80.Shri Pawan Kumar Paswan
81.Shri Akum
82.Ms. Bina
83.Shri Birender Singh
84.Shri Rajesh
85.Dr.Shruti Vaghela
86.Ms. Anjali Arora

(54)

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

By Speed Post

F. No. B-31011/BMW (6022/79)/2023/WMD-I 1250 **February 28, 2023**

To,

Sh. Naresh Pal Gangwar,
Additional Secretary,s
Ministry of Environment, Forest and Climate Change,
Prithvi marg, 5th Floor, Room no. 505,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi -110003.

Sub: Action taken by CPCB on issues raised by stakeholders during Central Monitoring Committee of MoEF&CC related to implementation of BMWM Rules, 2016- reg.

Sir,

With reference to D.O. letter dated 14.11.2022 on the above mentioned subject, please find enclosed herewith the status report on action points identified during stakeholders review is enclosed at **Annexure-I.**

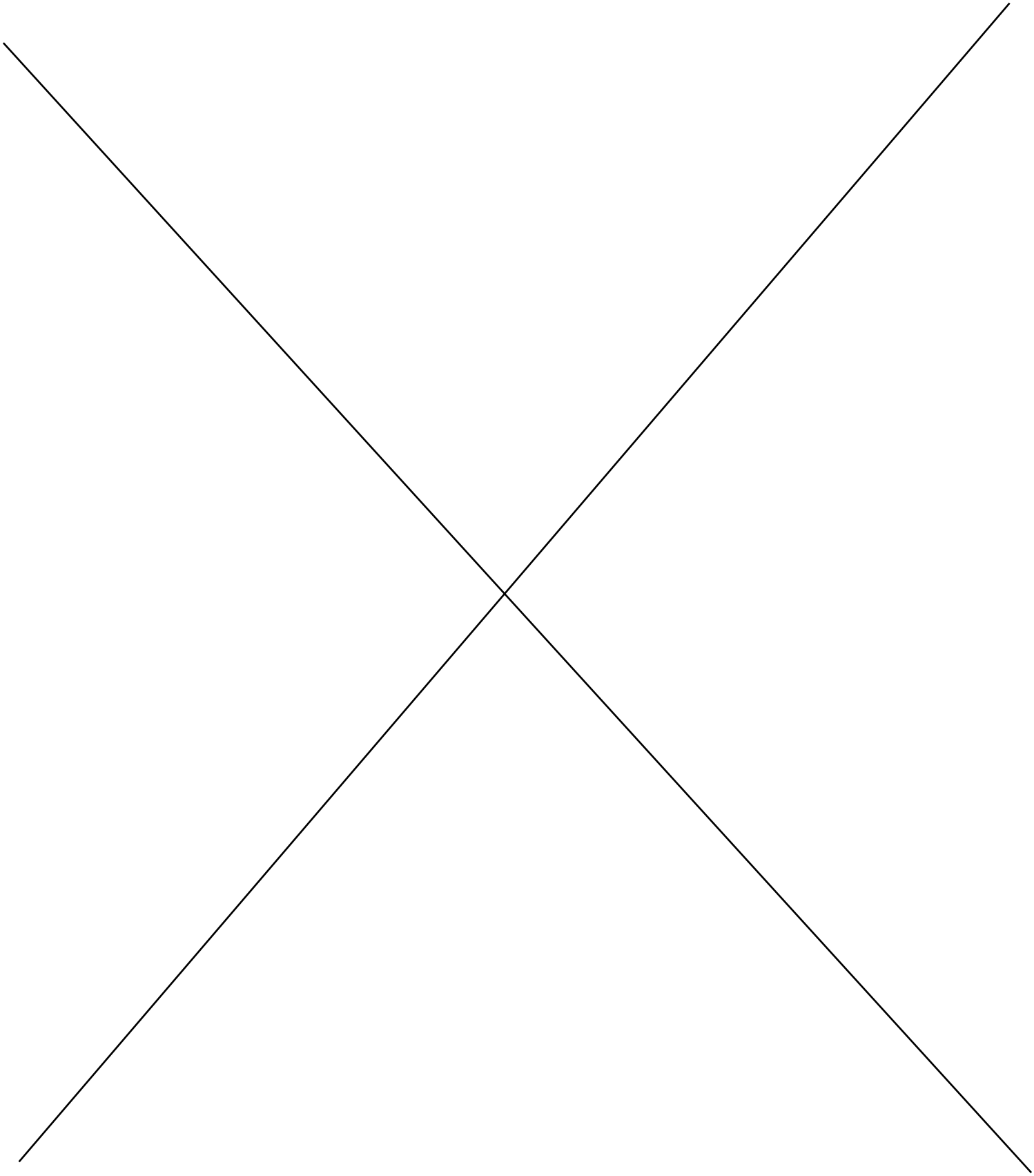
Yours faithfully,

(Prashant Gargava)
Member Secretary

Encl. As above

AS(NPG)-O/L
Dir(VPM)

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel : 43102030, 22305792 वेबसाईट/Website : www.cpcb.nic.in



Annexure-I

S. No.	Issues/Points	Action taken by CPCB
1.	Coordinate with Common Biomedical Waste Treatment Facility (CBWTF) Association and ensure installation of OCEMS and its linkage with CPCB/SPCB/PCC server	There are 215 CBWTFs operating for the treatment and disposal of biomedical waste as per the annual report data submitted by SPCBs/PCCs. Out of 215, 158 CBWTFs have installed OCEMS. Subsequent to the review by Central Monitoring Committee and follow-up actions by CPCB, the number of CBMTF with OCEMS connectivity has increased to 201. CPCB also issued letters dated 08.07.2022 and 12.08.2022 to SPCBs/PCCs to ensure installation of OCEMS by all the remaining CBWTFs & captive incinerators by healthcare facilities and also to ensure connectivity to SPCB/PCC and CPCB server. CPCB conducted meetings with CBWTF operators during 17.11.2022 and 18.11.2022 to discuss compliance with respect to OCEMS connectivity with CPCB server. Action is being taking against the facilities which still have not complied with OCEMS connectivity.
2.	Arranging a stakeholder consultation to address common issues arising in BMW management and prepare a guidance framework on fee structure of CBWTFs	CPCB conducted meeting on 29.08.2022 to discuss implementation of BMWM Rules, 2016, with CBWTF operators wherein it was explained that procedure to finalise the fee through Advisory Committees of individual State/UT to be charged by CBWTF operators from member Healthcare Facilities is already prescribed under CPCB revised guidelines for CBWTFs. CPCB vide letters dated 29.12.2020 and 09.01.2023 requested all SPCBs/PCCs to relook into State specific procedures adopted for grant of authorization including Consent to HCFs. Another stakeholder meeting with SPCBs, State Health Departments, CBWTFs Association and Healthcare Facilities is proposed to be conducted in the month of March, 2023 to discuss the mechanism for levying fee for biomedical waste treatment & disposal by CBWTFs.
3.	Issue fresh consolidated instructions clearly mentioning the mandated/prescribed standards for liquid effluent management for each category of Healthcare Facilities/CBWTFs	CPCB vide letter dated 12.04.2022 clarified the requirement of liquid waste treatment facility by the Healthcare Facilities and issued the clarification to all the State Boards. Copy of CPCB letter dated 12.04.2022 is enclosed for ready reference.
4.	Expediting the rollout of a web portal for bar coding of waste for tracking as well as annual reporting purpose, in line with the EoDB initiative	Award of work has been issued to the M/s Atishay Limited, Bhopal, Madhya Pradesh, for the project. Project is scheduled to be completed by October, 2023.

S. No.	Issues/Points	Action taken by CPCB
5.	Submission of Standard Monitoring Framework	CPCB has already prepared Standard Monitoring Framework and same has been forwarded to MoEF & CC vide letter dated 17.08.2022. Copy of said letter is enclosed for ready reference.
6.	Development of Standard guidelines for gap analysis for all States/UTs	As per the CPCB revised guidelines for CBWTF, gap analysis is required to be conducted by SPCBs based on the extrapolated data for biomedical waste generation and requirement of treatment capacity for next ten years. A format for carrying out said gap analysis is given under CPCB guidelines for CBWTFs. CPCB also, vide letter dated 24.02.2022, requested SPCBs/PCCs to provide information on biomedical waste generation and treatment gap analysis at State level and its third party audit for further assessment. Few SPCBs submitted that gap analysis is completed however the same is not provided to CPCB. Reminder letter has been issued and matter is being followed up. In the proposed stakeholder meeting, this aspect will also be explained to carry out the gap analysis.
7.	Revision of BMWM Rules, 2016 implementation guidelines	CPCB convened a meeting with stakeholders on 14.07.2022 regarding revision of CPCB guidelines related to Bio-Medical Waste Management as per BMWM Rules, 2016. Issue of the revision of guideline is under process.
8.	Examination and validation of new treatment technology for BMW	CPCB has received a proposal of new technology namely "Sterilewave" from M/s Meledom Traders Pvt. Ltd. for treatment of biomedical waste. Site visit has been conducted in December, 2022 by a sub-committee of officers namely Dr. T K Joshi (BMW Expert), Dr. Sushant Wath, Pr. Scientist NEERI and CPCB officials. During the visit the samples were collected to verify the standards for sterilisation. Results are awaited from the lab.

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT FORESTS & CLIMATE CHANGE

By Speed Post

F. No. B-31011/BMW (58.II)/2022/WMD-I

April 12, 2022

To,

Member Secretary
SPCBs/PCCs. (as per the list)

Sub.: Compliance to wastewater discharge standards by Healthcare Facilities as per Biomedical Waste Management Rules, 2016 – reg.

Ref.: CPCB letter no. B-31011/BMW (58.II)/2020/WMD-I/14757-14791 dated 29.12.2020

Sir,

This has reference to above referred CPCB letter dated 29.12.2020 regarding compliance to wastewater discharge norms under BMWM Rules, 2016 by the Healthcare Facilities.

In this regard, in order to avoid any ambiguity, it is to clarify that non-bedded Healthcare Facilities (HCFs) may not necessarily need to install Effluent Treatment Plant and as per BMWM Rules, 2016 they are required to dispose infectious liquid wastes only after treatment by disinfection as stipulated under Schedule II (6) of said Rules. Further, bedded HCFs are required to comply with the standards prescribed for liquid waste under Schedule-II of Biomedical Waste Management Rules, 2016. In case, wastewater is discharged into a public sewer connected to a terminal Sewage Treatment Plant, the bedded HCFs are required to meet general standards as notified under the Environment (Protection) Act, 1986 (29 of 1986). Copy of the relevant portion of Schedule II of BMWM Rules, 2016 is enclosed for ready reference.

Yours faithfully,

(B. Vinod Babu)
Scientist-F & Nodal Officer,
Waste Management

Encl.: As above

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel : 43102030, 22305792, वेबसाईट/Website : www.cpcb.nic.in

8. STANDARDS FOR LIQUID WASTE. -

(1) The effluent generated or treated from the premises of occupier or operator of a common bio medical waste treatment and disposal facility, before discharge into the sewer should conform to the following limits;

PARAMETERS	PERMISSIBLE LIMITS
pH	6.5-9.0
Suspended solids	100 mg/l
Oil and grease	10 mg/l
BOD	30 mg/l
COD	250 mg/l
Bio-assay test	90% survival of fish after 96 hours in 100% effluent.

(2) Sludge from Effluent Treatment Plant shall be given to common bio-medical waste treatment facility for incineration or to hazardous waste treatment, storage and disposal facility for disposal.

Speed Post

F. No. – B-31011/BMW (2096/42.77)/2022/WMD –I/504 August 17, 2022

To,

The Director,
HSM Division,
Ministry of Environment Forest and Climate Change,
Indira Paryavaran Bhawan, Jorbagh Road,
New Delhi -110003.

Sub: Standard Monitoring Framework for implementation of Bio-Medical Waste Management Rules, 2016 –reg.

Sir,

This has reference to MoEF&CC D.O. letter dated 03.02.2022 wherein CPCB was directed to prepare a Standard Monitoring Framework which address the compliance to Biomedical Waste Management Rules, 2016 and its monitoring framework. It is to inform that CPCB has prepared said document indicating stakeholders of BMWM Rules, 2016 and their duties; monitoring agencies; existing monitoring mechanism and monitoring framework.

Afore-said document on 'Monitoring Framework for Implementation of Biomedical Waste Management Rules, 2016' is attached herewith for ready reference.

This issues with approval from Competent Authority, CPCB.

Yours faithfully

(V. P. Yadav)
Director & Head
Waste Management Division-I

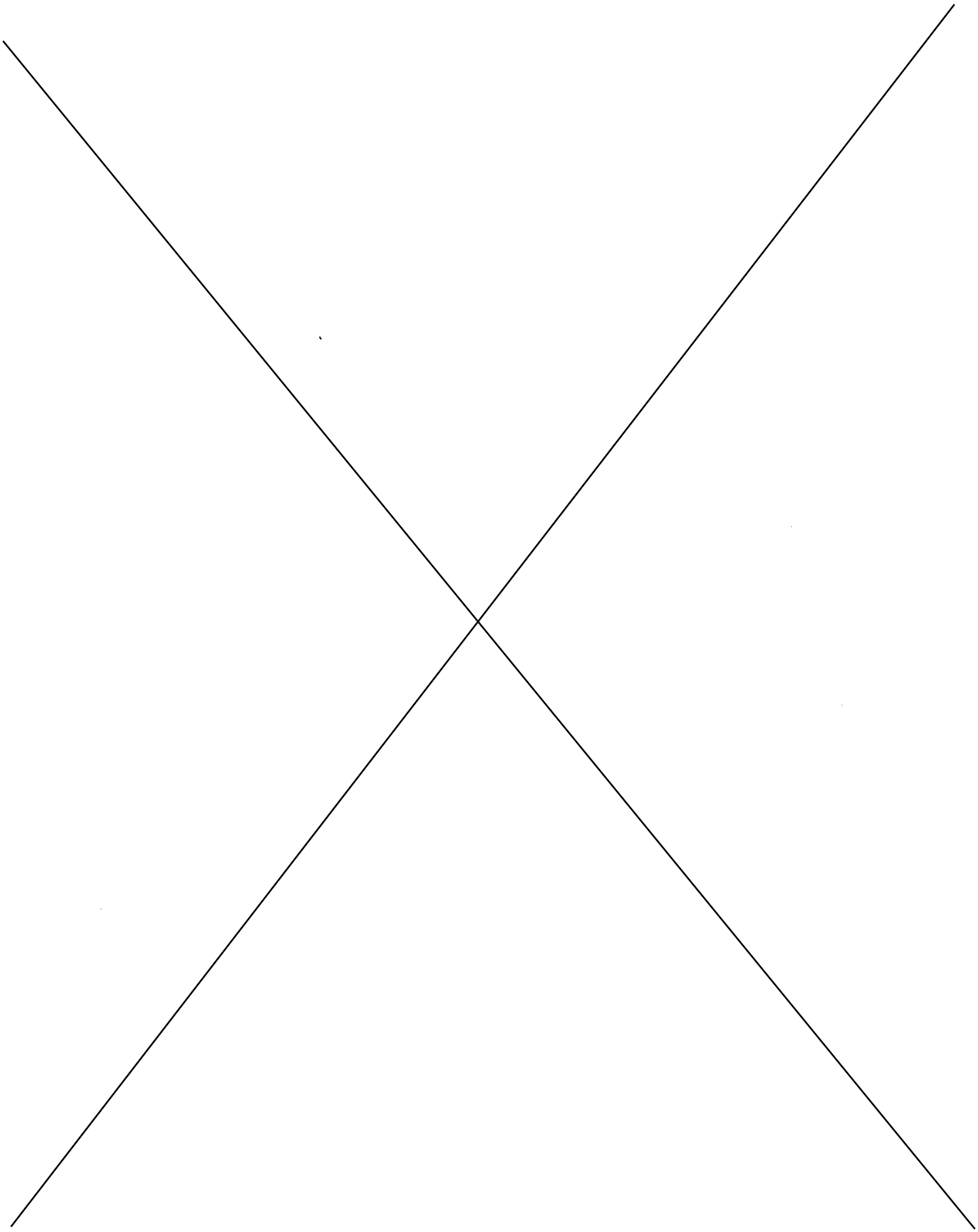
Encl: As above
Copy to:

i. PS to 'MS' : For kind information of 'MS' please

(V. P. Yadav)

17.08.2022

C/C



Record of discussion of the meeting of the Central Monitoring Committee (constituted under Bio-Medical Waste Management Rules, 2016) held on 18 July 2023

A virtual meeting of the Central Monitoring Committee (CMC) was held under the chairmanship of Shri Naresh Pal Gangwar, Additional Secretary, MoEFCC on 18.07.2023 at 11:00 AM. The meeting was held in hybrid mode and the list of participants in Annexed.

2. The Chair had a brief round of introduction with the participants and asked CPCB to present the status of BMWM Rules, 2016 implementation in the country with a focus on the issues highlighted during the previous meeting. The issue-wise deliberations are presented below:

- **Development of web portal for BMW tracking and annual reporting** – CPCB representative informed that the project has been awarded to an agency, and the target date of completion is October 31, 2023. It was noted that once the portal becomes functional it will become a tool to assess compliance under the rules as well as a repository of information for all BMW management-related aspects *viz.* non-compliance cases, annual reporting, EC imposition, waste tracking, etc. Hence, all other provisions of BMWM Rules, 2016 shall be aligned with the operationalization of the portal.
- **Revision of BMWM Rules, 2016 implementation guidelines** – CPCB informed that it is reviewing the guidelines based on the implementation experience, and also undertaking consultations and inviting views from stakeholders to examine and consider the suggestions. Many CMC members raised the issue of Gap-Analysis in the establishment of CBWTFs and highlighted that there is no standard methodology for the same. In this regard, it was unanimously agreed that the CPCB may take up the formulation of guidelines in a parallel manner such that the 'Guidelines on Gap Analysis' be framed within 1 month, and the implementation guidelines be framed in the next 3 months. Permission to new CBWTFs within defined area may be given as per rules and after gap analysis. The SPCBs/ PCCs may be involved in the process and duly supported, if required, through the utilization of EC funds.
- **Uniformity of Fee Structure** – The CMC members raised the issue of the fee structure of the CBWTFs. The CPCB informed that as of now the fee structure is finalized by the State Advisory Committees. It was decided that CPCB should interact with the State PCBs/ PCCs and devise a uniform basis for fixing the CBWTF charges. The aspects of 'financial viability' as well as 'profiteering' needs to be considered while firming up the basis of CBWTFs charges.
- **Proposal of New BMW treatment technology** – The Expert Committee Report on this issue is under preparation and would be submitted to MoEFCC for further consideration.
- **Submissions by States** – The States of Haryana, Gujarat, and Karnataka presented the status of BMW management within their jurisdiction. The Haryana PCB mentioned that gap analysis studies have been conducted and there is no need for additional CBWTFs. The KSPCB highlighted that

there's a need for 'guidance on uniformity in gap analysis' for assessing the need for CBWTFs. The Karnataka PCB highlighted that aspect of the reuse of body fluids from cancer and other hospitals for research purposes by biotech and other R&D establishments needs to be clarified. The Gujarat PCB mentioned that gap analysis has been done partially, and the rest will be completed at the earliest. The need for having a Healthcare Facility Register was highlighted.

- **Submissions by Stakeholders** – The representative of M/o AYUSH indicated that the new set of rules also covers AYUSH clinics and hospitals; however, the implementation guidelines largely address the issues faced by conventional hospitals. Hence, there is a need for SOPs for AYUSH hospitals and clinics.

  The representative of IMA submitted that as per a study conducted by Punjab PCB and Thapar Institute of Technology, Patiala the Bio-assay test is not possible for the waste water emanating from HCFs. CPCB asked IMA to submit a representation in the matter duly attaching the quoted study report for examination at their end and further taking up the matter .

  The CII representative mentioned that as per BMWM Rules, 2016, the ULBs are responsible to allocate suitable land for CBWTF establishment, however, due to a deterring public attitude towards CBWTFs , it is challenging to find land under the control of ULBs. However, in many places, provisions have been made to accommodate common facilities in the notified industrial areas. Hence, the BMWM Rules, 2016 may be amended to include notified industrial area authorities in column 7 of the Schedule-III, along with ULBs, to earmark the responsibility of land allocation for the establishment of CBWTFs.

3. After detailed deliberations among the members, following action points emerged from the discussion:

i. CPCB to take the required steps for the development of the portal by 30th November 2023, and once the portal becomes fully functional, CPCB shall submit a proposal to MoEFCC to amend the BMWM Rules, 2016 by duly aligning it to the waste tracking and online annual reporting provisions. (**CPCB**)
ii. CPCB to submit Expert Committee Report on new BMW technology (STERILWAVE), along with its recommendations. (**CPCB**)
iii. CPCB is to develop guidelines on 'Gap Analysis studies for CBWTF establishment' in consultation with all stakeholders, within 1 month of the issue of these Minutes of Meeting and future gap analysis to be done accordingly. Results of gap analysis to be considered for giving permission to new facilities. (**CPCB/SPCBs**)
iv. CPCB is to develop the implementation guidelines by 30th November 2023 and align the guidance developed at (iii) above with the comprehensive guidelines prepared on BMWM Rules, 2016 implementation. (**CPCB**)
v. CPCB is to prepare a status update on CBWTF fee structures fixed by various States/ UTs, and based on its examination devise guidance for arriving at a uniform basis of fee structure. (**CPCB**)

vi. CPCB may examine, clarify and issue a standardized procedure on the aspect of the reuse of body fluids (in line with the existing provisions) by biotechnology, R&D institutes, and cancer hospitals (**CPCB**)

vii. Healthcare Facilities to implement Bar code generation to track BMW by 30th November, 2023 (**Action : Health Care Facilities**)

viii. Stakeholders (CII, IMA, and others) are requested to submit their representations to CPCB to enable them to take up the examination of issues raised in the meeting and make recommendations to MoEFCC, including the need for amendments in the BMWM Rules, 2016. (**Action: Stakeholder Associations**)

ix. CBWTF Association to make a representation to CPCB on the issue of ZLD ETPs. (**Action : CBWTF Association**)

x. Submissions w.r.t. development of SOPs for AYUSH clinics and hospitals, matters related to inclusion in BMWM Rules, 2016 implementation guidelines, and representations on gap analysis studies may be submitted to CPCB within 20 days of the issue of these 'Minutes of Meeting'. (**Action: Ministry of Ayush**)

The meeting ended with thanks to the Chair.

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केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

By Speed Post

F. No. B-31011/BMW (6022/79)/2022/WMD-I 668

November 21, 2023

To,

Sh. Dinesh Runiwal,
Scientist 'E', HSMD
Ministry of Environment, Forest and Climate Change,
Prithvi marg, 5th Floor, Room no. 541,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi -110003.

Sub: Status of action taken on the decision of Central Monitoring Committee (constitutes under Biomedical Waste Management Rules, 2016) held on 18.07.2023- reg.

Ref: ***office memorandum dated 12.10.2023***

Sir,

This has reference to office memorandum dated 12.10.2023 seeking status of action taken on the decision of Central Monitoring Committee (constitutes under Biomedical Waste Management Rules, 2016) held on 18.07.2023.

In this regard, action taken by CPCB on the mentioned points is attached at Annexure –I along with the correspondence made by CPCB.

Yours faithfully,

(V. P. Yadav)
Director & Head
Waste Management -I Division

Encl. as Above

P/s. examine vis-a-vis the MoM of CMC Meeting.

23/11/23

Ms. Apoorva

Annexure-I

S. No.	Mentioned points	Action taken by CPCB
1.	Submission of Expert Committee Report on new BMW technology (STERILWAVE), along with its recommendations.	The proposal of technology namely "Sterilewave" based on sterilisation and shredding for treatment for biomedical waste received from M/s Meledom Traders Pvt. Ltd. was examined and an Expert Group was constituted for assessment of the said technology. CPCB vide letter dated 09.11.2023 forwarded assessment report to MoEF&CC (Copy of letter attached as Annexure-II)
2.	Development of guidelines on 'Gap Analysis studies for CBWTF establishment' in consultation with all stakeholders, within 1 month of the Meeting.	CPCB has prepared guideline/methodology to conduct gap analysis with respect to generation and treatment of biomedical waste. The said guideline/methodology was circulated to all SPCBs/PCCs vide letter dated 12.10.2023 for conducting gap analysis in line with aforesaid methodology. (Copy of letter attached as Annexure-III). Reply of SPCBs/PCCs in this regard is still awaited. CPCB may revise the guidelines for Common Biomedical Waste Treatment Facilities based on the observations of gap analysis conducted by SPCBs/PCCs.
3.	Development of the implementation guidelines by 30th November, 2023, and align these guidelines with gap analysis guidelines.	
4.	Preparation of status update on CBWTF fee structures fixed by various States/ OTs, and based on its examination devise guidance for arriving at a uniform basis of fee structure.	CPCB is in process of devising a uniform basis for fixing the CBWTF charges. In this regard, all SPCBs/PCCs vide letter dated 27.10.2023 were requested to provide information regarding cost charged from the healthcare facilities by Common Biomedical Waste Treatment Facilities (Copy of letter attached as Annexure-IV). CPCB may devise a uniform basis for fixing the CBWTF charges based on the analysis on cost charged by CBWTFs in States/UTs.
5.	Clarification and issue a standardized procedure on the aspect of the reuse of body fluids (in line with the existing provisions) by biotechnology, R&D institutes, and cancer hospitals.	CPCB has already prepared "Guidelines for Handling of Biomedical Waste for Utilization". Further, CPCB vide letter dated 15.09.2020 and 07.10.2021 requested all SPCBs/PCCs to encourage vendors/firms for utilisation of biomedical waste in line with Biomedical Waste Management Rules and CPCB guidelines. (Copy attached as Annexure-IV and Annexure-V)

6.	Steps for the development of the portal by 30th November 2023	CPCB has taken up the project "Implementation of centralised barcode system and tracking of Bio-medical waste". CPCB has constituted working group for proper implementation of centralized bar code system. Further, around 200 CBWTFs are registered with Centralised Bar Code System. Task regarding fetching of information of live tracking of biomedical waste through API is under process. CPCB also conducted zone –wise meeting through Video Conferencing for all CPCB operators during 31st October to 3rd November, 2023 to expedite the process of integration of their bar code system to Centralised bar code system. Project is expected to be completed by 31st December,23.

134016/2023/WM-I-HO

963

Annexure -III

By Speed Post

F. No. B-31011-BMW (3398)-2023-WM-I 4933-68

October 10, 2023

To

The Member Secretary,
All SPCB and PCC

Sub: Regarding methodology to conduct gap analysis with respect to generation and treatment of biomedical waste -reg.

Sir/ Madam,

It is to inform that State Pollution Control Boards/Pollution Control Committees are required to conduct gap analysis with respect to generation and treatment of biomedical waste in respective State/UT. A format for conducting gap analysis is given in CPCB guidelines for Common Bio-medical Waste Treatment Facilities. Few State Boards have prepared gap analysis report adopting their own methodology. The matter was also discussed in Central Monitoring Committee meeting on 18.07.2023 wherein need for adopting uniform methodology was emphasised. Hence, to avoid the ambiguity and to adopt uniform procedure, CPCB has prepared a methodology to conduct gap analysis (Copy attached herewith for ready reference).

In view of above, it is requested to kindly conduct gap analysis with respect to generation and treatment of biomedical waste in your State/UT using the aforesaid methodology and report may be submitted to CPCB within one month.

Yours faithfully,

(V. P. Yadav)
Director & Head
Waste Management -I Division

Encl. As above

Copy to:

PS to 'MS'

For kind information of 'MS' please

(V. P. Yadav)

Nsingh 13/10/2023 O/C

Methodology to Conduct gap analysis with respect to generation and treatment of biomedical waste

Guidelines for Common Biomedical Waste Treatment Facilities was prepared by CPCB with an aim to have uniformity in ensuring site selection, allowing and establishment of a state-of-the-art Common Biomedical Waste Treatment Facilities (CBWTFs), operation as well as verification of compliance to the BMWM Rules, 2016 throughout the country. As per the said guideline, SPCB/PCC is required to prepare an inventory or review with regard to the bio-medical waste generation at least once in five years in the coverage areas of the existing CBWTF and conduct gap analysis as per format given in Annexure-I of the guideline.

To avoid the ambiguity and maintaining the uniformity for conducting gap analysis a methodology is suggested for estimating generation, treatment of biomedical waste and its extrapolation in the State and coverage area of CBMWTF. It is elaborated in following table.

S. No.	Parameters	Details
1.	Coverage area of CBWTF	Up to 75 km
2.	No. of HCFs (Bedded and non-bedded)	In Number
3.	No. of Beds covered	In Number
4.	Total biomedical waste generation (in Kg/day)	The generation may be calculated considering following factors: a) Generation from Bedded hospital (in absence of availability of required information biomedical waste generation may be taken as 274 grams per bed) b) Biomedical waste generated from non-bedded HCFs and other sources also be considered
5.	Extrapolate the biomedical waste generation for next years	Extrapolation may be based on factors such as population growth of the districts/cities covered by CBWTF, Rate of increase in number of HCFs/beds in past years etc. as decided by SPCB in consultation with Health department and CBMWTF associations.
6.	Total existing treatment capacity (in Kg/day) (Sum of Incineration Capacity and Autoclave/Microwave/Hydroclave Capacity)	For calculation of existing treatment capacity, maintenance time may be considered for calculating operational hours of equipment as below: a) Operational Hours for static incinerator 20 hrs/day b) Operational hours for Rotary incinerator 22 hrs/day

		c) 18 cycle per day for autoclave The actual capacity may be considered as 90% of available capacity keeping 10% margin for diverted/extra waste etc.
7.	Total Biomedical Waste treated and disposed (Kg/day)	Sum of all categories of biomedical waste treated and disposal.
8.	Gap between total extrapolated biomedical waste generation (for next 10 years) and existing biomedical waste treatment capacity	Extrapolate the biomedical waste generation minus total existing treatment capacity

Based on the above data, the gap between existing treatment capacity and need of additional treatment capacity should be examined after carrying out gap analysis at coverage area/city level and State level.

***

Annexure - II

By Speed Post

F. No. B-31011/BMW (1860)/2023/WMD-I/644 November 09, 2023

To,

Sh. Ved Prakash Mishra,
Director, HSM Division
Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi -110003.

Sub: **Assessment report of project proposal of technology namely "Sterilewave" for treatment of biomedical waste based on sterilisation and shredding received from M/s Meledom Traders Pvt. Ltd. –reg.**

Sir,

This has reference to proposal of a technology namely "Sterilewave" based on sterilisation and shredding for treatment for biomedical waste received from M/s Meledom Traders Pvt. Ltd. Proposal was examined and an Expert Group was constituted for assessment of the said technology. Copy of report of Expert Group is enclosed for ready reference.

Yours faithfully,

(V. P. Yadav)
Director & Head
Waste Management -I Division

Encl. As above

Copy to:

1. PS to 'MS' : For kind information of 'MS' please

(V. P. Yadav)

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
निर्गत.....
दिनांक.....10.11.23.....

O/C

Annexure - IV

By Speed Post

F. No. B-31011-BMW (6022)-2023-WM-I 3183-3218 October 27, 2023

To,

The Member Secretary,
(All SPCB and PCC)

Sub: Regarding cost charged by the CBWTF Operator from Health Care Facilities for treatment and disposal of biomedical waste.

Sir/Madam,

It is to inform that CPCB guidelines for Common Biomedical Waste Treatment Facilities recommends that cost to be charged from the healthcare facilities by Common Biomedical Waste Treatment Facilities shall be worked out in consultation with the concerned SPCB/PCC and the local Medical Association.

The issue of the fee structure of the CBWTFs was discussed in Central Monitoring Committee meeting on 18.07.2023 wherein it was decided that CPCB should interact with the SPCBs/ PCCs and devise a uniform basis for fixing the CBWTF charges and the aspects of financial viability as well as profiteering needs to be considered while firming up the basis of CBWTFs charges.

In view of above, it is requested to kindly provide information regarding cost charged from the healthcare facilities by Common Biomedical Waste Treatment Facilities in your State/UT so as to take further decision in this matter.

Yours faithfully,

(V. P. Yadav)
Director & Head
Waste Management -I Division

Copy to:

i. PS to 'MS' : For kind information of 'MS' please

(V. P. Yadav)

O/C
केन्द्रीय प्रदूषण नियंत्रण बोर्ड
निर्देश NSingh
दिनांक 31/10/2023

9090/2021/WM-I-HO

968

Annexure -V

By Speed Post

F. No. B-31011/BMW (53)/2020/WMD-I 1399-1433

September 15, 2020

To,

The Member Secretary,
(All SPCBs/PCCs)

Sub: Utilization of BMW for productions of diagnostic material– reg.

Sir,

This has reference utilization of Bio-medical wastes such as pleural fluid, ascetic fluid, HBsAG positive blood, placenta etc. for production of drugs, reagent chemicals, markers etc. by bio-technology firms. CPCB guidelines (Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016), stipulate that healthcare facilities may provide such biomedical waste to vendors / pharmaceutical industry authorized by SPCBs/PCCs, with intimation to concerned SPCBs/PCCs.

In order to facilitate safe utilization, CPCB has also issued "guidelines for handling of biomedical waste for utilization", which provide detailed technical guidance for authorization. However, there are representations from industry / bio-technology firms stating that healthcare facilities are reluctant to provide aforesaid biomedical waste despite authorization and adherence to guidelines.

In view of above, it is requested that Pollution Control Comittee may facilitate the firm engaged in utilization of biomedical waste for above purpose. Further, healthcare facilities in the State may be advised to provide such waste to authorized vendors / pharmaceutical / bio-technology industry with intimation to SPCBs/PCCs till they renew their authorization.

Yours faithfully

(B.Vinod Babu)
AD & DH, WMD-I

O/C

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
निर्गत.....
दिनांक....18.9.20.....

Annexure - VI

By Speed Post

F.No.B-31011/BMW (53)/2021/WM-I

October 07, 2021

To,

Member Secretary
State Pollution Control Board
(As per the list)

Sub.: Representation regarding effective management of liquid biomedical waste - reg.
Ref.: CPCB letter no. F.No.-B-31011/BMW (53)/2020/WM-I/1399-1433 dated 15.09.2020

Sir,

This has reference to above referred CPCB letter dated 15.09.2020 regarding utilisation of liquid biomedical waste for production of drugs, reagents, chemicals etc. by pharmaceutical vendors/firms. It has come to our notice vide representation from one of the pharmaceutical company that the authorization to such companies is not granted by the State Pollution Control Boards and healthcare facilities are directed to handover entire biomedical waste including liquid biomedical waste to Common Biomedical Waste Treatment Facilities for final treatment & disposal.

CPCB guidelines for "Management of Healthcare Waste by Healthcare Facilities as per Biomedical Waste Management Rules, 2016" and "Handling of biomedical waste for Utilisation" stipulates that if any hospital desires to dispose biomedical waste such as pleural fluids, ascetic fluid etc. to any company involved in utilization of such waste for production of drugs, reagents, chemicals etc. the hospitals may have agreement with such venders with prior approval from State Pollution Control Boards.

In view of above, it is requested that vendors/firms may be encouraged for utilization of biomedical waste in line with BMW Rules and guidelines of CPCB.

Yours Faithfully,

(V. P. Yadav)
Additional Director &
Divisional Head, WM-I Division

Copy to:

(i) Joint Secretary, HSM Division, Ministry of Environment Forest & Climate Change : For kind information, please.

(ii) PS to 'MS' : For kind information of MS, please.

(V. P. Yadav)

O/C

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

By Speed Post

F. No. B-31011/BMW (1860)/2023/WMD-I 644 November 09, 2023

To,

Sh. Ved Prakash Mishra,
Director, HSM Division
Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi -110003.

Sub: **Assessment report of project proposal of technology namely "Sterilewave" for treatment of biomedical waste based on sterilisation and shredding received from M/s Meledom Traders Pvt. Ltd. –reg.**

Sir,

This has reference to proposal of a technology namely "Sterilewave" based on sterilisation and shredding for treatment for biomedical waste received from M/s Meledom Traders Pvt. Ltd. Proposal was examined and an Expert Group was constituted for assessment of the said technology. Copy of report of Expert Group is enclosed for ready reference.

Yours faithfully,

(V. P. Yadav)
Director & Head
Waste Management -I Division

Encl. As above

'परिवेश भवन' पर्वी अर्जुन नगर, दिल्ली–110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel : 43102030, 22305792, वेबसाईट/Website : www.cpcb.nic.in

Report of assessment of treatment equipment namely 'Sterilewave' proposed by M/s Meledom Traders Pvt. Ltd.

1. **Background:**

CPCB received a proposal from M/s Meledom Traders Private Limited regarding adoption of equipment namely "Sterilewave" which is based on combination of sterilization and shredding for treatment & disposal of biomedical waste. The key features of Sterilewave Technology as claimed and mentioned by the proponent in the proposal are as follows:

- The technology can be used to treat all type of biomedical waste generated in Healthcare facilities except expired or discarded medicine, chemical waste, chemical liquid waste, waste sharps and metallic body parts as categorized under BMWM Rules, 2016.
- The waste can be treated at source by the healthcare facility.
- Following method is being used in the said technology:
  - Biomedical waste loading without segregation i.e. No need of waste segregation
  - Grinding with rotating blades for unrecognizable output waste
  - Microwave treatment with no pressure
  - Output can be dispose of as municipal waste
- Technical Specifications of the equipment of different capacities are is as follows:

Specifications	STERILEWAVE*100	STERILEWAVE*250	STERILEWAVE*440
Waste capacity	200 l/h upto 20 kg/h	500 l/h upto 50 kg/h	880 l/h upto 70 kg/h
Vessel capacity	100 L	250 L	440 L
Average cycle time	30 minutes	30 minutes	32-35 minutes
Dimensions (Lx Wx D)	1 x1x1 m	1.6 x1.1 x1.5 m	2 x 1.1 x 2 m
Weight	700 Kg	1200 Kg	1400 Kg
Recommended working area	8 sq.m Ceiling Height: 2m	10-12 sq.m Ceiling Height: 2.2 m	15-20 sq.m Ceiling Height: 3m (3.8 m with automatic loading option)
Electricity	400 V/3-phase, 63 A		
Technology	Grinding by rotating blades and heating by microwaves		

- Operational parameters as claimed and mentioned in the proposal:

OPERATING DATA	For all (STERILEWAVE*100, STERILEWAVE*250, STERILEWAVE*440)
Microbial inactivation	Spore up to 8log10 Virus up to 6log10 STATT requirement and nfx30-503 compliant
Volume reduction	Up to 80 %
Weight reduction	Up to 25 %
Final Waste	Unrecognizable, inert, dry, stable
Loading Process	Manual or Automatic (option)
Process management	Full traceability

The said proposal was discussed in CPCB 'Standing Committee on Technology for Waste Management' constituted under Chairmanship of Member Secretary, CPCB on 24.08.2021, wherein following decisions were taken:

- The pilot plant to be set-up by the project proponent at his or her own cost.
- Expert Group to be constituted to assess the proposed technology at the pilot plant.
- The cost of the assessment if any to be borne by the project proponent. The schedule for assessment to be fixed by CPCB in consultation with the project proponent.

With reference to the recommendation of the CPCB standing committee. Following action has been initiated:

- Project proponent got the approval from Kerala SPCB and Trivandrum Medical College, Kerala for installation of their equipment at pilot scale and requested to CPCB for arranging visit of above Expert Group for carrying out assessment of treatment equipment.
- CPCB constituted an Expert group of following expert member for evaluation of performance of "Sterilewave" in treatment and disposal of biomedical waste:

  i) Sh. T.K. Joshi, Expert Member of Bio-Medical Waste Management
  ii) Dr. Sushant Wath, Principal Scientist of CSIR-NEERI, Nagpur
  iii) Dr. Suresh Rayala, Professor, Department of Biotechnology, IIT Chennai
  iv) Dr. Manoj Jais, Representative from Ministry of Health
  v) Ms. Simmi. P, Environment Engineer, Kerala State Pollution Control Board
  vi) Sh. V. P. Yadav, Divisional Head, WM-I Division, CPCB

vii) Ms. Youthika, Sc.'D', WM-I Division, CPCB
viii) Sh. Deepesh, Sc.'C', CPCB, Bengaluru

The proposal was examined by the expert group during the meetings held on 12.08.2022 and 07.09.2022.

In the first meeting of Expert group, technical specification, process of treatment, categories proposed to be treated and final disposal mode for treated biomedical waste proposed in the said proposal was discussed. Further, provisions of BMWM Rules,2016 applicable for treatment of biomedical waste for the proposed category of biomedical waste was also discussed and it was concluded that prior to visit the site where "Sterilewave" is installed at Trivandrum Medical College, Kerala, project proponent may be called for presentation before the Expert Group for detailed discussion on the proposal.

In 2nd meeting with the Expert Group, project proponent was called for detailed presentation to discuss afore-said project proposal, wherein queries were raised by the expert members. Further, it was decided that sub-committee may be constituted to visit the site where the equipment is installed at Trivandrum Medical College, Kerala and based on the visit, a technical report may be submitted to Technical Evaluation Committee of CPCB.

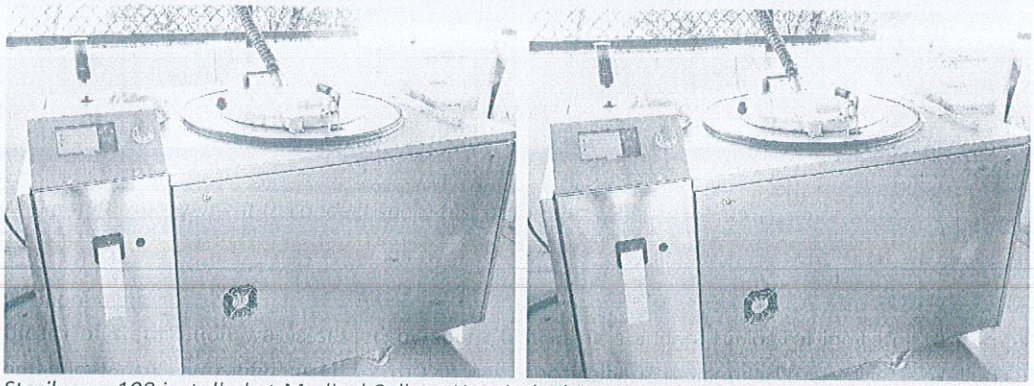
As per recommendation of the Expert Group, following sub-committee has been constituted for the visit to Trivandrum Medical College, Kerala for the purpose of assessment of technology:

1. Dr. T. K. Joshi, CPCB Board member & BMW Expert
2. Dr. Sushant Wath, Principal Scientist, NEERI
3. Ms. Youthika, Scientist 'D', CPCB, Delhi
4. Sh. Deepesh, Scientist.'C', CPCB, Bengaluru
5. Ms. Simmi. P, Environmental Engineer, Kerala SPCB

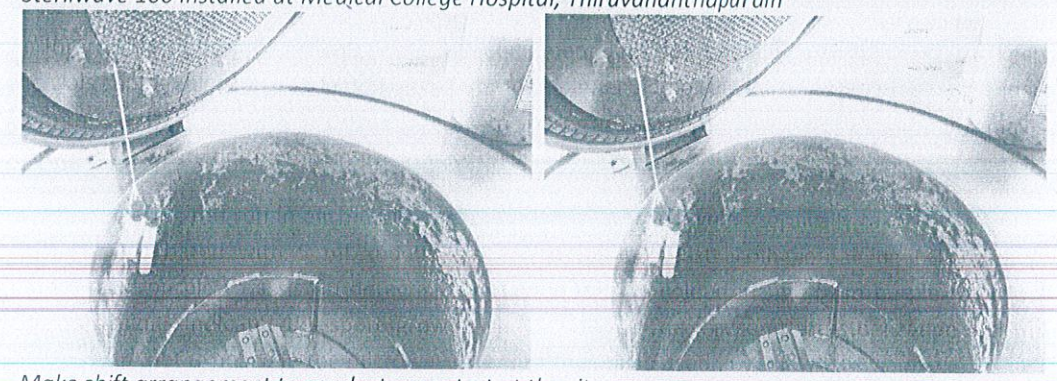
During 7th to 9th December, 2022, Sub-committee visited the site for assessment of sterilewave technology and its working performance.

2. Assessment of Sterilewave 100 (Bertin, France)

The sub-committee assessed the performance of the equipment namely 'Sterilewave' of capacity 100 liters, installed at Trivandrum Medical College, Kerala. The equipment works on the combination of steps including size reduction of loaded bio-waste through in-built shredder followed by microwave sterilization Biomedical waste is sterilized using microwaves and converted into sterilized solid waste, reducing its volume substantially as mentioned in the following table. It is a compact micro wave based solution, requiring 10 m^2 footprint with 700Kg weight, runs on 3 phase electricity connection and requires continuous piped water connection for cooling purpose.



Sterilwave 100 installed at Medical College Hospital, Thiruvananthapuram



Make shift arrangement to conduct spore test at the site

2.1 Spore test

Efficacy of sterilization was assessed by spore test using standard biological indicator test strips containing *Bacillus atrophaeus* (1.7×10^4) spores specifically recommended for ethylene oxide (EO) gas and other dry heat sterilization. In each cycle two to three spore strips were aseptically placed in perforated plastic vials. As the Sterilwave 100 equipment does not have any inbuilt provisions to keep the vials containing spores strip on the walls or in the inner side of the lid. The vials were suspended from the lid using plastic threads. The vials with spores are suspended in such a way that it remains just over the waste during the entire process cycle.

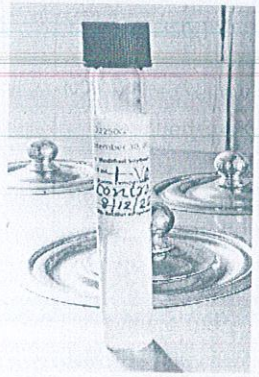
After completing the run in each cycle, the exposed spore strips were aseptically taken out and the strip was incubated with 5 mL modified soybean casein digest broth containing pH indicator bromocresol purple to assist in detecting spore growth. The colour change from purple to yellow and/or turbidity indicates the spore growth which confirms The failure of the sterilization cycle. A control strip (not exposed in the microwave sterilizer) was also used to verify spore viability.

Details of run cycles during assessment

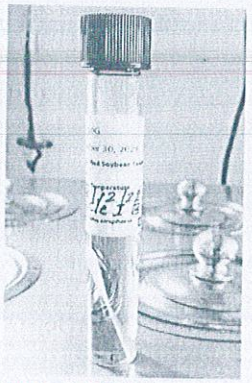
Cycle	*Type of waste @*	*Initial weight Kg*	*Final weight Kg*	*Spore test*	*Maximum temp (°C)*
# 1	Mix waste (Yellow 2.8 Kg, Red 2.3 Kg and Sharps 3.5 Kg)	8.6	5.6 (34.9 % reduction in weight)	Assessed	107
# 2	Mix waste (Yellow 3.6 Kg and Red 3.4 Kg)	7.0	5.2 (25.7 % reduction in weight)	Assessed	105
# 3	Glass vials (medicine bottles/ vials)	13.0 (Overloaded, max initial loading is 10 Kg)	12.3	Not assessed*	103

** Vials containing spore strip got detached and shredded along with the waste.*

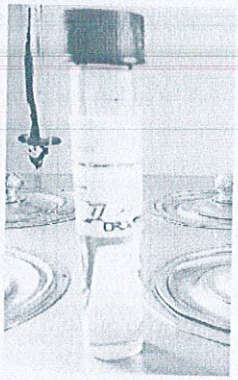
@ Category and colour coding as specified in Schedule I of Bio-Medical Waste (Management and Handling) Rules, 2016



Positive control
Growth/ turbidity / yellow colour change

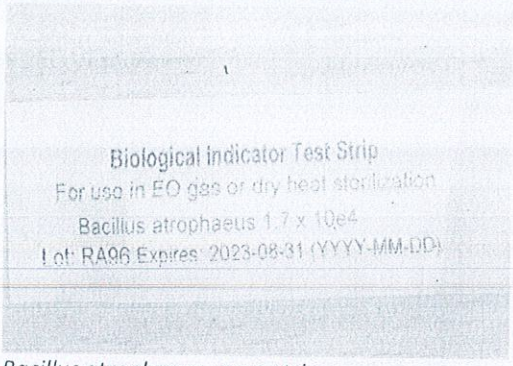


Cycle # 1 (B)
No growth/ no colour change



Cycle # 2 (A)
No growth/ no colour change

Cycle # 1 (C)
No growth/ no colour change



Bacillus atrophaeus spore strip

Aseptic transfer of spore strips to media

Exposed spore strips were incubated in the medium at 37 **C** for 48 hours in a bacteriological incubator *at Medical College Hospital, Thiruvananthapuram*. After incubation, vials were checked for growth/ colour change. Based on the spore test the cycle # 1 and 2 resulted in the deactivation of spores and indicated the sterilization efficiency.

Results of spore test conducted at Medical College Hospital, Thiruvananthapuram

Cycle	*Spore strip*	*Growth*	*Colour indicator*	*Remarks*
# 1	*Bacillus atrophaeus* (1.7×10^4)	No	Purple	Passed
# 2	*Bacillus atrophaeus* (1.7×10^4)	No	Purple	Passed
# 3	*Bacillus atrophaeus* (1.7×10^4)	Not assessed		
Control	*Bacillus atrophaeus* (1.7×10^4)	Yes	Yellow	+ ve Control

2.2 Sterility of the shredded materials

During the first cycle, the equipment was fed/loaded with 8.6 Kg of mix medical waste consisting of 2.8 Kg yellow bags, 2.3 Kg of red bag and 3.5 Kg of sharps in the form of two plastic containers). After the cycle, the mixed waste was shredded and collected in the output tray and approximately 10 g of the shredded waste was aseptically collected in a sterile sample bottle to assess the sterility of the shredded material. The sample was submitted on 09.12.2022 to the microbiology laboratory of the medical college hospital, Thiruvananthapuram for bacterial culturing under aerobic and anaerobic conditions. The test report reported that the sample could not yield any culture/ growth under both aerobic and anaerobic conditions. Thus it can be inferred that the shredded material got ~~is~~ sterilized thoroughly and it cannot support any bacterial growth under standard conditions. However further detailed studies with specific input waste category are needed for better insight and conclusion.

2.3 Assessment of the condensate generated from the equipment during sterilization

Though it was claimed that the equipment does not use water, during field trial studies it was observed that provision for continuous water supply is required for cooling purpose and to supplement water content in the waste feed for better absorption of microwave. And the used water ultimately comes out in the form of steam through the exhaust pipe line on the lid. In the experiment setup, a flexible exhaust pipe line was attached to a filter box containing HEPA filters and significant quantity of steam and condensate was observed the third cycle where only glass vials were fed into the machine.

Cycle	*Filter paper ID*	*Initial weight (g)*	*Final Weight (g)*
# 2	*MGF 931798*	3.84321	4.75362
# 3	*MGF 931799*	3.85197	4.00550

During the assessment, glass fibre filters used for PM 10 monitoring were placed before the HEPA filters to assess the particles in the exhaust line. However, due to high quantity of condensate in the exhaust line, filter paper got wet at the end of the cycle. It was observed that filter papers gained weight when exposed in the exhaust line indicating the presence of materials/ particles in the exhaust steam. This indicates that the exhaust line may carry some traces of the materials from the waste. Further, detailed study and analysis of the exhaust condensate and filter paper are needed for better insight and to arrive at any specific conclusion.

Heavy metal analysis: Further, detailed characterization study and analysis of the processed waste are needed w.r.t heavy metal content for better insight and to arrive at any specific conclusion to decide the final disposal of treated waste.

3. Observations:

1. The equipment assessed in this trial was is a 200L/ hour (20 kg/ hour) duty cycle machine with a vessel capacity of 100L. For increasing the sterilization efficiency, the equipment was fitted with shredder blades for shredding the input bio-waste in order to achieve the optimum size reduction.

2. The expert panel assess the equipment in view of the project proponent claims that the Sterilwave can manage all types of bio-medical waste without segregating and treated biomedical waste can be disposed of as inert municipal solid waste. Proponent informed that, shredding efficiency increases with heterogeneous bio-waste, however it was observed that there may be the possibility of shredder blade getting jammed/ locked- up if homogenous bio-waste like body parts is fed, and therefore heterogeneous fed is recommended by proponent. However, projecting this equipment/treatment option to manage biomedical

waste without segregation is not feasible in Indian conditions in view of the diverse types and nature of bio-medical waste as categorized in the Bio-Medical Waste Management Rule, 2016.

3. During the assessment, two trial cycles passed the spore test with the make shift arrangements made in the equipment for conducting the test as per the sampling/analysis undertaken and report submitted by *Medical College Hospital, Thiruvananthapuram*. However, the spore test was done in such a way that the spore strip (in a vial) was suspended from the lid so that it is directly in front of the microwave cavity of the vessel. Thus the spores were exposed directly to the incoming microwave and for realistic assessment, spore strips need to be placed away from this microwave cavity. The equipment should have inbuilt provisions on the vessel wall or the inner side of lid where the spore strips can be mounted in small vials. Unable to get the assessment results in the third cycle, as the vials containing spore strip got accidentally detached and shredded along with the waste.

4. Although proponent claimed that the equipment does not need water, however during the field trial it was observed that provision for continuous water supply were provided and needed for cooling purpose and to supplement water content in the waste feed for better absorption of microwave. And this supplied water gets out of the system in the form of steam and condensate from the exhaust pipe fitted with HEPA filter. The exhaust steam could be a carrier of materials fed in the system. In cycle 3, the exhaust steam and condensate from the exhaust line was higher. Since, the internal temperature during the runs is hardly 100 to 105°C, there may be a possibility of heat resistant microbial flora in the exhaust stream. If the fed waste contains volatile organic fractions, there can be a probability of the volatile entities in the exhaust stream. During the assessment, filter papers kept in the exhaust box gained some weight probably due to absorption of chemicals in the exhaust stream. A thorough assessment of the exhaust stream/ condensate is required to decide on the APCDs required in the exhaust line. The proponent informed that optional ozone based catalytic system can be provided to control odour and vapour management in the exhaust line. Thus, this led to the indication that the possible emission of chemical entities in the exhaust stream of the equipment. Further, detailed study and analysis of the exhaust condensate and filter paper are needed for better insight and to arrive at any specific conclusion.

979

वैद्य राजेश कोटेचा
सचिव
Vaidya Rajesh Kotecha
Secretary

भारत सरकार
आयुष मंत्रालय
आयुष भवन, 'बी' ब्लॉक, जी.पी.ओ. कॉम्प्लेक्स,
आई.एन.ए, नई दिल्ली–110023
Government of India
Ministry of Ayush
Ayush Bhawan, B-Block, GPO Complex,
INA, New Delhi-110023
Tel. : 011-24651950, Fax : 011-24651937
E-mail : secy-ayush@nic.in

Dear Ms. Leena Nandan,

D.O. No: L-11012/1/2022-AS
22nd August, 2023

As you are well aware, Ayurveda, Yoga, Unani, Siddha, and Homoeopathy (Ayush) health care facilities play a significant role in our country's healthcare landscape. While these facilities have been diligently following the Bio-Medical Waste Management Rules 2016, Ayush healthcare facilities are encountering certain challenges in the disposal of specific waste generated during various Ayush procedures. The waste arising from procedures such as Panchakarma (purificatory therapy) techniques like Vamana (therapeutic vomiting), churna (powders), Kashaya Kalka (residue of decoction), used oils, powders, and waste generated after various fomentation procedures like dhara, avagaha, etc., are currently not explicitly categorized under the existing BMW guidelines.

During the third meeting of the Central Monitoring Committee held on 18th July 2023, this issue was raised and discussed. It was recommended to examine the requirement of specific waste categories from Ayush health care facilities in the BMW guidelines to ensure their proper and safe management. In this regard, it is suggested to outline the draft of inclusion of these Ayush-specific waste categories in the BMW guidelines.

Accordingly, Ministry of Ayush is willing to contribute and forward the needful technical inputs for the guidelines within a period of one month after consultation with the stakeholders.

Pl. put up
AS(NPG)
23/8
Dir(VPM)

Looking forward for concurrence on above request.

With regards,

Yours sincerely,

(Rajesh Kotecha)

Ms Leena Nandan
Secretary
Ministry of Environment, Forest and Climate Change
Indira Paryavaran Bhawan, Jorbagh Road,
New Delhi – 110 003
(Email: secy-moef@nic.in)

AD(OR)
Imp.
Ms. PV
24/8

Ms. Apoorva

F. No.11/3/2022-HSMD
Government of India
Ministry of Environment, Forest & Climate Change
(HSM Division)

Level-II, Jal Wing,
Indira Paryavaran Bhawan
Jor Bagh Road, New Delhi-110003
Dated: 4th September, 2023

Office Memorandum

Sub: Ayush-specific waste management guidance framework under BMWM Rules, 2016 - reg.

This refers to a DO Letter dated 22-08-2023 from the Secretary (AYUSH) seeking the concurrence of MoEFCC to engage with stakeholders for the development of a guidance framework on the management of AYUSH-specific waste categories.

2. The matter was examined in the Ministry, and the undersigned is directed to inform that the MoEFCC concurs with the proposal wherein it was mentioned that the Ministry of AYUSH would engage with AYUSH stakeholders and submit draft inputs or guidance to CPCB, as may be appropriate.

3. It is also to inform that the Ministry of AYUSH may consider keeping a representative of CPCB in the working group or committee to ensure that the inputs are aligned to the BMWM Rules, 2016. The draft inputs, so finalized, may be submitted to CPCB, under intimation of MoEFCC.

4. This issues with the approval of the Competent Authority.

(Ved Prakash Mishra)
Director (HSMD)

To,

The Secretary
Ministry of Ayush,
Ayush Bhawan, B-Block, GPO Complex,
INA, New Delhi-110023

Copy for information to:

- The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Shahdara, Delhi-110032

F. No. HSM-11/3/2022-HSM
Government of India
Ministry of Environment, Forest & Climate Change
Hazardous Substances Management Division (HSMD)

Indira Paryavaran Bhawan
Jorbagh Road, Aliganj
New Delhi-110003

Date: 4.03.2024

To,

1. The Secretary In-charge, Health Department
   All States/ Union Territories

2. The Chairman(s)
   All State/ Union Territory
   Pollution Control Boards/ Committees

Sub: Compliance in M.A. no. 98/2022 in O.A. No. 180/2021 titled as Mukul Kumar vs State of Uttar Pradesh pending before Hon'ble NGT, Principal Bench - reg.

Ref: i. NGTs Order dated 12.01.2024

ii. NGTs Order dated 23.01.2023

Sir,

This refers to the order dated 23.01.2023 passed by the Hon'ble NGT, PB in MA no. 98/2022 in OA no. 180/2021 titled as Mukul Kumar vs State of Uttar Pradesh wherein it was directed by the Hon'ble Tribunal that CMC may continue monitoring and file further compliance status report as per the direction in the last part of the order (as stated below):

> *"25. The CMC may compile a national report as on 30.04.2022, based on reports received from the state level committees who may give their reports after compiling reports from the districts which may be uploaded on its website."*

2. The matter was last listed before the Hon'ble NGT on 12.01.2024, wherein it was observed that the reports on behalf of Andhra Pradesh, Meghalaya, Punjab, Tripura, Himachal Pradesh, Madhya Pradesh, Haryana, Tamil Nadu, Puducherry, J&K, Chhattisgarh, Uttar Pradesh and Goa have been filed & the reports from other States/UTs are still awaited. In this regard, it is submitted that the Hon'ble NGT had asked the MoEFCC to compile and submit the reports od States/ UTs, and the States/ UTs are asked to make their information available to MoEFCC to facilitate such compilation. However, no such information has been provided so far.

3 In view of the above, it is requested that all SPCBs/ PCCs and State Health Departments may coordinate among themselves, and provide information on the implementation of BMWM Rules, 2016 as per the Annexure (Copy enclosed), at the earliest, covering the following aspects:

- Constitution of institutions for monitoring the implementation of Bio-medical Waste Rules, 2016
- Factual Information on waste generation and requirement of Additional CBMWTFs, and
- Remedial Actions taken by States

4 This issues with the approval of the Competent Authority.

Encl: As Above

(Ved Prakash Mishra)

Director

Annexure-I (Information of last 5 years)

Year	Constitution of institutions for monitoring the implementation of BMW rules,2016			
	State Level Committee Constituted (Yes/No)	No. of meetings held	District Level Committee Constituted (Yes/No)	No. of meetings held

Year	Factual Information on requirement of Additional CBMWTFs			
	Total Quantity of BMW generated (kg/day)	No. of CBMWTFs	Environmental Compensation levied	Whether 75km radius be reduced (if Yes, specify/ No)

State	Remedial Actions taken by States			
	Total No. of Healthcare facilities	Name & No. of non-compliant units	Directions issued to non-compliant units	Environmental compensation levied