

Chapter VI: Management of special waste

This chapter covers management of bio-medical wastes, electric and electronic waste (e-waste), plastic waste and construction & demolition waste.

Brief Snapshot of the Chapter

- Bio medical waste (BMW) generated by households was not segregated at source in any of the test-checked ULBs. Consequently, mixed waste, including household BMW, was being transported and dumped in landfill or plant sites.
- Except Nagar Nigam Ghaziabad, ULBs did not establish contractual arrangements with Common Bio-medical Waste Treatment Facility for management of BMW.
- Uttar Pradesh Pollution Control Board (UPPCB) did not have details regarding the generation, collection and disposal of e-waste in the State from 2016-17 to 2020-21.
- No activity was being carried out in ULBs to collect and channelise e-waste to authorised dismantlers/recyclers, except in case of NN Ghaziabad. Further, e-waste was found dumped in the premises of four test-checked ULBs.
- A total of 298.82 MT of banned plastic was seized and a penalty amount of ₹ 3.24 crore was collected in 35 test-checked ULBs. However, only 203.88 MT of the seized banned plastic was disposed of, while the remaining 94.95 MT was in the possession of the test-checked ULBs as of March 2022.
- Test-checked ULBs failed to make arrangements for designated suitable places or provide receptacles for the collection of construction and demolition waste, except for NN Ghaziabad and NN Lucknow.

6 Management of Special Waste

As per Section 7.1 of MSWM Manual, 2016, Special waste includes Bio-medical waste (BMW), Electric and Electronic waste (e-waste) and Plastic waste. Further, construction and demolition waste comprising building materials, debris and rubble resulting from construction and demolition of any civil structure are covered under the Construction and Demolition Waste Management Rules, 2016.

Special wastes are also generated at household level, quite frequently they end up in the mixed MSW stream due to improper collection systems or lack of segregation at source. Management of these special wastes is discussed in succeeding paragraphs.

6.1 Bio-Medical Waste (BMW)

Bio-medical waste (BMW) is defined as any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or

testing of biological or in health camps. The management of BMW is governed by BMW Management Rules, 2016 and BMW Management (Amendment) Rules, 2018. Common Bio-medical Waste Treatment Facility (CBMWTF) are responsible to ensure timely collection of BMW from the premises generating BMW (Occupier) and take all necessary steps to ensure that the collected BMW is transported, handled, stored, treated and disposed of without any adverse effect to the human health and the environment.

6.1.1 Non-segregation of BMW generated by households

As per Part 2(12) of Schedule I of BMW Management Rules, 2016, ULBs were required to collect segregated BMW generated by households and establish an arrangement with the Common Bio-medical Waste Treatment Facility (CBMWTF) to collect this waste either from the Material Recovery Facility or directly from households for final disposal.

Audit observed that BMW generated by households was not segregated at source in any of the test-checked ULBs. Additionally, except for NN Ghaziabad, ULBs did not enter into contractual arrangements with CBMWTFs. Consequently, mixed waste, including household BMW, was being transported and dumped in landfill or plant sites, in violation of the BMW Management Rule, 2016.

The State Government did not provide response to the audit observation as of June 2024.

6.1.2 Unauthorised Occupiers

As per Rule 10 of the BMW Management Rules, 2016, every occupier or operator handling bio-medical waste should obtain authorization from UPPCB.

Audit observed that during the calendar years 2017-21, a significant number ranging from 17 to 43 *per cent* of occupiers in the State were operating without proper authorization from UPPCB as detailed in **Appendix 6.1**.

In reply (June 2023), the State Government stated that UPPCB had issued notices to all unauthorized occupiers through respective Regional Offices and directions were given to ensure compliance with the rules.

6.1.3 Incomplete Annual Report

As per the BMW Management Rules, 2016 and BMW Management (Amendment) Rules, 2018, State Pollution Control Boards are responsible for compiling and submitting an annual report to CPCB in a prescribed format (Form IVA) by 31 July of every year for the period from January to December of the preceding calendar year.

Audit observed that the UPPCB prepared annual report with deficient details/information, which resulted in the unavailability of the required data on the category wise quantity of BMW, *viz.*, Yellow, Red, White and Blue and the details of treatment and disposal methods (such as incineration, autoclave, *etc.*). The specific details of BMW generation and disposal during the calendar years 2016-21 are provided in **Appendix 6.2**.

In reply (June 2023), the State Government stated that UPPCB was preparing Annual Report as per BMW Rules, 2016. State Government further stated directions were given to Regional Offices of UPPCB for providing details on the category wise quantity of BMW. However, State Government did not provide reply addressing the issue raised in the audit for not preparing Annual Report in the prescribed format.

6.1.4 Third party audit of common bio-medical waste treatment facility

As per Schedule III, Clause 6(xi) of the BMW Rule 2016, UPPCB was responsible for undertaking and supporting third-party audits (TPA) of common bio-medical treatment facilities in the State.

According to the information provided by UPPCB for the year 2021, there were 22 operational CBWTFs in the State. However, UPPCB did not provide information regarding TPA conducted in CBWTFs. As a result, conduct of TPA of CBWTFs could not be assessed in Audit.

In reply (June 2023), the State stated that UPPCB had issued (May 2023) directions to all its regional offices to ensure regular compliance with the prescribed rules.

6.2 Electric and electronic waste (e-waste)

The e-waste Management Rules, 2016 were notified by Government of India in March 2016 which became effective from 1 October 2016. Under the Rules, the responsibilities of State Pollution Control Boards include inventorisation of e-waste, grant and renewal of authorisation to manufacturers, dismantlers, recyclers and refurbishers and maintenance of online information regarding authorisation granted to manufacturers, dismantlers, recyclers and refurbishers.

According to the information (*Appendix 6.3*) provided by UPPCB, the number of manufacturer, refurbisher, collection centres, dismantlers and recyclers for management e-waste in the State increased from 30 in the year 2017 to 116 in the year 2021. All 116 units were registered by UPPCB during 2021, though unregistered establishment ranged between 13 to 24 *per cent* during 2017-20.

Audit observed that UPPCB did not have details regarding the generation, collection and disposal of e-waste in the State from 2016-17 to 2020-21. As per Annual Report for the period up to March 2022 submitted (October 2022) to CPCB, UPPCB did not receive information from industries on category wise waste collected along with their quantities on a monthly average basis, details of material recovered from recycling of e-waste and quantity of CFL received at treatment, storage and disposal facilities.

In reply (June 2023), the State government stated that annual report was prepared and compiled as per format of CPCB.

Reply is not acceptable, as the requisite information in respect of e-waste collected, material recovered from recycling of e-waste *etc.*, was not provided in the annual report as envisaged in E-waste Management Rules 2016.

6.2.1 Status of compliance to e-waste Management Rules

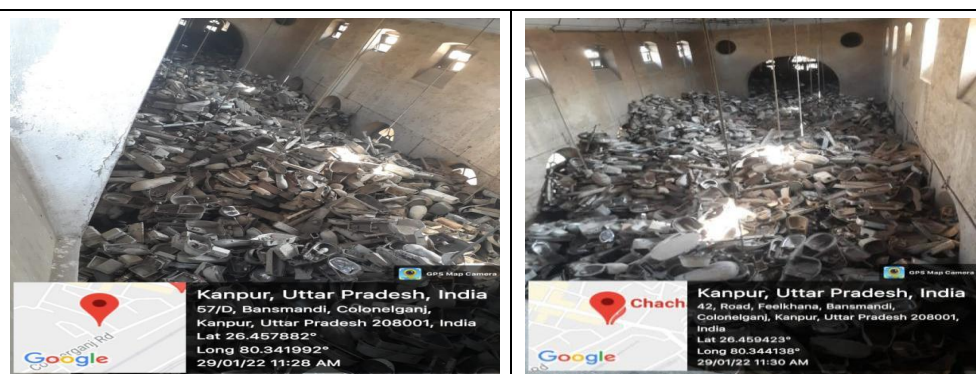
The status of compliance in the test-checked ULBs with the provisions of e-waste management rules is as discussed below:

6.2.1.1 Retention of e-Waste by test-checked ULBs

Rule 15 of the e-Waste Management Rules, 2016 stipulates that every manufacturer, producer, bulk consumer, collection center, dealer, refurbisher, dismantler and recycler may store e-waste for a maximum period of one hundred and eighty days.

Audit observed that e-wastes were dumped in their premises by four¹ test-checked ULBs over the course of several years as indicated in following photographs:

Photograph 6.1



NN Kanpur (e-waste dumped more than 3 years)



NN Ghaziabad (e-waste dumped since approximately 3 years)

¹ NN Kanpur, NN Ghaziabad, NPP Auraiya and NPP Utraula

	
NPP Auraiya (e-waste dumped from last several years)	NPP Utraula Balrampur (e-waste dumped from last several years)

Audit noticed that aforementioned four test-checked ULBs did not dispose of the e-waste and dumped it in their premises instead of channelizing these through authorized agencies for proper disposal. Retention of e-waste by ULBs was in violation of the E-Waste Management Rules, 2016.

In addition, test-checked ULBs did not maintain the required records indicating the nature and quantity of e-waste generated, stored and disposed. Thus, ULBs did not plan or monitor management of e-waste effectively.

The State Government stated (June 2023) that necessary action would be started for disposal/auction of e- waste in NN Kanpur.

6.2.1.2 Responsibility of ULBs

Schedule IV of E-waste Management Rules, 2016 stipulate the following responsibilities of ULBs:

- (i) To ensure that e-waste if found to be mixed with MSW, it is properly segregated, collected and channeled to registered recyclers or refurbishers.
- (ii) To ensure that e-waste pertaining to orphan products² is collected and channelised to authorised registered recyclers or refurbishers.

Audit observed that e-waste was not handed over separately by the households in any test-checked ULBs, but instead was mixed with MSW. However, no activity was being carried out in ULBs to collect and channelise e-waste to authorised dismantlers/recyclers, except in case of NN Ghaziabad³. Further, test-checked ULBs did not possess any information regarding quantity of e-waste generated.

² 'Orphaned products' are defined under E-Waste Management Rules, 2016 as non-branded or assembled electrical and electronic equipment as specified in Schedule-I of the Rules or those produced by a company which has closed its operations.

³ NN Ghaziabad made contractual agreement with M/s Attero Recycling Private Limited for collection, transportation and recycling/processing/disposal of e-waste since August 2022.

The State Government did not furnish (June 2024) reply on the audit observation.

6.3 Management of Plastic Waste

The Plastic Waste Management Rules, 2016 were notified by Government of India on 18 March 2016. Rule 6 (1) of the Plastic Waste Management Rules, 2016 stipulates that every local body is responsible for the development and establishment of infrastructure for the segregation, collection, storage, transportation, processing and disposal of plastic waste, either independently or by engaging agencies or producers.

According to the information provided by UPPCB, the existing disposal capacity for plastic waste in the year 2020-21 was 722.50 TPD, whereas the estimated generation was 1,030 TPD (*Appendix 6.4*). Thus, the existing infrastructure in the State had inadequate disposal capacity as compared to estimated generation of plastic waste.

Furthermore, the audit did not find proper management practices for the disposal of plastic waste in the test-checked ULBs. Plastic waste was not being segregated in any test-checked ULB (except NN Ghaziabad)⁴. In the absence of segregation, all the test-checked ULBs were collecting and transporting mixed waste to the landfill site. These ULBs also did not ensure channelization of recyclable plastic waste fraction to recyclers. Awareness among all stakeholders about their responsibilities was not satisfactory in any test-checked ULBs and no evidence/documentation regarding campaigning of plastic waste management was found in any test-checked ULBs, except NN Ghaziabad.

In reply (June 2023), the State Government stated that all ULBs in the State have received funding for the civil construction and machinery of Material Recovery Facilities (MRF) for the segregation of plastic waste for resource recovery. Additionally, Waste-to-Energy plants with a total capacity of 3,850 TPD are being set up in Ghaziabad, Muzaffarnagar and Agra. However, State Government did not provide specific response to the audit observation regarding failure of ULBs to comply with Plastic Waste Management Rules 2016.

6.3.1 Disposal of banned plastic seized by ULBs

The Uttar Pradesh Plastic and Other Non-Biodegradable Garbage (Regulation) Act, 2000 was enacted (November 2000) to regulate the use and disposal of plastic and other non-biodegradable garbage. The Government of Uttar Pradesh issued a notification (July 2018) under the Uttar Pradesh Plastic and Other Non-Biodegradable Garbage (Regulation) Act, 2000 for prohibiting the use, manufacture, sale, distribution, storage, transport, import or export of plastic carry bags, irrespective of their thickness. Additionally, it also prohibited the use, manufacture, sale, distribution, storage, transport, import, or export of cups, glasses, plates, spoons, tumblers, *etc.*, made of plastic or thermocol, intended for disposable use after one-time use.

⁴ Segregation of plastic waste was being carried out at MRF level in NN Ghaziabad.

Audit observed that during raids conducted in 36 out of 45 ULBs, a total of 298.82 MT of banned plastic was seized and a penalty amount of ₹ 3.24 crore was collected as detailed in **Appendix 6.5**. However, only 203.88 MT of the seized banned plastic were disposed of, while the remaining 94.95 MT was in the possession of the test-checked ULBs. Furthermore, nine⁵ out of the 45 test-checked ULBs did not conduct any raid. During the Joint Physical Verification, it was observed that banned plastic waste was being thrown into dumping sites indicating ineffective implementation of the ban on prohibited plastic.

In reply (June 2023), the State Government stated that all banned and seized plastics were sent to cement factories for disposal, as well as provided to NHAI and other road construction organizations for use as charcoal. However, the reply is in contradiction of information provided by test-checked ULBs regarding undisposed seized plastics.

6.4 Construction and Demolition (C&D) Waste

The Construction and Demolition Waste Management Rules, 2016 were notified by the Central Government on March 29, 2016. These rules are applicable to all waste generated from the construction, remodelling, repair, and demolition activities of any civil structure by individuals, organizations or authorities. This includes waste such as building materials, debris and rubble.

6.4.1 Status of generation of C&D waste

Audit noticed that none of the test-checked ULBs have prepared any plans or bye-laws for the collection, transportation and processing of C&D waste. Furthermore, UPPCB does not have a systematic⁶ database on C&D waste. ULBs were not furnishing annual information on C&D waste to UPPCB as required under the C&D Waste Rules, 2016. Consequently, the information regarding the quantity of C&D waste generated in the State and test-checked ULBs was not available. Moreover, none of the test-checked ULBs (except NN Ghaziabad) could provide records or reports pertaining to the generation, collection, transportation and processing/disposal of C&D waste. As a result, the audit could not ascertain the quantity of C&D waste generated in the State. Absence of quantifying the C&D waste adversely impacts the capacity planning for processing facilities required for its disposal.

In reply (June 2023), the State Government stated that C&D waste policy has been formulated. The State Government further stated that Uttar Pradesh Municipal Solid Waste (Management & Handling) and Sanitation Rules, 2021 include a clause about C&D waste. However, the specific issue raised in the audit, *viz.*, non-submission of annual information by ULBs to UPPCB and unavailability of records for generation/processing of

⁵ NPP Pilibhit, NPP Sahabad Hardoi, NPP Mahmudabad Sitapur, NPP Shamli, NPP Deoband Saharanpur, NP Bithoor Kanpur, NP Baldeo Mathura, NP Katra Shahjahanpur and NP Kaptanganj Kushinagar.



⁶ As per C&D Waste Management Rules 2016, each ULB requires to submit the systematic data regarding generation collection, transportation, processing, landfilling etc. through Form III to SPCB annually.

C&D wastes in test- checked ULBs, was not addressed in the replies of the State Government.

6.4.2 Non-identification of site for disposal of C&D waste

As per Rule 8 (2) of the Construction and Demolition Waste Management Rules, 2016, the State Pollution Control Board or Pollution Control Committee is responsible for granting authorization to C&D waste processing facilities.

As per information provided (December 2021) by UPPCB to Audit, UPPCB did not receive any applications for authorization for the C&D waste processing facilities during 2016-21. Audit further observed that test-checked ULBs failed to make arrangements for designate suitable places or provide receptacles for the collection of C&D waste, except for NN Ghaziabad and NN Lucknow. During the Joint Physical Verification conducted in the test-checked ULBs, it was observed that due to the absence of a debris disposal site, C&D waste was left on roadsides and mixed with Municipal Solid Waste (MSW) at the MSW dumping site in NPP Utraula. Further, C&D waste was found dumped at the solid waste processing plant in NPP Muzaffarnagar, as depicted in the following photographs:

Photograph 6.2	
	
C&D waste dumped at plant level in Muzaffarnagar (NPP Muzaffarnagar)	C&D waste lying on road side in Utraula (NPP Utraula)

Thus, it is evident that compliance with the disposal of C&D waste was not ensured at the State level or by the test-checked ULBs.

In reply (June 2023), the State Government stated that UPPCB had issued directions to all its regional offices for the authorization of C&D Waste processing facilities. C&D Waste processing plant was being established by Urban Development Department in seven Million plus Cities. State Government further stated that as per Annual Reports 2021-22 of UPPCB, 800 TPD capacities of C&D waste processing facilities are operational in

Noida and 400 TPD capacities C&D waste processing facility is partially operational in Ghaziabad⁷.

6.4.3 Status of establishment of C&D waste processing plant

State High Powered Committee (SHPC) approved (November 2021) Detailed Project Report (DPR) of ₹ 36.47 crore for the establishment of C&D waste processing plants with a cumulative capacity of 720 MT for the disposal of C&D waste in nine ULBs of the State (*Appendix 6.6*). Out of these nine proposed plants, tenders had been awarded for processing plants at Moradabad, Gorakhpur and Mathura (Vrindavan), while in six ULBs, the tendering was under process as of June 2023. Thus, the establishment of C& D waste processing plants was delayed despite approval of SHPC in November 2021.

The State Government did not furnish (June 2024) reply on the audit observation.

To sum up, The mixed waste, including household bio-medical waste, was being transported and dumped in landfill or plant sites. Details of generation, collection and disposal of e-waste in the State were not maintained. Further, banned plastic waste was being thrown into dumping sites, indicating ineffective implementation of the ban on prohibited plastic. ULBs failed to make arrangements for designate suitable places or provide receptacles for the collection of construction and demolition waste except NN Ghaziabad and NN Lucknow.

Recommendation 13: *The State Government should ensure proper collection, transportation and processing/disposal of bio-medical waste, e-waste, plastic waste and C&D waste. They should also ensure proper implementation of the respective Waste Management Rules in ULBs.*

⁷ UPPCB informed (December 2021) Audit that applications were not received for granting authorization to C&D waste processing facilities at Ghaziabad and NOIDA, however, UPPCB had issued Consent and NOC to these plants.