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(ii)]

Ministry of Environment and Forests

NOTIFICATION

New Delhi, the..... 2014

Draft Rules

Preamble: With a view to improving Municipal Solid Waste Management practices and promoting scientific processing and disposal of waste in the urban areas , Ministry of Environment & Forests , Govt of India had notified MSW Rules, 2000 on 25th October , 2000 with a mandate to urban local bodies to implement the Rules by 31/12/2003. An appraisal of implementation has revealed that desired results have not been achieved even after 10 years' of the deadline prescribed for various reasons. There is therefore an urgent need to revisit the rules for the protection of public health and environment giving a thrust on waste minimization , source segregation , recycling , promoting informal sector of rag pickers and recyclers in collection of recyclable material from source of waste generation and/ intermediate material recovery facilities optimum utilization of all components of waste using appropriate technologies with thrust on decentralized waste processing wherever feasible leading to achieving an objective of Zero Waste going to landfills. Rules also need to provide for cost recovery by levy of user fees for the sustainability of the Municipal solid waste management systems . Draft Municipal Solid (Management and Handling) Rule,2013 prepared accordingly and were notified on ----- for inviting objections and suggestions from the persons likely to be affected thereby . After careful consideration of all objections and suggestions received, Govt of India hereby notifies Municipal Solid waste (Management and Handling) Rules, 2014 in supersession of MSW Rules, 2000.

1. Short title and commencement--

- (1) These rules may be called Municipal Solid Waste(Management and Handling) Rules, 2014;
- (2) They shall come into force on the date of their final publication in the Official Gazette.

2. Application - These Rules shall apply to every Urban Local Body ,

gram Panchayats declared as census town/urban centres by the Registrar General & Census Commissioner, India, **notified areas/notified industrial townships notified area committees** , areas under the Indian Railways, defense establishments in the country and every waste generator living or carrying out any business , trade or calling therein.

3. Definitions - In these rules, unless the context otherwise requires,--

- i. **"Aerobic composting"** means a controlled process involving microbial decomposition of organic matter in the presence of oxygen.
- ii. **"anaerobic digestion"** means a controlled process involving microbial decomposition of organic matter in absence of oxygen;
- iii. **"authorization"** means the permission given by the State Pollution Control Board or Committee as the case may be, to the "operator of a facility" or "urban local body ", or any other agency responsible for processing and /or disposal of municipal solid waste.
- iv. **biodegradable waste "** means any organic material that can be degraded by micro-organisms into simpler stable compounds;
- v. **"biomethanation"** means a process which entails enzymatic decomposition of the organic matter by microbial action to produce methane rich biogas;
- vi. **"buffer zone"** (PUT AS PER MSW RULES)
- vii. **"composting"** means a controlled process involving microbial decomposition of organic matter;

- viii. "construction and demolition waste" means the waste arising from building materials, debris and rubble resulting from construction, re-modelling, repair and demolition operation;
- ix. **"co processing"** means use of municipal solid waste as raw material or as a source of energy or both to replace or supplement the natural mineral resources and fossil fuels in industrial processes;
- x. **"disposal"** means the final and safe disposal of municipal solid waste on land in terms of the measures specified in schedule I to prevent contamination of ground-water, surface water, ambient air quality and source of animal or bird attraction ;
- xi. **"domestic hazardous waste"** domestic hazardous wastes means and includes waste such as discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used Ni.cd batteries, used needles and syringes, etc generated at the household level
- xii. **"dry waste"** means waste other than food waste and inerts and includes recyclable waste, non recyclable combustible waste and sanitary. Waste.
- xiii. **"dump sites"** means a land utilized by urban local body for unscientific disposal of municipal solid waste without following the principles of sanitary landfilling;
- xiv. **"facility"** means any establishment wherein the solid waste management processes namely segregation, recovery, storage,

collection, recycling, processing ,treatment and/or safe disposal are carried out.

- xv. **"form"** means a form appended to these rules;
- xvi. **"generator of waste"** means person or establishment or entity generating municipal solid waste;
- xvii. **"handling"** includes all activities relating to sorting, segregation, material recovery, collection, secondary storage, shredding, baling, crushing, loading, unloading, transportation processing and disposal of municipal solid wastes.
- xviii. **"inerts"** means wastes which are not bio-degradable, recyclable or combustible and includes non recyclable fraction of construction and demolition waste, street sweeping or dust and silt removed from the surface drains and any non recyclable waste arising out of infrastructure construction activities;
- xix. **"incineration"** means an engineered process involving burning or combustion of MSW to thermally degrade waste materials at high temperatures.
- xx. **"leachate"** means the liquid generated from municipal solid waste that seeps through solid waste or other medium and has extracts of dissolved or suspended material from it;
- xxi. **"materials recovery facility (MRF)"** means a facility where non-compostable municipal solid waste can be temporarily stored by the urban local body or any person authorized by the urban local body to facilitate segregation, sorting and recovery of various components of recyclable waste by informal sector of waste pickers or any other work force engaged for the purpose before the

waste is delivered or taken up for its processing or disposal;

- xxii. **"Municipal solid waste"** means and includes domestic waste (including sanitary waste), commercial waste, institutional waste, catering and market waste and other non residential wastes, street sweepings, silt removed/ collected from the surface drains, horticulture waste, construction and demolition (C&D) waste and treated bio-medical waste excluding industrial hazardous waste, bio-medical waste and e-waste generated in any urban local body area in either solid or semi-solid form.
- xxiii. **"municipal solid waste management"** means planning, implementation and enforcement of reduction, re-use, recovery and recycling of municipal solid waste in an environmentally sound manner and includes the storage of segregated municipal solid waste at source, primary collection from the source of waste generation, secondary storage, transportation, processing and safe disposal of municipal solid waste.
- xxiv. **"operator of a facility"** means a person or entity, who owns and/or operates a facility for handling of municipal solid waste which includes the urban local body and any other entity or agency appointed by the urban local body .
- xxv. **"Prescribed Authority"** means the Authority declared as prescribed authority under rule 4 and made responsible to perform the duties and undertake responsibilities as specified in rule 5;
- xxvi. **"primary collection"** means collecting, lifting and removal of segregated municipal solid waste from source of its generation including households, shops, offices and any other non-residential

premises or from any collection points or any other location specified by the urban local body;

xxvii. **"processing"** means the process by which municipal solid waste is transformed into new or recycled products;

xxviii. **"recycling"** means the process of transforming segregated solid waste into a new product or a raw material for producing new products;

xxix. **"refuse derived fuel (RDF)"** means segregated combustible fraction of municipal solid waste other than chlorinated plastics that can be used as fuel. It can be in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting combustible components of municipal solid waste;

xxx. **"residual waste"** means and includes the rejects from the MSW processing facilities which are not suitable for recycling or further processing and non recyclable untreatable inert wastes generated in the areas under the jurisdiction of the urban local body;

xxxi. **"sanitary landfilling "** means the final and safe disposal of post processing residual municipal solid waste and non recyclable inert wastes on land in a facility designed with protective measures against pollution of ground water, surface water and air fugitive dust, wind-blown litter, bad odour, fire hazard, animal menace, bird menace, pests or rodents, greenhouse gas emissions, POPs, slope instability and erosion;

xxxii. **"Sanitary Waste"** means wastes comprising of used diapers, sanitary towels or napkins, tampons, condoms, incontinence

sheets and any other similar waste .

- xxxiii. **"Schedule"** means a Schedule appended to these rules;
- xxxiv. **"secondary collection"** means collection of municipal solid waste (MSW) deposited at secondary waste storage depots/bins for onward transportation of MSW to the processing or disposal facility;
- xxxv. **"Secondary storage"** means the temporary containment of municipal solid waste at a public place in a covered bin or containers in a manner so as to prevent littering, attraction to vectors, stray animals and excessive foul odour;
- xxxvi. **"segregation"** means sorting and separate storage of various components of municipal solid waste namely biodegradable wastes (wet waste), non biodegradable wastes (dry waste- including recyclable waste, combustible waste sanitary waste and non recyclable inert waste,) , domestic hazardous wastes, e-waste and C&D wastes .
- xxxvii. **"stabilizing"** means the biological decomposition of biodegradable wastes to a stable state where it generates no leachate or offensive odours and is fit for application to farm land ,soil erosion control and soil remediation .
- xxxviii. **Street Vendor (put as per street vendor (protection and livelihood)act 2014**
- xxxix. **"tipping fee"** means a fee or support price determined by the urban local body or any state agency authorized by the state government to be paid to the concessionaire or operator for

handling one or more components of municipal solid waste

- xli. **"transportation "** means conveyance of municipal solid waste, either treated, partly treated or untreated from one location to another location in an environmentally sound manner through specially designed and covered transport system so as to prevent the foul odour, littering and unsightly conditions;
- xli. **"Treated bio-medical wastes"** means the wastes generated in hospitals and health care institutions which have been prescribed as treated in accordance with Bio-medical Waste (Management and Handling) Rule 1998, as amended from time to time;
- xlii. **"treatment"** means the method, technique or process, designed to modify physical, chemical and/or biological characteristics or composition of any waste so as to reduce its volume and potential to cause harm;
- xliii. **"Urban local body :** for the purpose of this rule urban local body means and includes the Municipal Corporation, Nagar Nigam, Municipal council, Nagar Palika , Nagar palika parishad, Municipal Board, Nagar Panchyat, Town Panchayat , notified industrial township, Notified Area, Notified Area Committee (NAC) and any village declared as census town or urban centre by the Registrar General & Census Commissioner, India from time to time.
- xliv. **"user fee"** means a fee imposed through a bye law by the urban local body on the waste generators residing or carrying out any trade, business or calling in the area under its jurisdiction to be levied for the sustainability of municipal solid waste management;

- xliv. **“viability gap funding”** means financial support determined by the urban local body or authorized state or central government agency to be paid to the concessionaire or operator of a municipal solid waste processing facility based on the output quantity of compost, biogas produced or energy/ power generated so as to cover or partly cover the difference between market price of the output and its production cost plus reasonable profit margin;
- xlvi. **“vermi composting”** is a process of conversion of bio-degradable waste into compost; using earth worms.
- xlvii. **“waste generator”** means and includes every person or group of persons, households, shops, workshops, public and private offices, hotels, restaurants, hostels, guest houses, vegetable, fruit, meat, fish markets, hospitals, nursing homes, industries and any other residential or non residential establishment, Indian railways and defense establishments which generate bio-degradable or non bio-degradable municipal solid waste or both during the course of their activities.
- xlviii. **“waste picker”** means a person or groups of persons informally carrying out the work of collection of reusable and recyclable municipal solid waste from the source of waste generation as well as picking up such wastes from the streets, bins, processing and waste disposal facilities for sale to recyclers directly or through intermediaries to earn their livelihood;

4. Duties and responsibilities of waste generators

Every Waste generator shall be responsible for the following:

1. He/she shall not litter on the streets, open spaces, drains or water bodies and shall segregate and store bio-degradable, non bio-degradable, domestic hazardous wastes separately in suitable bins at source and handover segregated wastes to waste collectors as may

be directed by the urban local body from time to time.

2. He/she shall wrap securely used sanitary waste as and when generated in a newspaper or suitable bio-degradable wrapping material and place the same in the domestic bin meant for non bio-degradable waste.

3. He/she shall store separately construction and demolition waste as and when generated and dispose of as per the directions that may be given by the urban local body from time to time.

4. He/she shall store separately horticulture waste, garden waste and dispose of the same as may be prescribed by urban local body from time to time.

5. He/ she shall pay the user fees or charges as may be prescribed by the urban local body from time to time to the waste collector or any person authorized by the urban local body for the sustainability of collection, transportation, processing and disposal of MSW and protection of public health and environment.

6. He/she shall ensure handing over municipal solid waste to waste collection agency authorized by urban local body as and when he/she organizes any event or gathering at any unlicensed place if any municipal solid waste is generated from such event. . At places where no such agency exists ,he/she shall intimate the urban local body at least three days in advance together with the fees as may be prescribed by the urban local body to facilitate collection of such waste.

5 Prescribed Authorities, their duties and responsibilities:

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The following shall be the Prescribed Authorities under these rules.

1. Ministry of Environment and Forests, Government of India
2. Ministry of Urban Development, Government of India
3. Ministry of fertilizers
4. Secretary–in-charge, Urban Development Department, in states/UTs.
5. Commissioner/ Director of Municipal Administration/ Director of Local Bodies in states/union territories
6. .District Magistrate/ District Collector/ Deputy Commissioner of district in state / union territory
7. Central Pollution Control Board
8. Urban local body
9. State pollution control board

5.1 Duties and Responsibilities of Ministry of Environment and Forests, Government of India

1. Shall constitute a central committee for monitoring and review of the implementation of the rules
2. Monitor the activities undertaken by CPCB and state PCBs/committees for the enforcement of the provisions of the rules
3. Undertake periodic review of the efficacy of these Rules, at least once in three years and carry out necessary amendments to strengthen the Rules facilitating better enforcement ,if required, in consultation with Ministry of Urban Development, Central Pollution Control Board and at least three representatives each from State Pollution Control Boards, Urban Development Departments/local self government departments of State Governments, Union territories, Urban local bodies and subject experts
4. Publish environmental standards/norms for adopting various technologies for processing/treatment and disposal of municipal solid waste from time to time including heavy metals, Polyaromatic Hydrocarbons (PAC) like dioxins &furans.

5.2 Duties and Responsibilities of Ministry of Urban Development, Government of India

1. Take periodic review of the measures taken by the states and urban local bodies for improving solid waste management practices and execution of SWM projects funded by the ministry and external agencies at least once in a year and give advice on taking corrective measures
2. Formulate National Policy and strategy on Municipal Solid Waste Management in consultation with stakeholders
3. Guide and facilitate states and UTS in formulation of State Policy and strategy on Municipal Solid Management based on National MSWM policy and national Urban Sanitation policy
4. Promote research and development in SWM sector and disseminate information to states and urban local bodies
5. Assist in training and capacity building of urban local bodies and other stakeholders
6. Provide technical manual and guidelines to states, UTs and urban local bodies on MSWM and on meeting performance standards.

5.3 Duties and Responsibilities of Ministry of Fertilizer, Government of India

1. The Ministry of Fertilizer shall check compost quality as per FCO norms
2. Shall promote co marketing of compost with chemical fertilizers as per Supreme Court directions in _.....

5.4 Duties and Responsibilities of the Secretary-in-charge, Urban Development Department/ Local Self Government department in all states and Union Territories (UT).

The secretary Urban Development Department or local self government who is in charge of urban local bodies in the state or union territory shall:

1. Create a state level Solid Waste Management Authority within six months from the date of notifications of these rules to function on a mission mode, at least for a period of five years for ensuring implementation and enforcement of these rules by all the urban local bodies within the time frame given in rule 7. The state government/UT shall determine the composition, powers, duties and functions of the authority.

Prepare a state policy and Municipal Solid Waste Management strategy for the State or the Union Territory in consultation with stakeholders including representative of waste pickers, which shall be consistent with the municipal solid waste (management & handling) rules, 2014, national policy on solid waste management and National Urban Sanitation Policy (NUSP) of the Ministry of Urban Development within one year from the date of notification of these rules. The policy shall lay emphasis on waste reduction, reuse, recycling, recovery and optimum utilization of various components of MSW to ensure minimization of waste going to the landfill and minimize impact of MSW on human health and environment .

3. Ensure implementation of provisions of these rules by all urban local bodies and panchayats declared as census towns/urban centres by the Registrar General & Census Commissioner, India from time to time.

4. Monitor the implementation of these Rules by the urban local bodies including Panchayats declared as urban centres in census of India at least twice a year in close coordination with secretary in charge of Panchayats.
5. Delegate powers to Commissioner/ Director of Municipal Administration/ Director of Local Bodies to monitor the performance of local bodies under their control
6. Ensure identification of suitable parcels of land for setting up of processing and disposal facilities for municipal solid wastes, through Metropolitan and district planning committees or town and country planning department, incorporate them in the master plans (land use plan) of the state/cities and allocate the same to the urban local bodies which do not have suitable land within one year for setting up processing and disposal facilities.
7. Direct the town planning department of the state and urban local bodies to ensure that while passing any development plan for group housing or for any commercial, institutional or any other non residential complex exceeding 200 dwelling or commercial or institutional units or having a plot area exceeding 10000 sq.meters, space shall be clearly demarcated in such plan for segregation and storage of Municipal Solid Waste and for decentralized processing, if so directed by the state government.
8. Facilitate formation of suitable clusters of contiguous urban local bodies, setting up common regional sanitary land fill for a group of cities and towns falling within 50 km (or more) radius from the regional facility on a cost sharing basis and ensure professional management of sanitary land fills as per these rules.
9. Arrange for training and capacity building of urban local bodies in managing MSW as per these rules

5.5 Duties and Responsibilities of Commissioner/ Director of

Municipal Administration/ Director of Local Bodies

1. Under the superintendence and control of Secretary in charge of Urban development/Local self government, he shall:
 - a. Ensure implementation of provisions of these rules by all urban local bodies falling under his supervision and control.
 - b. Monitor the implementation of these Rules by the urban local bodies under his control.
 - c. Arrange for training and capacity building of urban local bodies in managing MSW as per these rules
 - d. Facilitate formation of suitable clusters of contiguous urban local bodies, setting up common regional sanitary land fill for a group of cities and towns falling within 50 km (or more) radius from the regional facility on a cost sharing basis and ensure professional management of sanitary land fills as per these rules.

5.6 Duties and Responsibilities of District Magistrate/ District Collector/ Deputy Commissioner

1. Facilitate identification and allocation of suitable parcels of land for setting up municipal solid wastes processing and disposal facilities for Urban Local Bodies situated in his district in close coordination with the Secretary in charge of Urban Development Department/ Local Self Government, within one year from the date of notification of these rules.
2. Extend support to Secretary in charge of Urban Development/ Local Self Government Department in the implementation of provisions of these rules by all urban local bodies and Panchayats declared as census towns/urban centres situated in his/her district.

3. Take review of the performance of the Urban Local Bodies at least once in a quarter and take corrective measures in consultation with Secretary in charge of Urban Development/ Local Self Government Department/ Commissioner/Director of Municipal Administration/ Director of local bodies.

5.7 Duties and Responsibilities of Central Pollution Control Board

1. Co-ordinate with the State Pollution Control Boards and the Pollution Control Committees on the implementation of these rules and adherence to standards laid down in it.
2. Formulate the standards of ground water, ambient air, leachate in respect of all MSW processing facilities including composting, incineration, landfilling covering the standards of dioxins and furans.
3. Review emission standards and norms prescribed earlier for all MSW processing/treatment technologies / facilities and update them at least once in three years.
4. Review the implementations of the standards prescribed through state PCBs at least once in a year and compile the monitored data .
5. ;Review the proposals of state pollution control boards or committees on use of any new technologies for processing, recycling and treatment of municipal solid waste and approve the technology ,if found suitable for use in India and prescribe performance standards, emission norms for the same.
6. Assess the implementation of these rules by urban local bodies through State Pollution Control Boards and Pollution Control Committees.

7. Prepare a consolidated annual report on implementation of these rules on the basis of reports received from state pollution control boards and committees and put the same in public domain and submit to Ministry of Environment and Forests(MOEF).
8. Issue indicative guidelines for maintaining buffer zone restricting any residential, commercial or any other construction activity from the outer boundary of the waste processing and disposal facilities for different sizes of facilities handling more than 5 TPD municipal solid waste.
9. Publish Guidelines on environmental aspects of processing and disposal of municipal solid waste time to time to enable urban local bodies to comply with the provisions of the rules.
10. To provide guidance to states on inter-state movement of waste

5.8 Duties and Responsibilities of Urban local bodies:

The urban local bodies shall:

1. Prepare a municipal solid waste management plan as per state policy and strategy on municipal solid waste management within six months from the date of notification of state policy and strategy and get it approved from the state government or agency authorized by the state government.
2. Create public awareness through Information , Education and Communication (IEC) campaign and educate the waste generators on the following:
 - a. Not to litter,
 - b. Minimize generation of waste,
 - c. Reuse the waste to the extent possible
 - d. Practice segregation of wet bio-degradable waste , dry recyclable & combustible wastes and domestic hazardous wastes at source

- e. Wrap securely used sanitary waste as and when generated in a newspaper or suitable bio-degradable wrapping material and place the same in the domestic bin meant for non bio-degradable waste.
 - f. Storage of segregated waste at source,
 - g. Handover segregated waste to waste pickers, recyclers or waste collection agencies
 - h. Pay monthly user fees/charges to waste collectors, operators of the facility or any other persons duly authorized by the urban local body for sustainability of the SWM services ,
3. Direct the waste generators not to litter, to segregate the waste at source as per (2) above and hand over their segregated waste to the waste collector.
4. Educate its own and contract workers and their supervisors on doorstep collection of segregated wastes and on transporting them unmixed during primary and secondary transportation to processing and/or disposal facility.
5. Frame bye laws and Prescribe criteria for levy of spot fines within a range of Rs. 100/- to Rs. 5000/- from the waste generators who litter or fail to comply with the provisions of these rules and delegate power to appropriate officers of the urban local body to levy spot fines. .

6. Arrange for :

- a. Day to day Collection of segregated bio-degradable and non bio-degradable municipal solid waste from the door step of all households, (including slums and informal settlements) commercial, institutional and other non residential premises
- b. Easy access to waste pickers and recyclers for collection of segregated recyclable wastes such as paper, plastic, metal, glass, textile from the source of waste generation and from material recovery facilities.
- c. Involvement of communities in municipal waste management and promotion of decentralized processing of waste
- d. Cleaning of vegetable, fruit, meat and fish markets on a day

to day basis and promotion of setting up decentralized compost plant or bio-methanation plant at suitable locations in the markets.

- e. Sweeping of streets, lanes and by-lanes daily, on alternate days or twice a week depending on the density of population, commercial activity and local situation and transport of such sweeping separately from waste collected from the doorstep.
- f. Secondary storage of waste in covered container
Separate storage, collection, transportation ,processing of horticulture,parks and garden waste with focus on on site processing in the parks and gardens.
- h. Transportation of MSW in at least three separate streams as under:
 - i. Transportation of segregated wet Bio degradable and dry combustible waste (including wrapped sanitary waste) collected from households, markets and commercial ,institutional and other non residential establishments to the respective processing facilities
 - ii. Transportation of inert non recyclable street sweepings and silt collected from the surface drains directly to disposal facility
Transportation of Construction and Demolition (C&D) waste to C&D waste processing facility or for filling low lying areas other than water bodies for land reclamation or for preventing mosquito breeding at the locations duly approved by the local authority or for use as cover material at the sanitary landfills or any other purpose as approved by the State Pollution Control Board or Pollution Control Committee from time to time.
- iv. Establishing domestic hazardous deposition / delivery centre in city / town @one centre per 20 sq. Km or part thereof.and notify the timings of receiving domestic hazardous waste at such centre and arrange for safe storage !transportation and disposal st hazardous waste disposal facility as msy be directed by the state pollution control board committee from time to time.
- i. Construction, operation and maintenance of MSW processing facilities and associated infrastructure in house or with private sector participation or through any agency for optimum utilization of various components of MSW adopting any of the following technologies and adhering to the guidelines issued by MoUD from time to time and standards prescribed by CPCB. Preference shall be given to decentralized processing to minimize cost and environmental impacts:
 - i. Bio methanation, microbial composting facility, vermi composting, anaerobic digestion or any other appropriate processing for bio-stabilization of wet biodegradable wastes.
 - ii. Waste to energy processes for conversion of segregated dry non

recyclable combustible fraction of waste into energy or supplying segregated combustible waste for being used as feedstock to MSW/RDF based power plants, cement kilns nearby.

iii. C&D waste processing facility for optimum utilization of C&D waste making aggregates, bricks, paver blocks or any other useful product.

j. Undertake in house or through any other authorized agency, construction, operation and maintenance of Sanitary landfill and associated infrastructure as per schedule 1 for disposal of residual wastes as permitted under the rules and the CPCB guidelines issued from time to time.

7. Make adequate provision of funds for capital investments as well as operation and maintenance of solid waste management services in the annual budget ensuring that funds for discretionary functions of the urban local body have been allocated only after meeting the requirement of necessary funds for solid waste management and other obligatory functions of the local body as per these rules

8. Make an application in Form-I, for grant of authorization for setting up waste processing, treatment, recycling or disposal facility including landfills from the State Pollution Control Board or the Pollution Control Committee, as the case may be. Provided that in cases where the waste processing/ treatment facility is smaller than 5 tpd only intimation shall be given to state pollution control board / committee about location , technology to be adopted and the quantity of waste to processed.

9. Obtain authorization and consent from the State Pollution Control Board or the Pollution Control Committee, as the case may under provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 and Environment protection Act, 1986 for setting up waste processing facility ,other than incineration facility, in cases where

the capacity of waste processing facility exceeds the limit of 5 tpd and in all cases where waste disposal including landfill facility is to be set up and to ensure compliance with specified standards;

10 . Submit application for renewal of authorization at least sixty days before the expiry of the validity of authorization.

11. Prescribe from time to time user fees rate as deemed appropriate and collect the fees from the waste generators for the sustainability of collection, transportation, processing and disposal of municipal solid waste.

12. Prepare and submit annual report on the status of compliance of these rules during the calendar year on or before 28th February of the succeeding year to the secretary, In-charge of Urban Development Department/ Local Self Government department or Commissioner / Director Municipal Administration of the respective State Government/UT and to the concerned State Pollution Control Board or Committee.

13. Provide or ensure that the operator of a facility provides personal protection equipment namely uniform, fluorescent jacket, hand gloves, appropriate foot wear and masks to all workers for handling municipal solid waste and its use by the workforce shall be ensured.

14. Frame bye-laws, incorporating the provisions of these rules and ensure timely implementation.

15. Establish an efficient and transparent system of public grievances redressal

16. Levy fines on the spot as per the bye laws framed , from those who litter or violate these rules .

5.9 Duties and Responsibility of State Pollution Control Board/committee

1. The State / UT Pollution Control Board or the Pollution Control Committee, as the case may be, shall monitor the progress of implementation of these rules , emission norms for WtoE projects, landfills or adherence to condition as specified under the Schedules I and II.
2. The State Pollution Control Board or the Pollution Control Committee, as the case may be, after the receipt of the application, from the Urban local body in form I shall examine the proposal and make such inquiries as deemed fit.
3. While examining the proposal the State Pollution Control Board or the Pollution Control Committee, as the case may be, shall take into consideration the requirement of consent under Water Act and Air Act, views of other agencies like the State Urban Development Department, the Town and Country Planning Department, district planning committee or metropolitan area planning committee as may be applicable, Airport or Airbase Authority, the Ground Water Board and any other agencies as deemed appropriate who shall be given four weeks time to give their views, if any.
4. The State Pollution Control Board or the Pollution Control Committee shall issue the authorization in Form-II to the urban local body or an operator of a facility within a period of sixty days stipulating compliance criteria and standards as specified in Schedule I and II including other conditions, as may be necessary.
5. Initially provisional authorization shall be granted which shall be valid for a period of three years; to enable the urban local body or operator of the facility to demonstrate the operation of the plant as per the conditions of grant of authorization, environmental clearance, consents for establishment, and contract conditions with

the urban local body. The authorization shall be suspended or cancelled by the state pollution control board any time, if the urban local body or operator of the facility fails to operate the facility as per the conditions stipulated.

6. The State Pollution Control Board or Pollution Control Committee may on receipt of application for renewal, renew the authorization for five years at a time, after examining every case on merit and subject to the condition that there are no continuing violations of the provisions of the rules, standards or conditions specified in the authorization, consents or environment clearance.
7. The State Pollution Control Board or Pollution Control Committee may, after giving reasonable opportunity of being heard to the applicant and for reasons thereof to be recorded in writing, refuse to grant or renew an authorization.
8. In case of new technologies, where no standards have been prescribed by the Central Pollution Control Board, State Pollution Control Board or Pollution Control Committee, as the case may be, shall approach Central Pollution Control Board for getting standards specified.
9. The State Pollution Control Board or the Pollution Control Committee, as the case may be, shall monitor the compliance of the standards laid down by the CPCB and state pollution control board for various treatment technologies from time to time and monitor the standards regarding ground water, ambient air, leachate quality & treatment the conditions stipulated in the authorization and the standards specified in Schedules I and II annexed to these rules as and when deemed appropriate but not less than once in a year.
10. Give direction to waste generators from time to time for safe deposition of domestic hazardous wastes for its safe disposal at hazardous waste disposal facility.

11. Give directions to Urban Local Bodies for safe handling and disposal of domestic hazardous waste generated in households and non residential establishments.
12. Give permission for inter-state movement of waste.

6 . Compliance criteria for Management of municipal solid waste –

1. The urban local body shall adhere to the following compliance criteria in the matter of Municipal Solid Waste segregation at source, primary collection, cleaning of streets and surface drains, secondary storage, transportation, processing and the disposal of municipal solid waste at the facilities to be set up by the urban local body on their own or through an agency or an operator of a facility.

Sl. No.	Parameters	Compliance criteria
	1.Storage of segregated solid waste at source	<p>Littering and open burning of municipal solid waste shall be prohibited by all urban local bodies within the area covered under their jurisdiction within six months from the date of the notification of these rules.</p> <p>To facilitate compliance, the following steps shall be taken by the urban local body, namely : -</p> <p>(i) Create public awareness on</p> <ul style="list-style-type: none"> • reducing the generation of waste, • reusing the waste material to the extent possible,

		<ul style="list-style-type: none"> • process food waste through home composting or community composting, • separately store bio-degradable wastes (wet waste) and non bio-degradable including recyclable and combustible wastes (dry waste), • encourage rag pickers and waste purchasers (Kabaddiwalas) to take away segregated recyclable material stored at source, • wrap securely sanitary napkins/pads, tampons, infant and adult diapers, condoms, and menstrual cups before putting in domestic bin meant for non bio-degradable waste • Store separately domestic hazardous wastes such as contaminated paint drums, pesticide cans, CFL bulbs, tube lights, used Ni.cd batteries, used needles and syringes, health care waste, etc and • Store separately C&D waste at the source of waste generation. <p>(ii) Mandate citizens to store these segregated wastes at source in separate domestic/ trade bins and hand over these wastes separately to designated waste collectors</p>
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		for recycling, processing and disposal of MSW.
	2. Collection of municipal solid wastes	<p>(i) Organize door to door collection of segregated bio-degradable (wet) and non bio-degradable (dry) municipal solid wastes on a daily basis at pre informed timings from all residential and non residential premises including slums and informal settlements using motorized vehicles and/or containerized tricycles, handcarts or any other device which is suitable for collection of segregated waste without necessitating deposition of waste on the ground and multiple handling of waste.</p> <p>(ii) Bio-degradable wastes from fruits and vegetable markets, meat and fish markets, horticulture waste from parks and gardens, shall be collected separately and to the extent feasible market waste may be processed/ treated within the market area and horticulture waste within parks and gardens to make optimum use of such wastes and minimize the cost of collection and transportation of such waste;</p> <p>(iii) Large institutional premises, residential complexes shall be motivated and incentivized to process bio-degradable waste within their campus to the extent it is feasible to do so.</p> <p>(iv) Constructio</p>

		<p>n and demolition wastes or debris shall be separately collected and processed by the urban local body or agency appointed by it for the purpose of its processing and disposal without mixing the same with bio-degradable, recyclable or non recyclable combustible wastes that shall be collected from the door step. Similarly, dairy waste shall be collected separately and regulated as may be prescribed in the municipal bye-laws;</p> <p>(v) Appropriate user fees/charges shall be levied from the waste generator for sustainability of operations of solid waste management</p>
	3. Sweeping of street and cleaning of surface drains	<p>(i) Urban local body shall arrange for cleaning of roads, streets, lanes, bye lanes, surface drains and public places at regular intervals and use containerized tricycles, containerized handcarts, suitable motorized or non motorized devices for collection of such waste.</p> <p>(ii) This shall synchronize with the system of secondary storage and transportation of such waste without necessitating deposition of such waste on the ground.</p> <p>(iii) These wastes shall not be mixed at any stage with the MSW collected from the door step.</p>
	4. Secondary Storage	<p>(i) Segregated MSW collected from the door step as per 2 above shall, as far as practicable, be transported directly to</p>

		<p>respective waste processing facility having facility of sorting and recovery of recyclable waste and in absence of such arrangement, the waste collected from the doorstep shall be taken to waste storage depots for secondary storage of waste. These depots shall have covered containers for separate storage of bio-degradable (wet) waste and non bio-degradable (dry) waste collected from the doorstep.</p> <p>(ii) The street sweepings and silt collected from the surface drains shall not be left or accumulated on roadsides and shall be transported directly to waste disposal facility or shall be temporarily stored in covered bins/ containers kept separately for secondary storage of inert wastes at suitable locations for facilitating onward transportation of such waste to the disposal site. However, if the street sweepings contain bio-degradable or recyclable waste, such waste shall be segregated and sent to respective processing facility.</p> <p>(iii) The secondary storage vehicles/containers shall synchronize with transportation system to avoid multiple handling of waste.</p> <p>(iv) Secondary storage of waste in open spaces on the roadsides or open plots or in cylindrical concrete bins or open masonry bins shall be dispensed with.</p> <p>(v) Urban local bodies shall where necessary, establish and</p>
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		<p>maintain covered secondary storage facilities in such a manner as they do not create unhygienic and insanitary conditions around it. Following criteria shall be taken into account while establishing and maintaining storage facilities, namely :-</p> <p>a. Storage facilities shall be created and established by taking into account quantities of waste generation in a given area and distance required to be travelled by the waste collectors to deposit the waste at the storage facility . A storage facility shall be so placed that it is accessible to users.</p> <p>b. Storage facilities to be set up by urban local bodies or any other agency shall be so designed that waste stored is not exposed to open atmosphere and shall be aesthetically acceptable and user-friendly and shall not be accessible to stray animals and birds;</p> <p>c. Storage facilities should be a covered bins or containers, shall have 'easy to operate' design for handling, transfer and transportation of waste. Bins for storage of bio-degradable wastes shall be painted green, those for storage of recyclable wastes shall be painted blue and those for storage of street sweepings and silt shall be painted</p>
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		<p>black;</p> <p>d. Manual handling of waste shall be minimized and waste handlers shall be given personal protection equipment to avoid direct contact with the waste.</p> <p>(v) Construction & Demolition (C&D) waste shall be separately stored in enclosed areas or containers separately without mixing this waste with waste collected from door step or street sweepings.</p> <p>(vi) Bio-medical wastes, industrial wastes, e-waste and domestic hazardous wastes shall not be brought to the secondary waste storage depots or mixed with municipal solid wastes and such wastes shall be handled as specified in specific rules framed for management of such wastes. Domestic hazardous waste may be handled as directed by the State PCB or committee.</p> <p>(vii) Secondary storage bins if placed shall be cleaned at regular intervals at least once in a month and shall be painted at least once in a year .</p>
	5. Material recovery facilities	<p>The urban local body shall designate temporary storage spaces and setup Material Recovery Facility where non bio-degradable/recyclable Municipal Solid Waste collected from the doorstep shall be temporarily stored by the urban local body/operator of the facility</p>

		<p>before MSW processing and/or disposal is taken up in order facilitate segregation, sorting and recovery of various components of recyclable waste by informal sector of waste pickers or any other staff or agency engaged by the urban local body for the purpose. Such sorting facilities shall be so designed that the municipal solid waste stored is not exposed to open atmosphere and shall be user-friendly;</p>
	<p>6. Transportation of municipal solid wastes</p>	<p>(i) Waste collected from the door step in motorized vehicles shall be directly transported to the processing facility through material recovery facility to be set up at the waste processing site or to the transfer station/ transfer point/ waste storage depots for facilitating, sorting and bulk transfer of waste to the processing facility in large hauling vehicles/containers.</p> <p>(ii) Vehicles used for transportation of wastes shall be covered and shall have a facility to prevent waste spillage and leachate dropping from the vehicles on the ground en-route to the processing/disposal facility. Waste should not be visible to public, nor exposed to open environment preventing their scattering.</p> <p>(iii) The waste stored at the secondary waste storage depots in covered bins or containers shall be attended daily and waste picked up before container start</p>

		<p>overflowing;</p> <p>(iv) Bio-degradable waste stored in green and recyclable and combustible and domestic inert waste stored in blue containers at the waste storage depots shall be transported to respective processing facilities in a segregated manner and the inerts street sweepings and silt collected from the drains shall be stored in black containers and shall not be allowed to be mixed with the waste collected from the door step or those stored in green or blue containers. Such inert waste shall be directly taken to waste disposal facility or to the processing facility, if and when created for processing of such inert waste.</p> <p>(v) Separate transportation of domestic hazardous waste shall be arranged as directed by the State Pollution Control Board</p> <p>(vi) Construction and Demolition (C&D) waste shall be transported in covered vehicles separately to C&D waste processing facility</p> <p>(vii) Transportation vehicles shall be covered and so designed that multiple handling of wastes, prior to final disposal, is avoided.</p>
	7. Processing of municipal solid wastes	Urban local bodies shall adopt suitable technology or combination of appropriate technologies, with

		<p>emphasis on decentralized processing to make use of all components of wastes that can be processed so as to minimize burden on landfill. Following criteria shall be adopted, namely : -</p> <ul style="list-style-type: none"> (i) The biodegradable wastes shall be processed by bio-methanation, composting, vermi composting, anaerobic digestion or any other appropriate biological processing for stabilization of wastes. It shall be ensured that composting or any other end product shall comply with standards as specified in Schedule -II and also ensure that no damage is caused to the environment during this process; (ii) to the extent feasible market waste may be processed/ treated within the market area and horticulture waste within parks and gardens to make optimum use of such wastes and minimize the cost of collection and transportation of such waste (iii) Dairy waste shall be used for bio-methanation / vermi-composting / aerobic composting, either separately or with other biodegradable MSW. (iv) Arrangement shall be made to provide segregated recyclable material to the recycling industry through waste pickers or any other agency engaged or authorized by the urban local body for the purpose. (v) The residual combustible
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		<p>wastes shall be utilized for supplying as a feedstock for preparing Refuse Derived Fuel (RDF) or for generating energy/power from the waste by adopting proven waste to energy technologies for which emission standards as well as standards for dioxins and furans have been prescribed by the Central Pollution Control Board.</p> <p>(vi) Non recyclable plastics and other high calorific content waste may be utilized for co-processing in cement kilns or for polymer or fuel production or manufacturing of products such as door panels and the like nature.</p> <p>(vii) C&D and other inert wastes shall be utilized for making bricks, pavement blocks, construction materials such as aggregates etc.</p> <p>(viii) Urban local body or the operator of a facility planning to use other state-of-the- art technologies shall approach the Central Pollution Control Board to get the standards laid down before applying for grant of authorization.</p>
	8. Disposal of municipal solid wastes	<p>(i) The Land filling or dumping of mixed waste shall be stopped soon after the timeline as specified in Rule 10 for setting up and operationalization of sanitary landfill is over.</p> <p>(ii) The landfill shall only be permitted for non-usable, non-recyclable, non-biodegradable, non-</p>

		<p>combustible and non-reactive inert waste and other wastes such as residues of waste processing facilities as well as pre-processing rejects from waste processing facilities and the landfill sites shall meet the specifications as given in Schedule -I, however every effort shall be made to recycle/reuse the rejects to achieve the desired objective of zero waste going to landfill;</p> <p>(iii) The landfill site shall provide an appropriate facility for sorting, storing and transportation of recyclable material to the processing facility and ensure that such wastes do not get landfilled;</p> <p>(iv) All old open dumpsites and existing operational dumpsites shall be carefully investigated and analyzed about their potential of bio-mining and bio-remediation and actions shall be taken accordingly in cases where such course of action is found feasible. In absence of such potential of dumpsite. It shall be scientifically capped as per landfill capping norms to prevent further damage to the environment.</p>
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7. Compliance criteria for setting-up MSW processing and treatment Facility

1. The Urban Local Body or State Agency Authorized by Urban Development Department of the State Government / UT

shall identify land for setting up the MSW processing and treatment facilities and notify such sites.

2. The operator of the Facility shall design and set up the facility as per the technical guidelines issued by the Central Pollution Control Board (CPCB) in this regard from time to time and the CPHEEO Manual.
3. The operator of the Facility shall obtain the approval from the State Pollution Control Board or Pollution Control Committee.
4. The State Pollution Control Board/ Committee shall monitor the setting and operation of the MSW processing and treatment Facility.
5. The operator of the Facility shall be responsible for the safe and environmentally sound operations of the MSW processing and treatment Facility and its closure and post closure phase as per the guidelines issued by CPCB from time to time and the CPHEEO Manual.
6. The operator of the MSW processing and treatment Facility shall submit Annual Report in Form IV.

8. Compliance criteria and actions to be taken for MSWM in hilly areas

In the hilly areas, the duties and responsibilities of the urban local bodies shall be the same as mentioned in rule 5.8 with the additional clauses in rule 5.8 (4) as under:

1. Urban local body shall frame and prohibit citizen from littering wastes on the streets and give strict direction to the tourists not to dispose any non bio-degradable waste such as paper, water bottles, liquor bottles, soft drink canes, tetra packs, any other plastic or paper waste and any other bio-degradable waste on the streets or down the hills and instead deposit such waste in the litter bins that may be placed by the urban local body at all tourist destinations.

2. The urban local body shall arrange to convey the provisions of the bye-laws to all tourists visiting the hilly areas at the entry point in the town as well as through the hotels, guest houses/management where they stay and by putting suitable hoardings at tourist destinations.
3. Urban local body may levy solid waste management charge from the tourist at the entry point to make the SWM services sustainable.
4. Urban local body shall arrange to pick up all such segregated waste deposited in the litterbins on a day to day basis or authorize waste pickers or NGOs or any private agency to do so.
5. Door to door collection of domestic, commercial and other non residential MSW shall be carried out using small covered pick up vans from the areas which are accessible to such vehicles. The waste shall be picked up and transported in a segregated manner. These vehicles shall have special type of horn, to alert the waste generators about its arrival for MSW collection
6. Segregated waste collection from narrow lanes and inaccessible hilly areas shall be done using backpacks having small containers upto 50 litre capacity or local traditional load-bearing methods like pack animals, shoulder-poles or head-bands, bag-wheelers. The waste collectors shall be provided protective clothing and mask to avoid direct contact with Municipal Solid Waste and a whistle to announce their arrival for waste collection.
7. The waste collected from the doorstep shall be taken to the nearest point identified by the urban local body from the collection area for decentralized processing of bio-degradable waste.
8. Waste picker association, NGOs and private entrepreneurs shall be encouraged to take up the work of door to door collection of

segregated waste and decentralized bio-methanation or composting as may be deemed appropriate. The urban local body may provide viability gap funding to such entrepreneurs to ensure that bio-degradable waste get processed in a decentralized manner.

9. Urban local body shall identify and allot suitable space on the hills for setting up decentralized waste processing facilities. Step garden system may be adopted for optimum utilization of hill space.

10. Recyclable material, if collected by urban local body may be given away to recyclers for recycling of such waste.

11. Construction of landfill on the hill shall be avoided. If a suitable land could be identified in the plain areas down the hill within 25 km., a transfer station at a suitable enclosed location shall be setup to collect residual waste from the processing facility and inert waste. In case of non availability of such land, efforts shall be made to adopt zero waste concept and minimize waste going to landfill, it shall be ensured that by properly segregating , recycling and reusing of waste including rejects and inert wastes by converting such wastes into useable products.

12. Heavy penalty may be imposed by the urban local body on those who litter under 5.8 (3).

9. Waste to Energy.-

1. Any non recyclable waste having high calorific value of 1000 Kcal or more shall be utilized for generating energy and shall not be disposed of on landfills.

2. High calorific value waste shall either be directly utilized for energy production or by preparing Refuse Derived Fuel (RDF) for energy

production or give away as feed stock for preparing refuse derived fuel (RDF) .

3. High calorific wastes shall be used for co-processing in cement plants or for power generation in independently installed waste to energy power plants.
4. The urban local body or an operator of facility or an agency designated by them or an independent operator shall submit a proposal on the setting up of 'Waste to Energy' plant to the State Pollution Control Board or Committee for consideration.
5. The State Pollution Control Board or Committee, on receiving a proposal from urban local body or an operator on behalf of these authorities for setting up waste to energy facility other than small facility, treating less than 5 TPD waste, shall examine the same and grant permission. If the proposal includes the technology other than the one for which standards have been prescribed by the central pollution control board, the State Pollution Control Board or Committee shall forward the proposal with its recommendations to Central Pollution Control Board for prescribing suitable standards.
6. The operation and emission standards and other specifications shall be in consonance with the operation and emission standards prescribed for co-processing, incineration and for disposal of treated leachate and ash as given in Schedule II of these rules .

10 .Time Frame for Implementation

Necessary infrastructure for implementation of these rules shall be created by the urban local bodies and prescribed authorities as the case may be, on their own directly or by engaging agencies within the time frame specified below:

SI No.	Activity	Time limit from the date of notification of rules
	Creation of Solid waste management authority in terms of rule 5.4.1	
	Identification of suitable sites for setting up MSW processing Facilities	
	Identification of suitable sites for setting up common regional sanitary landfill facilities for suitable clusters of urban local bodies under 0.5 million population and for setting up common regional sanitary landfill (SLF) facilities or stand alone SLF by all urban local bodies having a population of 0.5 million or more .	
	procurement of suitable sites for setting up MSW processing facility and Sanitary landfill facilities	
	Enforcing waste generators to practice segregation of Bio degradable , recyclable/ combustible , domestic hazardous and inert municipal solid wastes at source ,	2 years
	Ensure door to door collection of segregated waste and its transportation in covered vehicles to processing /Disposal Facilities.	
	Ensure separate storage , collection and transportation Of Construction and demolition wastes	
	Setting up MSW processing facilities by all urban local bodies having 100000 or more population	
	Setting up MSW processing facilities by urban local bodies below 100000 population.	
	Setting up common or stand alone Sanitary landfills by or for all urban local bodies having 0.5 million or more population for the disposal of only such residual wastes from the processing facilities as well as untreatable inert wastes as permitted under the rules	
	Setting up common / regional Sanitary landfills by all urban local bodies under 0.5 million population for the disposal of permitted waste under the rules	
	Bio remediation or Capping of old and abandoned dump sites	

11. State Level Advisory Body –

1. Every state Government and Union Territory shall constitute a State Level Advisory Body within six month from the date of notification of these rules.
2. The Body shall be constituted by Urban Development department of the concerned State Government or Union Territory.
3. The constitution of the State Level Advisory Body shall be as follows :

SI No	Designation	
	Secretary, Department of Urban Development/ Local self government department of the state	Chairperson, ex-officio
	One representative of Panchayats or Rural development Department not below the rank of Joint Secretary to state government	ex-officio member
	One representative from Ministry of Environment and forests, Govt. of India	Member, ex-officio
	One representative from Ministry of Urban Development, Govt. of India	Member, ex-officio
	One representative from the Central Pollution Control Board	Member, ex-officio
	One representative from the State Pollution Control Board or Pollution Control Committee	Member, ex-officio

	One representative from Indian Institute of Technology or National Institute of Technology	Ex-officio, Member
	Chief town planner of the state	Member
	Three representatives from the Urban local bodies	Members
	One representative from reputed Non-Governmental Organisation or Civil Society working in the field of environment or waste management	Member
	One representative from a body representing Industries at the state or central level	Member
	Two subject experts	Members

4. The State Level Advisory Body shall meet at least once in six months to review all the matters related to implementation of Municipal Solid Waste (Management and Handling) Rules, 2014, implementation of state policy and strategy on solid waste management and give advice to state government for taking measures that are necessary for expeditious and appropriate implementation of these rules.
5. The copies of the review report shall be forwarded to all the 'Prescribed Authorities' under these rules for necessary action.

12. Annual Report-

1. The urban local body shall furnish its annual report in Form-III to

SPCB/ committee and the Secretary-in-charge of the Department of Urban Development of the concerned State or Union Territory in case of metropolitan city and to the Director of municipal administration or commissioner of municipal administration or officer in charge of urban local bodies in the state in case of all other urban local bodies of state on or before the 30th day of June every year.

2. The Operator of facility shall submit the annual report to the urban local body in Form-IV.
3. Each State Pollution Control Board or Pollution Control Committee as the case may be, shall prepare and submit the consolidated annual report to the Central Pollution Control Board on the implementation of these rules and action taken against non complying urban local body by the 30th day of September of each year in Form-V;
4. The Central Pollution Control Board shall prepare a consolidated annual review report on the status of implementation of these rules by urban local bodies/ union territories in the country and forward the same to the Ministry of Urban Development and Ministry of Environment and Forests, Government of India along with its recommendations before the 30th day of December each year.
5. The annual report will be reviewed by the Ministry of Environment and Forests inviting concerned stakeholders including Ministry of Urban Development, Ministry of New and Renewable energy, Ministry of Agriculture and Ministry of Health, Government of India and give suitable instructions and guidance to the states as may be necessary for taking corrective measures.

13. Accident Reporting

When an accident occurs at any municipal solid waste processing/ treatment or disposal facility or landfill site, the officer in charge of solid waste management in the urban local body or an operator of facility shall

forthwith report of the accident in Form-VI to the Municipal Commissioner or CEO of the urban local body and the instructions issued by the said authority shall be followed.

Joint Secretary to Govt. of India

SCHEDULE I

Specifications for Landfill Sites

A. Criteria for Site Selection.-

1. In areas falling under the jurisdiction of 'Development Authorities' it shall be the responsibility of such Development Authorities to identify the landfill sites and hand over the sites to the concerned municipal

authority for development, operation and maintenance. Elsewhere, this responsibility shall lie with the concerned municipal authority

2. Selection of landfill sites shall take into consideration the relevant environmental issues.
3. The landfill site shall be planned, ~~and~~ designed and developed with proper documentation ~~of~~ in a phased construction manner plan as well as a closure plan. In case of creation of a new landfill facility is created adjoining an existing landfill site, the closure plan of existing landfill should form a part of the proposal of such new landfill.
4. The landfill sites shall be selected to make use of nearby wastes processing facilities. Otherwise, wastes processing facility shall be planned as an integral part of the landfill site.
5. Landfill sites shall be set up as per the ~~guidance notes~~ guidelines formulated by the Ministry of Urban Development, Government of India.
6. The existing landfill sites which are in use for more than five years, shall be improved in accordance of with the specifications given in this Schedule.
7. The landfill site shall be large enough to last for at least 20-25 years and shall develop 'landfill cells' in a phased manner to avoid water logging and misuse.
8. The landfill site shall be away from habitation clusters, forest areas, water bodies, monuments, National Parks, Wetlands and places of important cultural, historical or religious interest and the distance to be maintained, as prescribed by the State Environment Impact Assessment Authority (SEIAA) or the SPCB/PCC on the case to case basis for management of MSW 20 TPD or more.

The proposed landfill site shall be 100 meter away from river, 200 meter from a pond, 500 meter from Highways, Habitations, Public

Parks and water supply wells and 20 km away from Airports/Airbase. However **in a special case, landfill site may be set up within a distance of 10 and 20 km away from the Airport/Airbase after obtaining no objection certificate from the civil aviation authority/ Air force as the case may be.** The Landfill site shall not be permitted within the zone of coastal regulation, wetland, Critical habitat areas, sensitive eco-fragile areas and flood plains as recorded for the last 100 years.

9. A buffer zone of no development shall be maintained around landfill sites and sites for processing and disposal of municipal solid waste. The sites for landfill, and processing and disposal of municipal solid waste shall be incorporated in the Town Planning Department's land-use plans. The buffer zone shall be prescribed by the State Environment Impact Assessment Authority (SEIAA) **or SPCB/PCC**, on the case to case basis. The site, as approved by the State Environment Impact Assessment Authority **or SPCB/PCC** shall be notified by the concerned Local Government.
10. Biomedical waste shall be disposed of in accordance with the Bio-medical Waste (Management and Handling) Rules, 1998, as amended. The hazardous waste shall be managed in accordance with the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008, as amended, from time to time. The E-waste shall be managed in accordance with the e-Waste (Management and Handling) Rules, 2011.
11. Facilities to be created for 'temporary storage' of MSW in each landfill sites for incoming wastes in case of shutting down of waste processing plants; which shall be taken again for further processing. The landfill site shall have provisions for using as temporary storage during emergency or natural calamities

B. Criteria for Development of Facilities at the Site.-

1. Landfill site shall be fenced or hedged and provided with proper gate to monitor incoming vehicles or other modes of transportation.
2. The landfill site shall be well protected to prevent entry of unauthorized persons and stray animals.
3. Approach and other internal roads for free movement of vehicles and other machinery shall exist at the landfill site. The approach/internal roads shall be concretized/paved so as to avoid generation of dust particles due to vehicular movement.
4. The landfill site shall have waste inspection facility to monitor waste brought in for landfill, office facility for record keeping and shelter for keeping equipment and machinery including pollution monitoring equipment. The operator of the facility shall maintain record of waste receiving, processing and disposal.
5. Provisions like weigh bridge to measure quantity of waste brought at landfill site, fire protection equipment and other facilities as may be required shall be provided.
6. Utilities such as drinking water and sanitary facilities (preferably washing/bathing facilities for workers) and lighting arrangements for easy landfill operations when carried out in night hours shall be provided.
7. Safety provisions including health inspections of workers at landfill sites shall be periodically made.
8. Provisions to be made for parking and cleaning/washing transport vehicles after delivery of garbage at the site. The

wastewater shall be treated to the prescribed standards.

C. Criteria for specifications for land filling operations and closure on completion of landfill.-

1. Waste subjected to land filling shall be compacted in thin layers using landfill-heavy compactors to achieve high density of the waste. In high rainfall areas where heavy compactors cannot be used alternative measures shall be adopted.
2. Waste shall be covered immediately or at the end of each working day with minimum 10 cm of soil, inert debris or construction material till such time waste processing facilities for composting or recycling or energy recovery are set up as per Schedule II.
3. Prior to the commencement of monsoon season, an intermediate cover of 40-65 cm thickness of soil shall be placed on the landfill with proper compaction and grading to prevent infiltration during monsoon. Proper drainage shall be constructed to divert run-off away from the active cell of the landfill.
4. After completion of landfill, a final cover shall be designed to minimize infiltration and erosion. The final cover shall meet the following specifications, namely :--
 - (i) The final cover shall have a barrier soil layer comprising of 60 cm of clay or amended soil with permeability coefficient less than 1×10^{-7} cm/sec.
 - (i) On top of the barrier soil layer, there shall be a drainage layer of 15 cm.
 - (ii) On top of the drainage layer, there shall be a vegetative layer of 45 cm to support natural plant growth and to minimize

erosion.

D. Criteria for Pollution prevention.-

In order to prevent pollution problems from landfill operations, the following provisions shall be made, namely:-

1. The storm water drain shall be designed and constructed such a way that the surface runoff water is diverted from the landfilling site and leachates from MSW locations do not get mix with the surface runoff water. Provisions for diversion of storm water discharges drains shall be made to minimize leachate generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions;
2. Construction of a non-permeable lining system at the base and walls of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or waste having contamination of hazardous materials (such as aerosols, bleaches, polishes, batteries, waste oils, paint products and pesticides) minimum liner specifications shall be a composite barrier having 1.5 mm thick high density polyethylene (HDPE) geo-membrane / geo-synthetic liners, or equivalent, overlying 90 cm of soil (clay or amended soil) having permeability coefficient not greater than 1×10^{-7} cm/sec. The highest level of water table shall be at least two meter below the base of clay or amended soil barrier layer provided at the bottom of landfills.
3. Provisions for management of leachates including its collection and treatment shall be made. The treated leachates shall meet the standards specified in Schedule- II. The treated leachate shall be recycled or utilized as per permitted standards, otherwise shall be

released into the sewerage line of municipality for further treatment in STPs. In no case, leachate shall be released to open environment.

4. Proper storage and disposal facility shall be provided to prevent ~~prevention of runoff~~ water from landfill area entering any drain, stream, river, lake or pond. In case of mixing run off water with leachate/ MSW, the entire mixed water shall be treated by the concern authority.

E. Criteria for Water Quality Monitoring.-

1. Before establishing any landfill site, baseline data of ground water quality in the area shall be collected and kept in record for future reference. The ground water quality within 50 meter of the periphery of landfill site shall be periodically monitored covering different seasons in a year that is, summer, monsoon and post-monsoon period to ensure that the ground water is not contaminated beyond acceptable limit as decided by the Ground Water Board or the State Pollution Control Board or the Committee. ~~Such monitoring shall be carried out to cover different seasons in a year that is, summer, monsoon and post-monsoon period.~~
2. Usage of groundwater in and around landfill sites for any purpose (including drinking and irrigation) ~~is to be~~ shall be considered only after ensuring its quality. The following specifications for drinking water quality shall apply for monitoring purpose, namely :-

S. No.	Parameters	IS 10500:1991, Edition 2.2(2003-09) Desirable limit (mg/l except for pH)
(1)	Arsenic	0.01
(2)	Cadmium	0.01
(3)	Chromium(as Cr ⁶⁺)	0.05
(4)	Copper	0.05
(5)	Cyanide	0.05
(6)	Lead	0.05
(7)	Mercury	0.001
(8)	Nickel	-
(9)	Nitrate as NO ₃	45.0
(10)	pH	6.5-8.5
(11)	Iron	0.3
(12)	Total hardness (as CaCO ₃)	300.0
(13)	Chlorides	250
(14)	Dissolved solids	500
(15)	Phenolic compounds (as C ₆ H ₅ OH)	0.001
(16)	Zinc	5.0
(17)	Sulphate (as SO ₄)	200

E. Criteria for Ambient Air Quality Monitoring

1. Installation of landfill gas control system including gas collection system shall be made at landfill site to minimize odour generation, prevent off-site migration of gases and to protect vegetation planted on the rehabilitated landfill surface.
2. The concentration of methane gas generated at landfill site shall not exceed 25 per cent of the lower explosive limit (LEL).
3. The landfill gas from the collection facility at a landfill site shall be

utilized for either direct thermal applications or power generation, as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to ~~directly~~-escape **directly** to the atmosphere or for illegal tapping. Passive venting shall be allowed **in case** if its utilization or flaring is not possible.

4. Ambient air quality at the landfill site and at the vicinity shall be monitored to meet the following specified standards, namely :-

S. No.	Parameters	Acceptable levels
(i)	Sulphur dioxide	50 $\mu\text{g}/\text{m}^3$ (Annual*) 80 $\mu\text{g}/\text{m}^3$ (24 hours**)
(ii)	Nitrogen Dioxide	40 $\mu\text{g}/\text{m}^3$ (Annual*) 80 $\mu\text{g}/\text{m}^3$ (24 hours**)
(iii)	Particulate Matter(size less than 10 μ) or PM ₁₀	60 $\mu\text{g}/\text{m}^3$ (Annual*) 100 $\mu\text{g}/\text{m}^3$ (24 hours**)
(iv)	Particulate Matter(size less than 2.5 μ) or PM _{2.5}	40 $\mu\text{g}/\text{m}^3$ (Annual*) 60 $\mu\text{g}/\text{m}^3$ (24 hours**)
(v)	Carbon monoxide	1 hour ** : 04 mg/m^3 8 hours** : 02 mg/m^3
(vi)	Ammonia (NH ₃) $\mu\text{g}/\text{m}^3$	100 $\mu\text{g}/\text{m}^3$ (Annual*) 400 $\mu\text{g}/\text{m}^3$ (24 hours**)
(vii)	Benzo(a) Pyrene(BaP)- particulate phase only, ng/m^3	01 ng/m^3 (Annual*)

Notes:

- (i) * Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.
- (ii) ** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive

days of monitoring.

5. The ambient air quality monitoring shall be carried out by the concerned authority as per the following schedule, namely:-
 - (a) Six times in a year for cities having population of more than fifty lakhs;
 - (b) Four times in a year for cities having population between ten and fifty lakhs;
 - (c) Two times in a year for town or cities having population between one and ten lakhs.

G. Criteria for Plantation at Landfill Site

1. A vegetative cover shall be provided over the completed site in accordance with the and following specifications, namely:-
 - (a) Selection of locally adopted non-edible perennial plants that are resistant to drought and extreme temperatures shall be allowed to grow;
 - (b) The plants grown **should be of such variety** ~~are such~~ that their roots do not penetrate more than 30 cms. This condition shall apply till the landfill is stabilized;
 - (c) Selected plants shall have ability to thrive on low-nutrient soil with minimum nutrient addition;
 - (d) Plantation to be made in sufficient density to minimize soil erosion.
 - (e) **Green belts shall be developed all around the boundary of the landfill in consultation with SPCB/PCC.**

H. Criteria for Post-care of Landfill Site

1. The post-closure care of landfill site shall be conducted for at least fifteen years and long term monitoring or care plan shall consist of the following, namely :-
 - (a) Maintaining the integrity and effectiveness of final cover, making repairs and preventing run-on and run-off from eroding or otherwise damaging the final cover;
 - (b) Monitoring leachate collection system in accordance with the requirement;
 - (c) Monitoring of ground water in accordance with requirements and maintaining ground water quality;
 - (d) Maintaining and operating the landfill gas collection system to meet the standards.
2. Use of closed landfill sites after fifteen years of post-closure monitoring can be considered for human settlement or otherwise only after ensuring that gaseous **emission** and leachate **quality** analysis complies with the specified standards **and the soil stability is ensured.**

I. Criteria for Special provisions for hilly areas

Cities and towns located on hills shall have location-specific methods evolved for final disposal of solid waste by the municipal authority with the approval of the concerned State Board or the Committee. The municipal authority shall set up processing facilities for utilization of biodegradable organic waste. **The non-biodegradable recyclable materials shall be stored and send for recycling periodically.** The inert and non-biodegradable waste shall be used for building roads or filling-up of appropriate areas on hills. Because of constraints in finding adequate

land in hilly areas, waste not suitable for road-laying or filling up shall be disposed of in specially designed landfills.

SCHEDULE II

Standards of Processing and treatment

A. Standards for Composting

1. The waste processing facilities shall include composting as one of the technologies for processing of bio degradable waste.
2. In order to prevent pollution problems from compost plant .The following shall be complied with, namely :-
 - i. The incoming organic waste at site shall be maintained prior to further processing. To the extent possible, the waste storage area should be covered. If, such storage is done in an open area, it shall be provided with impermeable base with facility for collection of leachate and surface water run-off into lined drains leading to a leachate treatment and disposal facility;
 - ii. Necessary precautions shall be taken to minimize nuisance of odour, flies, rodents, bird menace and fire hazard;
 - iii. In case of breakdown or maintenance of plant, waste intake shall be stopped and arrangements be worked out for diversion of waste to the temporary processing site or temporary landfill sites which will be again reprocessed when

plant is in order;

- iv. Pre-process and post-process rejects shall be removed from the processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be routed through appropriate vendors. The non-recyclable **high calorific fractions to be segregated as a feedstock and sent for RDF production/ co-processing in cement plants/ to power plants. Only rejects from all processes** shall be sent for well-designed landfill site(s).
- v. The windrow area shall be provided with impermeable base. Such a base shall be made of concrete or compacted clay, 50 cm thick, having permeability coefficient less than 10^{-7} cm/sec. The base shall be provided with 1 to 2 per cent slope and circled by lined drains for collection of leachate or surface run-off;
- vi. Ambient air quality monitoring shall be regularly carried out particularly for checking odor nuisance at down-wind direction on the boundary of processing plant.
- vii. Leachate shall be re-circulated in compost plant for moisture maintenance.
- viii. The end product compost shall meet the standards prescribed under Fertilizer control order 2009/2013.

4. In order to ensure safe application of compost, the following specifications for compost quality shall be met, namely:-

Parameters	Concentration not to exceed * (mg/kg dry basis, except pH value and C/N ratio)
Arsenic	10.00
Cadmium	5.00
Chromium	50.00
Copper	300.00
Lead	100.00
Mercury	0.15
Nickel	50.00
Zinc	1000.00
C/N ratio	20-40
PH	5.5-8.5

* Compost (final product) exceeding the above stated concentration limits shall not be used for food crops. However, it may be utilized for purposes other than growing food crops.

CPCB TO SEE THE PROPOSED STANDARDS FOR COMPOSTING BY TOXICSLINK

B. Standards for Treated Leachates

The disposal of treated leachates shall follow the following standards, namely:-

S. No	Parameter	Standards (Mode of Disposal)		
		Inland surface water	Public sewers	Land disposal
1.	Suspended solids, mg/l, max	100	600	200

2.	Dissolved solids (inorganic) mg/l, max.	2100	2100	2100
3	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Ammonical nitrogen (as N), mg/l, max.	50	50	-
5	Total Kjeldahl nitrogen (as N), mg/l, max.	100	-	-
6	Biochemical oxygen demand (3 days at 27° C) max.(mg/l)	30	350	100
7	Chemical oxygen demand, mg/l, max.	250	-	-
8	Arsenic (as As), mg/l, max	0.2	0.2	0.2
9	Mercury (as Hg), mg/l, max	0.01	0.01	-
10	Lead (as Pb), mg/l, max	0.1	1.0	-
11	Cadmium (as Cd), mg/l, max	2.0	1.0	-
12	Total Chromium (as Cr), mg/l, max.	2.0	2.0	-
13	Copper (as Cu), mg/l, max.	3.0	3.0	-
14	Zinc (as Zn), mg/l, max.	5.0	15	-
15	Nickel (as Ni), mg/l, max	3.0	3.0	-
16	Cyanide (as CN), mg/l, max.	0.2	2.0	0.2
17	Chloride (as Cl), mg/l, max.	1000	1000	600
18	Fluoride (as F), mg/l, max	2.0	1.5	-
19	Phenolic compounds (as C ₆ H ₅ OH) mg/l, max.	1.0	5.0	-

Note : While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration.

C. Incineration:

The incinerators shall meet the following operating and emission standards, namely:-

Operating Standards

- (1) The combustion efficiency (CE) shall be at least 99.00%.
- (2) The combustion efficiency is computed as follows:

$$\text{C.E.} = \frac{\% \text{CO}_2}{\% \text{CO}_2 + \% \text{CO}} \times 100$$

Emission Standards

<u>Parameters</u>	<u>Concentration mg/Nm³ at (12% CO₂ correction)</u>
(1) Particulate matter	150
(2) Nitrogen Oxides	450
(3) HCl	50
(4) Minimum stack height shall be 30 meters above ground.	
(5) Volatile organic compounds in ash shall not be more than 0.01%.	

Note:

1. Suitably designed pollution control devices shall be installed or retrofitted with the incinerator to achieve the above emission limits, if necessary.
2. Waste to be incinerated shall not be chemically treated with any chlorinated disinfectants.
3. Chlorinated plastics shall not be incinerated.
4. Toxic metals in incineration ash shall be limited within the regulatory

quantities as specified in the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, as amended from time to time.

5. Only low sulphur fuel like I.d.o., I.s.h.s or Diesel shall be used as fuel in the incinerator.

CPCB TO SEE THE PROPOSED STANDARDS FOR COMPOSTING BY TOXICSLINK

D. Waste to Energy.-

The Central Pollution Control Board shall prescribe standards for maintenance of ambient air quality and permissible levels of dioxins and furans around the waste to energy plants other than small facilities, treating less than 5 TPD waste and circulate the same to all state pollution control board/committees for uniform application.

The State Pollution Control Board or Committee shall prescribe standards for maintenance of ambient air quality and permissible levels of dioxins and furans around the waste to energy plants in consonance with the emission standards prescribed by the CPCB. . If the proposal includes the technology other than the one for which standards have been prescribed by the central pollution control board, the State Pollution Control Board or Committee shall forward the proposal with its recommendations to Central Pollution Control Board for prescribing suitable standards.

FORM – I

**APPLICATION FOR OBTAINING AUTHORIZATION
FOR PROCESSING/RECYCLING/TREATMENT AND DISPOSAL OF
MUNICIPAL SOLID WASTE**

To,

The Member Secretary,

.....State Pollution Control Board/Pollution Control Committee
of.....

Sir,

I/We hereby apply for authorization under the Municipal Solid Waste (Management and Handling) Rules, 2014 for processing, recycling, treatment and disposal of municipal solid waste

1.	Name of the urban local body/agency appointed by them/ operator of facility	
2.	Correspondence address Telephone No. Fax No. e-mail:	
3.	Nodal Officer & designation (Officer authorised by the urban local body or agency responsible for operation of processing/ treatment or disposal facility)	
4.	Authorization required for setting up and operation of the facility (Please tick mark)	a. waste processing b. recycling c. treatment d. disposal at landfill
5.	Attach copies of the Documents	i. Site clearance (local authority) ii. Proof of Environmental Clearance iii. Consent for establishment iv. Agreement between municipal authority and operating agency v. Investment on the project and expected return

6.	<p>Processing/recycling/treatment of municipal solid waste</p> <ul style="list-style-type: none"> i. Total Quantity of waste to be processed per day a. Quantity of waste recycled per day b. Quantity of waste treated per day c. Quantity of waste disposed per day into landfill <p>(ii)Utilization programme for waste processed (Product utilization)</p> <p>(iii)Methodology for disposal (attach details)</p> <ul style="list-style-type: none"> a. Quantity of leachate b. Treatment technology for leachate <p>(iv)Measures to be taken for prevention and control of environmental pollution</p> <p>(v)Measures to be taken for safety of workers working in the plant</p> <p>(vi)Details on municipal solid waste processing/recycling/treatment/disposal facility (to be attached)</p>	
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7.	Disposal of municipal solid waste <ul style="list-style-type: none"> i. Number of sites identified ii. Quantity of waste to be disposed per day iii. Nature and composition of waste iv. Details of methodology or criteria followed for site selection (attach) v. Details of existing site under operation vi. Methodology and operational details of landfilling vii. Measures taken to check environmental pollution 	
8	A detailed Action Plan for implementation may be attached	

Date:

Signature:

Place:

Designation

Form- II

FORMAT FOR ISSUE OF AUTHORISATION

File No.: _____

Dated: _____

Authorization No _____

To

Ref: Your application number _____ dt. _____

The _____ State Pollution Control Board/Pollution Control Committee after examining the proposal hereby authorises _____ having their administrative office at _____ to set up and operate waste processing/recycling/ treatment/disposal facility at _____

1. The authorization is hereby granted to operate the facility for processing, recycling, treatment and disposal of municipal solid waste.
2. The authorization is subject to the terms and conditions stated below and such conditions as may be otherwise specified in these rules and the standards laid down in Schedules II, IV and V annexed to these rules.
3. The _____ State Pollution Control Board/Pollution Control Committees of the UT _____ may, at any time, revoke any of the conditions applicable under the authorization and shall communicate the same in writing.
4. Any violation of the provision of the Municipal Solid Waste (Management and Handling) Rules, 2014 will attract the penal provision of the Environment (Protection) Act, 1986 (29 of 1986).

(Member Secretary)

State Pollution Control Board/Pollution Control Committee of the UT

(Signature and designation)

Date:

Place:

DRAFT

Form - III

**FORMAT FOR ANNUAL REPORT ON MUNICIPAL SOLID WASTE
MANAGEMENT TO BE SUBMITTED BY THE URBAN LOCAL BODY**

CALENDAR YEAR:	DATE OF SUBMISSION OF REPORT:

1	Name of the City/Town and State	
2	Population	
3	Area in sq. kilometers	
4	Name & Address of Urban local body Telephone No. Fax No. E-mail:	
5	Name of officer in-charge dealing with municipal solid waste management (MSWM) Phone No: Fax No: E-mail:	
6	i. Number of households in the city/town , ii. Number of non-residential premises in the city iii. Number of election/ administrative wards in the city/town	
7	Quantity of Municipal solid waste (MSW)	

	i. Estimated Quantity of MSW generated in the urban local body area per day in metric tonnes	/tpd
	Quantity of MSW collected per day	/tpd
	ii. Per capita waste collected per day	/gms/day
	iii. Quantity of MSW processed	/tpd
	iv. Quantity of MSW disposed at dumpsite/ landfill	/tpd
8	Status of Municipal Solid Waste Management (MSWM) service	

	<p>a. Segregation and storage of waste at source</p> <p>i. Whether MSW is stored at source in domestic/commercial/institutional bins</p> <p>If yes,</p> <p>ii. Percentage of households practice storage of waste at source in domestic bins</p> <p>iii. Percentage of non-residential premises practice storage of waste at source in commercial/institutional bins</p> <p>iv. Percentage of households dispose or throw MSW on the streets</p> <p>v. Percentage of non-residential premises dispose of throw MSW on the streets</p> <p>vi. Whether MSW is stored at source in a segregated form</p> <p>If yes,</p> <p>vii. Percentage of premises segregating the waste at source</p>	<p>Yes/No</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>Yes/No</p> <p>%</p>
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	b. Door to Door Collection of MSW	
	i. Whether door to door collection (D2D) of MSW is being done in the city/town	Yes/No
	if yes	
	ii. Number of wards covered in D2D collection of waste	
	iii. No. of households covered	
	iv. No. of non-residential premises including commercial establishments ,hotels, restaurants educational institutions/ offices etc covered	
	v. Percentage of residential and non-residential premises covered in door to door collection through : <ul style="list-style-type: none"> • Motorized vehicle • Containerized tricycle/handcart • Other device 	 % % %
	vi. If not, method of primary collection adopted	
	c. Sweeping of streets	
	i. Length of roads, streets, lanes, bye-lanes in the city that need to be cleaned	km

	<p>ii. Frequency of street sweepings and percentage of population covered</p> <p>iii. Tools used</p> <ul style="list-style-type: none"> • Manual sweeping • Mechanical sweeping • Whether long handle broom used by sanitation workers • Whether each sanitation worker is given handcart/tricycle for collection of waste • Whether handcart / tricycle is containerized • Whether the collection tool synchronizes with collection/ waste storage containers utilized 	frequency	Daily	Alternate days	Twice a week	Occasionally
		% of population covered				

	<p>i. No. and type of waste storage depots in the city/town</p> <ul style="list-style-type: none"> • Open waste storage sites • Masonry bins • Cement concrete cylinder bins • Dhalao/covered rooms/space • Covered metal/plastic containers • Upto 1.1 m³ bins • 2 to 5 m³ bins • Above 5m³ containers • Bin-less city 	No. Capacity in m ³
	ii. Bin/ population ratio	
	<p>iii. Ward wise details of waste storage depots (attach) :</p> <p>Ward No:</p> <p>Area:</p> <p>Population:</p> <p>No. of bins placed</p> <p>Total volume of bins placed</p>	
	iv. Total storage capacity of waste storage facilities in cubic meters	
	v. Total waste actually stored at the waste storage depots daily	

	vi. Give frequency of collection of waste from the depots	Frequency	No. of bins
	Number of bins cleared		
		Daily	
		Alternate day	
		Twice a week	
		Once a week	
		Occasionally	
	vii. Whether storage depots have facility for storage of segregated waste in green, blue and black bins	Yes/ No (if yes, add details) No. of green bins: No. of blue bins: No. of black bins:	
	viii. Whether lifting of MSW from storage depots is manual or mechanical. Give percentage	(%) of Manual Lifting of MSW	%
		(%) of Mechanical lifting	%
	ix. If mechanical – specify the method used	front-end loaders/ Top loaders	
	x. Whether MSW is lifted from door to door and transported to treatment plant directly in a segregated form	Yes/ No (if yes, specify)	

	Waste transportation per day i. Type and Number of vehicles used	No. Trips made waste transported
	<ul style="list-style-type: none"> • Animal cart • Tractors • Non tipping Truck • Tipping Truck • Dumper Placers • Refuse collectors • Compactors • Others • JCB/loader 	
	ii. Frequency of transportation of waste	Frequency (%) of waste transported Daily Alternate day Twice a week Once a week Occasionally
	iii. Quantity of waste transported each day	/tpd
	iv. Percentage of total waste transported daily	%

	f. Waste Treatment Technologies used	
	i. Whether municipal solid waste is processed	Yes/No
If yes	ii. Quantity of waste processed daily	/tpd
	iii. Whether treatment is done by urban local body or through an agency	
	iv. Land(s) available with the urban local body for waste processing (in Hectares)	
	v. Land currently utilized for waste processing	
	vi. MSW processing facilities in operation	
	vii. MSW processing facilities under construction	
	viii. Distance of processing facilities from city/town boundary	
	ix. Details of technologies adopted	

	<ul style="list-style-type: none"> Composting , 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> vermi composting 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Bio-methanation 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Refuse Derived Fuel 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Waste to Energy technology such as incineration, gasification, pyrolysis or any other technology (give detail) 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Co-processing 	Qty. raw material processed
	<ul style="list-style-type: none"> Combustible waste supplied to cement plant 	
	<ul style="list-style-type: none"> Combustible waste supplied to MSW based power plants 	
	<ul style="list-style-type: none"> Others 	Qty.
	g. MSW disposal facilities	

	i. No. of dumpsites sites available with the urban local body	
	ii. No. of sanitary landfill sites available with the urban local body	
	iii. Area of each such sites available for waste disposal	
	1. Area of land currently used for waste disposal	
	2. Distance of dumpsite/landfill facility from city/town	kms
	3. Distance from the nearest habitation	kms
	4. Distance from water body	kms
	5. Distance from state/national highway	kms
	6. Distance from Airport	kms
	7. Distance from important religious places or historical monument	kms
	8. Whether it falls in flood prone area	kms
	9. Whether it falls in earthquake fault line area	Yes/No
	10. Quantity of waste landfilled each day	tpd
	11. Whether landfill site is fenced	Yes / No
	12. Whether Lighting facility is available on site	Yes / No

	13. Whether Weigh bridge facility available	Yes / No
	iv. Vehicles and equipments used at landfill (specify)	Bulldozer, Compacters etc. available
	v. Manpower deployed at landfill site	Yes/No (if yes, attach details)
	vi. Whether covering is done on daily basis	Yes/No
	If not, vii. Frequency of covering the waste deposited at the landfill	
	viii. Cover material used	
	ix. Whether adequate covering material is available	Yes/No
	x. Provisions for gas venting provided	Yes/No (if yes, attach technical data sheet)
	xi. Provision for leachate collection	Yes/No (if yes, attach technical data sheet)
9	Whether an Action Plan has been prepared for improving solid waste management practices in the city	Yes/No (if Yes attach Action Plan details)

10	<p>What separate provisions are made for :</p> <p>i. Dairy related activities :</p> <p>ii. Slaughter houses waste :</p> <p>iii. C&D waste (construction debris) :</p>	<p>Attach details on Proposals, Steps taken,</p> <p>Yes/No</p> <p>Yes/No</p> <p>Yes/No</p>
11	Details of Post Closure Plan	Attach Plan
12	How many slums are identified and whether these are provided with Solid Waste Management facilities :	Yes/ No (if Yes, attach details)
13	<p>Give details of:</p> <p>Urban local body's own manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste</p>	
14	<p>Give details of:</p> <p>Contractor/ concessionaire's manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste</p>	
15	Mention briefly, the difficulties being experienced by the urban local body in complying with provisions of these rules	

16	Mention briefly, if any innovative idea is implemented to tackle a problem related to municipal solid waste, which could be replicated by other urban local bodies	
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Signature of CEO/Municipal Commissioner/

Executive Officer/Chief Officer

Date:

Place:

Form - IV

**FORMAT OF ANNUAL REPORT TO BE SUBMITTED BY THE OPERATOR OF
FACILITY TO THE URBAN LOCAL BODY**

1	Name of the City/Town and State	
2	Population	
3	Area in sq. kilometers	
4	Name & Address of the Urban local body Telephone No. Fax No. E-mail:	
5	Name and address of operator of the facility	
6	Name of officer in-charge of the facility Phone No: Fax No: E-mail:	
7	iv. Number of households in the city/town , v. Number of non-residential premises in the city vi. Number of election/ administrative wards in the city/town	
8	Quantity of Municipal solid waste (MSW)	
	v. Estimated Quantity of MSW generated in the urban local body area per day in metric tonnes	/tpd
	Quantity of MSW collected per day	/tpd

	vi. Per capita waste collected per day	/gms/day
	vii. Quantity of MSW processed	/tpd
	viii. Quantity of MSW disposed at dumpsite/ landfill	/tpd
9	Status of Municipal Solid Waste Management (MSWM) service	

	<p>b. Segregation and storage of waste at source</p> <p>viii. Whether MSW is stored at source in domestic/commercial/institutional bins</p> <p>If yes,</p> <p>ix. Percentage of households practice storage of waste at source in domestic bins</p> <p>x. Percentage of non-residential premises practice storage of waste at source in commercial/institutional bins</p> <p>xi. Percentage of households dispose of throw MSW on the streets</p> <p>xii. Percentage of non-residential premises dispose of throw MSW on the streets</p> <p>xiii. Whether MSW is stored at source in a segregated form</p> <p>If yes,</p> <p>xiv. Percentage of premises segregating the waste at source</p>	<p>Yes/No</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>Yes/No</p> <p>%</p>
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	iv.Length of roads, streets, lanes, bye-lanes in the city that need to be cleaned	km				
	v. Frequency of street sweepings and percentage of population covered	frequency	Daily	Alternate days	Twice a week	Occasionally
	vi. Tools used	% of population covered				
	• Manual sweeping					
	• Mechanical sweeping					
	• Whether long handle broom used by sanitation workers					
• Whether each sanitation worker is given handcart/tricycle for collection of waste						
• Whether handcart / tricycle is containerized	Yes/No					
• Whether the collection tool synchronizes with collection/ waste storage containers utilized	Yes/No					

.	e. Secondary Waste Storage facilities	
	vi. No. and type of waste storage depots in the city/town <ul style="list-style-type: none"> • Open waste storage sites • Masonry bins • Cement concrete cylinder bins • Dhalao/covered rooms/space • Covered metal/plastic containers • Upto 1.1 m³ bins • 2 to 5 m³ bins • Above 5m³ containers • Bin-less city 	No. Capacity in m ³
	vii. Bin/ population ratio	
	viii. Ward wise details of waste storage depots (attach) : Ward No: Area: Population: No. of bins placed Total volume of bins placed	
	ix. Total storage capacity of waste storage facilities in cubic meters	
	x. Total waste actually stored at the waste storage depots daily	

	xi. Give frequency of collection of waste from the depots Number of bins cleared	Frequency	No. of bins
		Daily	
		Alternate day	
		Twice a week	
		Once a week	
		Occasionally	
	xii. Whether storage depots have facility for storage of segregated waste in green, blue and black bins	Yes/ No (if yes, add details) No. of green bins: No. of blue bins: No. of black bins:	
	xiii. Whether lifting of MSW from storage depots is manual or mechanical. Give percentage	(%) of Manual Lifting of MSW	%
		(%) of Mechanical lifting	%
	xiv. If mechanical – specify the method used	front-end loaders/ Top loaders	
	xv. Whether MSW is lifted from door to door and transported to treatment plant directly in a segregated form	Yes/ No (if yes, specify)	
	Waste Transportation per day Type and Number of vehicles used	No. Trips made waste transported	

	<ul style="list-style-type: none"> • Animal cart • Tractors • Non tipping Truck • Tipping Truck • Dumper Placers • Refuse collectors • Compactors • Others • JCB/loader 	
vi.	Frequency of transportation of waste	Frequency (%) of waste transported Daily Alternate day Twice a week Once a week Occasionally
vii.	Quantity of waste transported each day	/tpd
viii.	Percentage of total waste transported daily	%

	i. Waste Treatment Technologies used	
	x. Whether municipal solid waste is processed	Yes/No
If yes	xi. Quantity of waste processed daily	/tpd
	xii. Land(s) available with the urban local body for waste processing (in Hectares)	
	xiii. Land currently utilized for waste processing	
	xiv. MSW processing facilities in operation	
	xv. MSW processing facilities under construction	
	xvi. Distance of processing facilities from city/town boundary	
	xvii. Details of technologies adopted	

	<ul style="list-style-type: none"> Composting , 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> vermi composting 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Bio-methanation 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Refuse Derived Fuel 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Waste to Energy technology such as incineration, gasification, pyrolysis or any other technology (give detail) 	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
	<ul style="list-style-type: none"> Co-processing 	Qty. raw material processed
	<ul style="list-style-type: none"> Combustible waste supplied to cement plant 	
	<ul style="list-style-type: none"> Combustible waste supplied to MSW based power plants 	
	<ul style="list-style-type: none"> Others 	Qty.
	j. MSW disposal facilities	

	xii. No. of dumpsites sites available with the urban local body	
	xiii. No. of sanitary landfill sites available with the urban local body	
	xiv. Area of each such sites available for waste disposal	
	14. Area of land currently used for waste disposal	
	15. Distance of dumpsite/landfill facility from city/town	kms
	16. Distance from the nearest habitation	kms
	17. Distance from water body	kms
	18. Distance from state/national highway	kms
	19. Distance from Airport	kms
	20. Distance from important religious places or historical monument	kms
	21. Whether it falls in flood prone area	kms
	22. Whether it falls in earthquake fault line area	Yes/No
	23. Quantity of waste landfilled each day	tpd
	24. Whether landfill site is fenced	Yes / No
	25. Whether Lighting facility is available on site	Yes / No

	26. Whether Weigh bridge facility available	Yes / No
	xv. Vehicles and equipments used at landfill (specify)	Bulldozer, Compacters etc. available
	xvi. Manpower deployed at landfill site	Yes/No (if yes, attach details)
	xvii. Whether covering is done on daily basis	Yes/No
	If not, xviii. Frequency of covering the waste deposited at the landfill	
	xix. Cover material used	
	xx. Whether adequate covering material is available	Yes/No
	xxi. Provisions for gas venting provided	Yes/No (if yes, attach technical data sheet)
	xxii. Provision for leachate collection	Yes/No (if yes, attach technical data sheet)
10	Whether an Action Plan has been prepared for improving solid waste management practices in the city	Yes/No (if Yes attach Action Plan details)
11	What separate provisions are made for : iv. Dairy related activities : v. Slaughter houses waste : vi. C&D waste (construction debris) :	Attach details on Proposals, Steps taken, Yes/No Yes/No Yes/No
12	Details of Post Closure Plan	Attach Plan

13	How many slums are identified and whether these are provided with Solid Waste Management facilities :	Yes/ No (if Yes, attach details)
14	Give details of manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste	
15	Mention briefly, the difficulties being experienced by the urban local body in complying with provisions of these rules	
16	Mention briefly, if any innovative idea is implemented to tackle a problem related to municipal solid waste, which could be replicated by other urban local bodies.	

Signature of Operator

Dated :

Place:

Form - V

**Format of Annual Review Report to be submitted by the State Pollution
Control Board/Committees to the Central Pollution Control Board**

To,

The Chairman,

Central Pollution Control Board,
 'Parivesh Bhawan',
 East Arjun Nagar,
 DELHI- 110 0032

1.	Name of the State/Union territory	:	
2.	Name & address of the State Pollution Control	:	
3.	Number of urban local bodies responsible for management of municipal solid waste in the State/Union territory under these rules	:	
4.	No. of authorization application Received	:	
5.	A Summary Statement on progress made by urban local body in respect of municipal solid waste management	:	Please attach as Annexure-I
6.	A Summary Statement on progress made by urban local bodies in respect of waste collection, segregation, transportation and disposal	:	Please attach as Annexure-II
7.	A summary statement on progress made by urban local bodies in respect of implementation of Schedule II	:	Please attach as Annexure-III

Date:	Chairman or the Member Secretary
Place:	State Pollution Control Board/ Pollution Control Committee

Form - VI

Accident Reporting

1.	Date and time of accident	:	
2.	Sequence of events leading to accident	:	
3.	The waste involved in accident	:	

4.	Assessment of the effects of the accidents on human health and the environment	:	
5.	Emergency measures taken	:	
6.	Steps taken to alleviate the effects of accidents	:	
7.	Steps taken to prevent the recurrence of such an accident	:	
Date:		Signature:.....	
Place:		Designation:	

**Table 3.6: Compost Quality Standards as per MSW Rules,
FCO 2009 and FCO 2013 (PROM)**

Parameters	Organic Compost		Phosphate Rich Organic Manure
	MSW Rules 2000	FCO 2009	FCO (PROM) 2013
Arsenic (mg/Kg)	10.00	10.00	10.00

Parameters	Organic Compost		Phosphate Rich Organic Manure
	MSW Rules 2000	FCO 2009	FCO (PROM) 2013
Cadmium (mg/Kg)	5.00	5.00	5.00
Chromium (mg/Kg)	50.00	50.00	50.00
Copper (mg/Kg)	300.00	300.00	300.00
Lead (mg/Kg)	100.00	100.00	100.00
Mercury (mg/Kg)	0.15	0.15	0.15
Nickel (mg/Kg)	50.00	50.00	50.00
Zinc (mg/Kg)	1000.00	1000.00	1000.00
C/N ratio	20-40	<20	less than 20:1
pH	5.5-8.5	6.5 - 7.5	(1:5 solution) maximum 6.7
Moisture, per cent by weight, maximum		15.0-25.0	25.0
Bulk density (g/cm ³)		<1.0	Less than 1.6
Total Organic Carbon, per cent by weight, minimum		12.0	7.9
Total Nitrogen (as N), per cent by weight, minimum		0.8	0.4
Total Phosphate (as P ₂ O ₅), percent by weight, minimum		0.4	10.4
Total Potassium (as K ₂ O), percent by weight, minimum		0.4	-
Colour		Dark brown to black	-
Odour		Absence of foul Odour	-
Particle size		Minimum 90% material should pass through 4.0 mm IS sieve	Minimum 90% material should pass through 4.0 mm IS sieve
Conductivity (as dsm-1), not more than		4.0	8.2

Table 3.14: Standards for Air Emissions for Incinerators

Parameters	Units	Average per day		
		EU Direc- tive 2011	German 2013	MSW (M&H) Rules 2014
Particulate Matter	mg/m ³	30	5 (10*)	150
Total Organic Carbon	mg/m ³		10	
CO	mg/m ³		50	
HCL	mg/m ³	10	10	50
HF	mg/m ³	1	1	
SO ₂	mg/m ³	50	50	100
NO _x	mg/m ³	500/800	150 (200)*	450
Cd + TI	mg/m ³	0,05	0.05	
Hg	mg/m ³	0.05	0.03	
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V	mg/m ³	0.5	0.5	
TOC	mg/m ³	10		
Dioxins & Furans	ng/m ³	0.1ng TEQ	0.1ng TEQ	

Parameters	Units	Average per day		
		EU Direc- tive 2011	German 2013	MSW (M&H) Rules 2014
Minimum Tempera- ture			850°	
Retention Time			>2 sec	
Reference value- flue gas oxygen content			11% by vol- ume	
Reference value- flue gas oxygen content for waste pyrolysis/ gasification/waste oil			3% by vol- ume	

*for plants generating <50 MW per day

CHECK- LIST

[FOR FILLING ANNUAL REPORT ON MSW MANAGEMENT BY
SPCBs/PCCs]

1. Towns/cities

- (i) Total number of towns/cities
- (ii) Total number of ULBs
- (iii) Number of class I & class II cities/towns

2. Authorization status (names/number)

- (i) Number of applications received
- (ii) Number of authorizations granted
- (iii) Authorizations under scrutiny

3. MSW Generation status

- (i) MSW generation in the state (TPD)
- (ii) MSW collected (TPD)
- (iii) MSW treated (TPD)
- (iv) MSW landfilled (TPD)

4. Compliance to schedule II of MSW Rules (Number/names of towns/capacity)

- (i) Good practices in cities/towns
- (ii) House-to-house collection
- (iii) Segregation
- (iv) Storage
- (v) Covered transportation

5. Processing of MSW(Number/names of towns/capacity)

- (i) MSW processing facilities setup:

i. S I. No.	ii. Comp osting	iii. Ver min- compos ting	iv. Bi ogas	v. R DF/Pelletizati on
vi.	vii.	viii.	ix.	x.

- (ii) Processing facility operational:

I. No.	xi. Sosting	xii. Comp	xiii. Ver min-compos ting	xiv. Biogas	xv. R DF/Pelletizati on
	xvi.	xvii.	xviii.	xix.	xx.

(iii) Processing facility under installation/planned:

I. No.	xxi. Sosting	xxii. Comp	xxiii. Ver min-compos ting	xxiv. Biogas	xxv. R DF/Pelletisati on
	xxvi.	xxvii.	xxviii.	xxix.	xxx.

6. Waste-to-Energy Plants: (Number/names of towns/capacity)

. No.	xxxi. SI	xxxii. Plant Location	xxxiv. Statu s of operation	xxxv. Powe r generatio n (MW)	xxxvi. Remark s
	xxxvii.	xxxviii.	xxxix.	xl.	xli.

7. Disposal of MSW (number/names of towns/capacity):

- (i) Landfill sites identified
- (ii) Landfill constructed

- (iii) Landfill under construction
- (iv) Landfill in operation
- (v) Landfill exhausted
- (vi) Landfilled capped

8. MSW Dumpsites (number/names of towns/capacity):

- (i) Total number of existing dumpsites
- (ii) Dumpsites reclaimed/capped
- (iii) Dumpsites converted to sanitary landfill

9. Monitoring at Waste processing/Landfills sites

Sl. No.	Name of facilities	Ambient air	Groundwater	Gross leachate quality	Landfill gas quality
xlix. 1.	i.	ii.	iii.	liii.	liv.
lvi. 2.	lvii.	lviii.	lix.	lx.	lxi.
lxiii. 3. etc.	lxiv.	lxv.	lxvi.	lxvii.	lxviii.

10. Status of Action Plan prepared by Municipalities

Total number of municipalities:

Number of Action Plan submitted:

11. Standards:

(A) The stack emission standards for treatment/utilization of MSW using Incinerator/Thermal technologies:

Parameter	Emission standard	
Particulates	50 mg/Nm ³	Standard refers to half hourly average value
HCl	50 mg/Nm ³	Standard refers to half hourly average value
SO ₂	200 mg/Nm ³	Standard refers to half hourly average value
CO	100 mg/Nm ³	Standard refers to half hourly average value
Total Organic Carbon	50 mg/Nm ³	Standard refers to daily average value
HF	20 mg/Nm ³	Standard refers to half hourly average value
NO _x (NO and NO ₂ expressed as NO ₂)	4 mg/Nm ³	Standard refers to half hourly average value
Total dioxins and furans	400 mg/Nm ³	Standard refers to half hourly average value
	0.1 ng TEQ/Nm ³	Standard refers to 6-8 hours sampling. Please refer guidelines for 17 concerned congeners for toxic equivalence values to arrive at total toxic equivalence.
Cd + Th + their compounds	0.05 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.
Hg and its compounds	0.05 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.
Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V + their compounds	0.5 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.

Note: All values corrected to 11% oxygen on a dry basis.

(B) The Liquid effluent discharge standards from MSW processing plants:

(a) Compulsory parameters	Standards	Remarks
pH	6.5—8.5	
BOD(3 days at 27°C)	100 mg/l	
Oil & Grease	10mg/l	
Bioassay test	Minimum 90% survival after 96 hours with at 100% effluent	
(b) Additional parameters (mg/l)		
Nitrate (as N)	10	
Arsenic	0.2	
Hexavalent Chromium	0.1	
Total Chromium	1.0	
Lead	0.1	

Cyanide as CN	0.2	
Zinc	0.5	
Mercury	0.01	
Copper	2.0	
Nickel	2.0	
Phenolics as C ₆ H ₅ OH	5.0	
Sulphide	2.0	

Note : No limit for COD is prescribed but it shall be monitored. If the COD in a treated effluent is persistently greater than 250 mg/l, the waste will be analysed to assess the source of COD contribution and necessary action will be taken to treat accordingly.

(c) Standards for discharging treated leachate shall remain as earlier.

S.No	Parameter	Standards (Mode of Disposal)		
		Inland surface water	Public sewers	Land disposal
1.	Suspended solids, mg/l, max	100	600	200
2.	Dissolved solids (inorganic) mg/l, max.	2100	2100	2100
3	PH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Ammonical nitrogen (as N), mg/l, max.	50	50	-
5	Total Kjeldahl nitrogen (as N), mg/l, max.	100	-	-
6	Biochemical oxygen demand (3 days at 27° C) max.(mg/l)	30	350	100
7	Chemical oxygen demand, mg/l, max.	250	-	-
8	Arsenic (as As), mg/l, max	0.2	0.2	0.2
9	Mercury (as Hg), mg/l, max	0.01	0.01	-

10	Lead (as Pb), mg/l, max	0.1	1.0	-
11	Cadmium (as Cd), mg/l, max	2.0	1.0	-
12	Total Chromium (as Cr), mg/l, max.	2.0	2.0	-
13	Copper (as Cu), mg/l, max.	3.0	3.0	-
14	Zinc (as Zn), mg/l, max.	5.0	15	-
15	Nickel (as Ni), mg/l, max	3.0	3.0	-
16	Cyanide (as CN), mg/l, max.	0.2	2.0	0.2
17	Chloride (as Cl), mg/l, max.	1000	1000	600
18	Fluoride (as F), mg/l, max	2.0	1.5	-
19	Phenolic compounds (as C ₆ H ₅ OH) mg/l, max.	1.0	5.0	-

Note : While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration.