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Bylaws for Grey Water Reuse in Housing & Commercial Complexes in Aurangabad (Draft), 2012

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MUNICIPAL CORPORATION
AURANGABAD

DRAFT BYLAWS
FOR
GREY WATER REUSE
IN
HOUSING & COMMERCIAL
COMPLEXES IN AURANGABAD

2012

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PREFACE

Depending upon the necessities, one uses different types of apparels to suit different occasions. It is possible to use differently graded water recycled at minimal cost for different types of uses not warranting quality of potable water. It is not prudent to use potable high quality water for purposes like toilet flushing, car washing, gardening, etc.

These purposes can be well served by using moderately filtered water. Such thoughtful action can not only lead to conserve precious water but can also increase the life of water main, sewer lines, water treatment plants and ultimately environment.

The nature has bestowed many natural sources for survival of living-being. Water is one of them. It is therefore necessity of the time to utilize the source in such a way so as to last it longer. Recycling of water is one of the ways to achieve the goal.

The Grey-water recycling by-laws have been framed taking into consideration the shortage of water, rise in population, increasing cost in purification of water, cost of water distribution, disposal of sewage and maintenance of environment. These by-laws provide guidance for Grey water recycling in multi-unit residential & commercial buildings. These are intended for use of the building construction industry, system designers, operators & regulators.

Aim of these by-laws is to ensure that Grey water system is operated to consistently produce water to the required quality and there is adequate arrangement to avoid cross connection or inappropriate use of water.

The recycling of Grey and black water of residential buildings is a part of 'Eco Housing' and specific bylaws are expected for promote and regulate Grey Water recycling and reuse in Commercial units in the Aurangabad Municipal Corporation's limits.

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MODEL BYLAWS FOR AURANGABAD MUNICIPAL CORPORATION

(The Grey Water Recycling and Water Incentive Bylaws)

Whereas it is expedient to regulate the activities such as

- a. Acceptance of long-terms, intermittent, or temporary discharge of gray water waste/commercial waste or other wastes to the Grey Water/ sewerage system.
- b. Establishment of grades of commercial wastes such as controlled waste, conditional waste and prohibited waste as the case may be.
- c. Classification of domestic/commercial waste discharges against specified criteria.
- d. Pretreatment of Grey Water, sewage and Grey water before it is accepted for reuse for the purpose of non-potable use.
- e. Installation of flow meters, samplers or other devices to measure flow and quality of the sewage, recycled water and waste discharge.
- f. Pretreatment of Grey Water and sewage as per classification before it is accepted for discharge to the sewerage system.
- g. Separation of non-potable water plumbing and potable water plumbing.
- h. Sampling and monitoring of commercial waste discharges to ensure compliance of conditions under the Bylaw.
1. AMC to accept or refuse a commercial waste discharge.
- J. Taxes to be levied to cover the cost of conveying, treating and disposing of and the associated costs of administration and monitoring.
- k. Establishment of waste minimization and management programs for commercial waste and household waste producers.
 1. Encouraging the use of treated recycles water for not-potable use;
- m. Tax benefits in water tax and sewerage tax for using recycled water for not-potable use.

Within the limits of AMC, these Model Bylaws have been prepared. These Model Bylaws are prepared on the basis of the draft bylaws of Municipal Corporation of greater Mumbai.

1. Definitions

In this Bylaws.

1. **'Access point'** means a place where access may be made to a private sewer for inspection (including sampling or measurement), cleaning or maintenance that meets the requirements of the municipal norms in that respect and also termed as an opening before "discharge".
2. **'Approved'** means approved in writing by an authorized officer of the AMC.
3. **'Authorized officer'** means any person appointed by the Municipal Commissioner of AMC for the purposes of acting as an authorized officer under this Bylaw.
4. **'Characteristic'** means any of the physical or chemical characteristics of commercial waste or/domestic waste.
5. **'Conditional commercial waste'** means commercial waste that has, or is likely to have, characteristics which exceed any of the controlled waste characteristics defined, but which does not exceed any characteristics of a prohibited commercial waste.
6. **'Discharge Management Plan'** means a plan for the monitoring, programming and controlling of the effluent from recycling water treatment plant and discharges in to the municipal sewage system.
7. **'Discharge' or 'Discharge of wastes'** means the removal of wastes from commercial plant or other premises into the Grey Water system or by means of the system;
8. **'Disconnection'** means the physical cutting and /or sealing of the private sewer from the wastewater system.
9. **'Domestic Waste water'** means either wastewater that is typically discharged from premises that are used solely for residential activities or wastewater of the same character discharged from other premises.
10. **'Grey water'** means involving water from sinks, tubs, showers and washing.

11. **'Commercial premises'** means any premises which is being used or intended to be used (whether for profit or not) for carrying on any trade, business, education, research or industry.
12. **'Commercial Waste' or 'Wastes'** are the waste removed from commercial plant or other premises by way of discharge any liquid, with or without matter in suspension or solution therein, that is or may be discharged from trade premises in the course of any trade or commercial process or operation or in the course of any activity or operation of a like nature.
13. **'Inspector'** includes whomever the Municipal Commissioner has appointed in writing for the purposes of this Bylaw.
14. **'ISO 5667'** means the latest edition, complete with any amendments, of International Standard ISO 5667: 1994 Water Qualities Sampling.
Part 1: 1980 Guidance on the design of sampling programs.
Part 2: 1991 Guidance on sampling techniques.
Part 3: 1994 Guidance on the preservation and handling of samples.
Part 10: 1992 Guidance on sampling of Grey Waters.
15. **'ISO TR 9824'** means the latest edition, complete with any amendments, of International Standard ISO TR 9824: Measurement of liquid flow in open channels.
Part 1: 1990 Measurement of free surface flow in closed conduits - Methods.
Part 2: 1990 Measurement of free surface flow in closed conduits - Equipment.
16. **'Laboratory'** means the agency permitted to test the samples of commercial wastes or waste.
17. **'License'** means the license, issued and renewed annually for the discharge of commercial wastes or other waste, given in writing by the Municipal Commissioner for purposes of this bylaw.
18. **'Mass limit'** means the total mass of any characteristic that is allowed to be discharged to the wastewater system over any twenty-four hour period from any single point of discharge or collectively from several points of discharge.

19. **'Maximum concentration'** means the peak concentration, in the wastewater, of any characteristic that may not be exceeded.
20. **'Occupier'** for the purposes of an commercial plant/housing complexes or premises whoever in fact occupies a industry/premises or part of one, either as an owner, on rent or on lease in any other way;
21. **'Person'** includes a corporation sole and also a body of persons whether corporate or incorporate or partnership firm;
22. **'Point of discharge'** is the physical point where a commercial waste or waste discharge enters the wastewater system.
23. **'Pretreatment'** means any processing of commercial waste or waste designed to reduce .any characteristic in a waste, before discharge to the wastewater system.
24. **'Notice'** means a written communication issued by the Municipal Commissioner or his authorized officer to the 'occupier' of 'property' to provide the recycle facility within the premises.
25. **Premises' means either:**
 - a property which is held under a separate P.R. card of title or for which a separate P.R. title card may be issued and in respect to which a building plans have been or may be issued, or
 - a building which is in possession as an individual unit by a cross-lease, unit title or company lease and for which a certificate of title is available, or land held in public ownership, for a particular purpose, orSeparately assessed to Municipal taxes, individual unit within buildings.
26. **Private sewer'** means that section of a sewer between the premises and the sewerage system.
27. **'Publicly notified'** means published on at least one occasion in a newspaper circulating in the AMC's territory, or under emergency conditions by the most practical means available at that time.
28. **'Receiving waters'** means waters or any natural waters which will receive treated wastes.

29. **'Sewerage System'** means all types of sewers, appurtenances, pumping stations, storage tanks, wastewater treatment facility plants, and other related structures owned by the AMC and used for the reception, treatment and disposal of wastewater and also termed as "wastewater system"
30. **'Standard methods'** for the examination of water and wastewater' means the latest edition complete with any amendments and supplements as published by Pollution Control Board.
31. **'Storm water'** means all surface water run-offs resulting from precipitation.
32. **'Temporary discharge'** means any discharge of an intermittent or short duration. Such discharges include the short-term discharge of an unusual waste from premises subject to an existing permit and the discharge of tinkered wastes.
33. **'AMC'** means local Urban Body of Aurangabad Municipal Corporation confirming to article of 243 P of the constitution of India.
34. **'Waste'** means any water with matter in solution or suspension, domestic wastewater, or liquid waste and includes sewage for the purpose of this bylaw.
35. **'Waste minimization'** means the implementation on trade premises, of operations and restrictions, appropriate to the goal of reducing or eliminating the quantity and toxicity of wastes.
36. **'Wastewater system'** means all types of sewers, appurtenances, pumping stations, storage tanks, wastewater treatment facility plants, and other related structures owned by the AMC and used for the reception, treatment and disposal of wastewater and also termed as "sewerage system".
37. **'Zones'** means the drainage catchments areas of the AMC Limits that are served by separate waste water / sewage treatment plants.

Section A: Grey Water reuse Bylaws

Applicability of the Bylaws:

- 1.1 These by laws are applicable to all housing, commercial and commercial premises which fall in one of the following categories:

Category 1: Whose plot area is more than 2000 Sq. M

Category 2: Water quota is more than 60000 liters/day.

If the 'occupier'/'owner'/ 'co-operative society' has more than one water connection in their name, then the water quota of all connections will be taken into account for the purpose of this bylaw.

Category 3: Premises which has more than 80 dwelling unit of any kind.

2 Discharge of wastes

- 2.1 The owner or occupier of a commercial plant or other premises shall discharge wastes/sewage into the sewerage system and / or shall allow any other person to discharge the same from his plant or premises into the system.
- 2.2 Only in a manner, quantity, or quality that shall not cause damage to the sewerage system or to the flow of the sewage or to the treatment process thereof or not in excess of Municipal water supply received,
- 2.3 Only with a valid permission in accordance with the provisions of this bylaw will be allow the occupier to connect the Waste Water/sewage to the municipal sewer and claim the benefits arising out of recycling of Grey Water.
- 2.4 In a nature or manner or in a way that shall not constitute a nuisance of foul gases or cause a public hazard or otherwise in compliance of this Bylaw.
- 2.5 The recycled water shall be used for non potable, no contact purposes within premises and shall not be connected to sewage/Waste Water system of AMC. However the waste generated by the recycle plant can be connected to AMC sewer network if it of the accepted quality.

3 **Enforcement of Bylaws:**

- 3.1 In case of existing properties, Municipal Commissioner or his authorized officer will issue a notice to the occupier for making arrangements of Reuse of Grey Water within specified time.
- 3.2 In case of proposed/intending/under redevelopment properties, the occupier/developer/builder will submit an application directly or through his authorized consultant to the Municipal Commissioner with details of proposed 'Discharge Management Plan ` along with the application for demand of water and permission to connect the Grey Water/sewage to municipal sewage system

4 **Granting a Permission**

- 4.1 Every premises/ will be granted permission for the discharge of commercial wastes or wastes to the municipal sewerage system only if the recycling measures for Grey Water and conditions set forth in Schedules to this Bylaw are fulfilled.

5 **Waste tests and their results.**

- 5.1 An occupier of an commercial plant or premises requiring a license shall provide to the Municipal Commissioner or an authorized officer once a year for the purpose of receiving a license, test results of the commercial wastes discharged from the plant or premises.
- 5.2 Without derogating the provisions specified in clause of bylaw 4, the occupier of a premises requiring a license or the occupier of a controlled plant or premises, shall provide to Municipal Commissioner test results of commercial wastes or waste discharged from the plant or premises at any time he is required in writing to do so by the Municipal Commissioner.
- 5.3 The testing of wastes and the submission of the results shall be done in a manner in accordance with the terms and conditions prescribed by the Municipal Commissioner or an authorized officer in this regard;

This bylaw does relinquish the authority of Municipal Commissioner, his agent or an authorized officer of their authority to visit the plant/premises at all reasonable time.

6. **Notice for testing of discharge.**

6.1 The Municipal Commissioner may order the testing of samples of commercial wastes or wastes as described in clause of bylaw 5 if he feels that the circumstances so demand, and he may, by written notice, direct the plant or premises occupier to pay the expenses of performing such tests;

6.2 A controlled plant whose occupier received notice as stated in clause of bylaw (5) shall comply the provisions of bylaw (4) prescribed above for that purpose.

7. **Operational Permission for the Grey 'Water Recycling Treatment Plant**

7.1 Municipal Commissioner may determine on the basis of test results of the wastes that were provided to him or that were performed at his instance or behalf, that a recycled water plant is fulfilling the requirements and will issue permission in writing to put the plant on permanent to the occupier.

7.2 The occupier shall operate the plant as specified.

8. **Separation of Grey water.**

8.1 The wastes from toilets in Commercial plant or premises will be separated from Grey water that is of bathroom and kitchen wastes by means of separate down take discharge system. The Grey water shall be recycled by providing recycling plant and shall be reused for non-potable purposes after storing the same in the distinctly separate tank by means of green colored down take pipes. The water quality shall conform to standards of non potable water. The recycled water shall be tested once in six months and results shall be made available to Municipal Commissioner or his authorized officer whenever demanded.

9. **Conditional Waste Discharge Permission**

9.1 Waste discharges of the conditional type plant will be allowed on the issue of a conditional permission provided the conditional type plant has recycling and reuse of water facility and not exceeding limits given in as per MPCB norms.

10 **Mandatory notice regarding changes.**

- 10.1 An occupier of a premises shall inform the Municipal Commissioner or his authorized officer of any change in the quantity, nature or quality of the wastes discharged from his plant or premises, the manner of their discharge or extra requirement of external supply of water immediately if the change is likely to cause discharge of wastes in variation or violation of license issued under these Bylaws.

11 **Authority to change license/notice conditions.**

- 11.1 The Municipal Commissioner or his authorized officer, having given a license or a notice in writing by the authority vested in him by this bylaw, may revoke, modify or stipulate conditions to the license or notice if satisfied on inspection of the plant, premises or test reports.

12. **Interference with the Authority.**

- 12.1 Interference with the authority of the Municipal Commissioner or his agent or with the authorized officer is strictly prohibited.

13. **Delivery of Notice/Permission.**

- 13.1 Notice/Permission required by this Bylaw shall be deemed to have been delivered lawfully. If it is given into the hand of their intended receiver with acknowledgement, or delivered to his place of residence or his place of occupation or place known to be so with acknowledgement, or to an adult member of his Family or to an adult employee with acknowledgement, or if sent by registered mail to the same person according to his place of residence, or normal place of employment recently known to be so. If it is not possible to make the delivery as stated, the notice will be assumed to have been delivered lawfully if the notice is pasted in a conspicuous place in one of the above stated locations.

14 **Corrective action.**

- 14.1 Any person violating the provisions of these bylaws shall be fined Rs.5000/- only on the day of detection and if the violation continues shall be fined Rs. 100/- only for every day as a corrective action after a written notice delivered to him from the Municipal Commissioner or his

authorized officer.

14.2 Failure to operate (as determined by the Inspector or authorized officer of AMC from the observations of test results and/or physical verification) the recycling plant will attract a penalty of Rs. 500/- per day and /or disconnection of water connection.

15. **Authorization of officers**

15.1 Municipal Commissioner will authorize his officers/inspectors and will delegate the necessary powers for carrying various duties under this bylaw.

Section B: Water incentive bylaws.

16 Separate plumbing for Grey water and provision of recycling for new buildings.

16.1 Every developer/builder shall provide the newly constructed building with the provision of separate down take plumbing for Grey water, recycling water plant, and storage and reuse fittings before selling the building.

17. Separate plumbing for Grey water and provision of recycling for existing buildings.

17.1 Every existing buildings /residential structures shall provide with the provision of recycled water plant and relevant adequate separate plumbing for Grey water and reuse fittings.

18. Reuse of water strictly for non potable non-contact use.

18.1 The reuse of water will be strictly for not potable use by means of providing a distinctly separate reuse system colored in green. The non-contact uses shall be restricted to toilet flushing, drip irrigation of trees/shrubs, sub-surface irrigation of lawns, ground water re-charge & floors/street washing.

19. No cross-connection of potable and non-potable water.

19.1 There shall not be cross-connection of fitting of the potable and non-potable water at any point. The recycled water system shall be maintained at a lower operating pressure than that of the potable water system. Precautions should be taken at the make-up connection to prevent cross contamination. Precautions should be taken to ensure that the storage tank of treated water should be cleaned periodically.

20. Recycled water measurement.

20.1 The recycled water will be measured by means of flow meter/water meter before storing the same in a separate storage tank. The flow meter/water meter will be sealed by AMC. The flow meter/water meter shall be read monthly by the occupier and shall make available the results whenever demanded.

21. **Rebate in water tax.**

21.1 If the recycled quantity of water is observed to be more than 25 percent of the total quantity received by the structure or residential building, then the building / residential structure would be eligible for 25 percent rebate in water taxes on reducing their potable water consumption by 25 percent. The rebate shall be reviewed every year.

22. **Rebate in Sewerage tax.**

22.1 If the Municipal Commissioner or his authorized officer certifies that the building or residential structure has successfully reduced their potable water consumption by 25 percent, the sewerage tax of the structure/residential building would be eligible for 25 percent rebate in the relevant period, save the extra quantity used by an commercial or a residential premises.

23 **Dispute Resolution**

23.1 All the disputes arising in the enforcement of this bylaw shall be referred to Municipal Commissioner, who in turn will resolve the disputes in consultation with his authorized officers and intimate to the occupier/builder/developer. The decision of the Municipal Commissioner will be final and binding on the occupier.

ANNEXURE A: Proposed Layout.

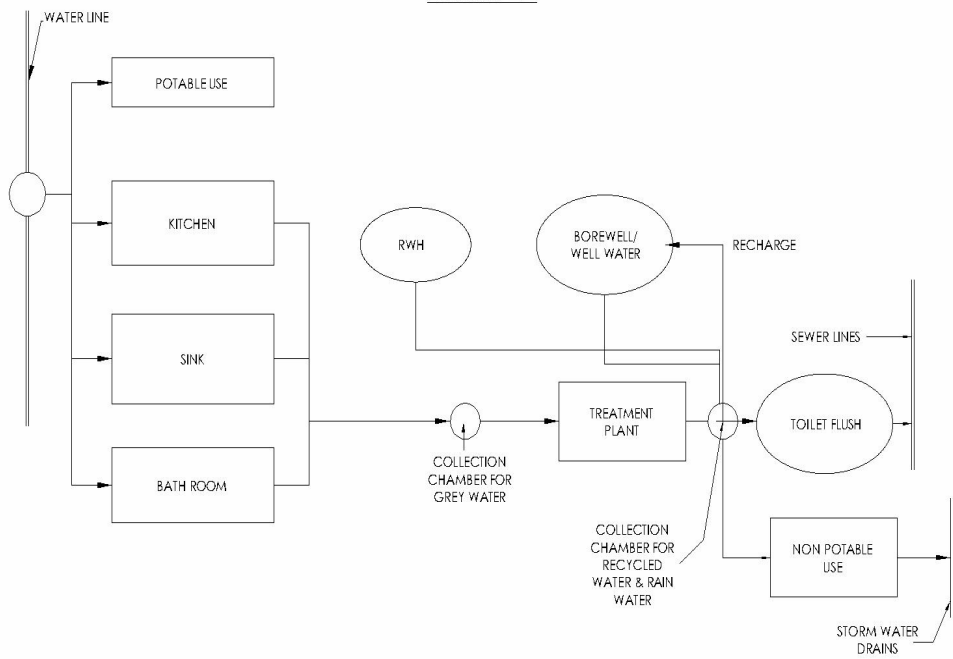
ANNEXURE B: Authorized Laboratories within Aurangabad City.

ANNEXURE C: Characteristics of effluent water quality from the Grey Water Recycling plants.

AURANGABAD MUNICIPAL CORPORATION, AURANGABAD.

CONCEPTUAL GREY WATER RECYCLE SYSTEM PROPOSED UNDER BYE LAWS.

ANNEXURE - A



Annexure - B

(Authorized Laboratories within Aurangabad City)

1.	State Regional laboratory, Contentment area, Aurangabad.
2.	Hydrology Project laboratory, Near Hegadewar Hospital, Aurangabad.
3.	Government College of Engineering, Osmanpura, Aurangabad.
4.	Government polytechnic, Osmanpura, Aurangabad.

Annexure-C

Characteristics of effluent water quality from the Grey Water Recycling Plants.

- 1) B.O.D. : Less than 5 ml. per liter.
- 2) PH : Between 6.5 to 7.5