

Recommendation concerning the Treatment of Municipal Waste Water

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The Commission,

recalling Paragraph 1 of Article 2 of the Danube River Protection Convention in which the Contracting parties shall strive at achieving the goals of a sustainable and equitable water management, including the conservation, improvement and the rational use of surface waters and ground water in the catchment area as far as possible,

recalling also Paragraph 2 of Article 2 of the Danube River Protection Convention according to which the Contracting Parties pursuant to the provisions of this Convention shall cooperate on fundamental water management issues and take all appropriate legal, administrative and technical measures, to at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused;

recalling further Paragraph 4 of Article 2 of the Danube River Convention in which the Contracting Parties agree with that the 'Polluter pays Principle' and the 'Precautionary Principle' constitute a basis for all measures aiming at the protection of the Danube River and of the waters within its catchment area;

recalling further Paragraph 2 b of Article 5 in which the Contracting Parties agree with to adopt legal provisions providing for requirements including time limits to be met by waste water discharges;

recalling further Paragraph 1 of Article 7 in which is agreed with by the Contracting Parties that for municipal waste water, emission limits shall be based in the application of at least biological or an equivalent level of treatment;

recognising that the treatment of municipal waste waters including phosphorus and nitrogen removals has been found to be necessary in all parts of the Danube River catchment area in order to improve the ecological status of its waters and that of the Black Sea;

recognising that some Contracting Parties have to implement and other Contracting Parties will have to implement the requirements established in European Directives concerning urban waste water treatment;

recognising also that in an urban area the sewerage system and the sewage treatment plant must be regarded as a unit when the pollution load is dealt with;

recognising also that the major pollutants of municipal waste water are organic matters (measured e.g. as BOD₅), nitrogen and phosphorous;

desiring to limit this pollution by effective treatment of municipal waste waters;

recommends to the Contracting Parties of the Danube River Protection Convention that:

- a) municipal waste water (waste water from households of the mixture of waste water from households with industrial waste water and/or run-off rain water), loaded with more than 2000 population equivalents (1 p. e. = 60 g BOD₅/d), should be collected and treated before being discharged into water bodies. Where the establishing of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost, individual systems or other appropriate systems which achieve the same level of environmental protection should be used.
- b) municipal waste water which is collected in a sewerage system and treated in waste water treatment plants, loaded with more than 2,000 population equivalents, should be treated by biological methods or other methods giving equivalent results, in order to achieve the following results (homogenised unfiltered, undecanted sample; flow-proportional or time-based 24 hour-samples¹):

BOD ₅ ²	25 mg/l or 70 - 90 minimum percentage of reduction ³
COD _{cr}	125 mg/l or 75 minimum percentage of reduction ³

For these two parameters the maximum number of samples which are allowed to fail the requirements, expressed in concentrations and/or percentages reductions is specified in the Annex. For the parameters, expressed in concentrations, the failing samples must not deviate from the required values by more than 100 %. Alternative methods to those just mentioned may be used provided that it can be demonstrated that equivalent results are obtained.

- c) municipal waste water, loaded with more than 10,000 p. e., which is foreseen for nitrogen and phosphorus removal, should be treated in order to achieve the following results (homogenised unfiltered, undecanted sample, annual mean values):

Total Phosphorus	2 mg/l P	} or 80 minimum percentage
	(10,000 - 100,000 p. e.)	
	1 mg/l P	
	(more than 100,000 p.e.)	
Total Nitrogen ⁴	15 mg/l N ⁵	} or 70 - 80 minimum
	10,000 - 100,000 p. e.)	
	10 mg/l N ⁵	
	(more than 100,000 p. e.)	

¹ Alternative methods may be used provided that it can be demonstrated that equivalent results are obtained.

² Determination of dissolved oxygen before and after five-day incubation at 20°C F 1°C, in complete darkness. Addition of a nitrification inhibitor.

³ Reduction in relation to the load of the influent.

⁴ Total Nitrogen means the sum of NH₄-N, NO₂-N, NO₃-N and organic N.

⁵ The implementation of these limit values indicated for nitrogen which are annual mean values could be checked by daily mean values, if daily mean values do not exceed 20 mg/l. This requirement refers to a water temperature of 12 °C or more during the operation of the waste water treatment plant. As a substitute for the condition concerning the temperature, it is possible to apply a limited time of operation, which takes into account the regional climate conditions.

One or both parameters may be applied depending on the local situation.

The requirements for Total Phosphorus and Total Nitrogen need not apply for every municipal waste water treatment plant, if it can be shown, that the minimum percentage of reduction of the overall load entering all municipal waste water treatment plants in that area is at least 75 % for total phosphorus and at least 75 % for nitrogen.

In case of lack of investments for tertiary treatment priorities should be aimed first at phosphorus removal, starting with plants bigger than 100,000 p. e. Nitrogen removal should at least be considered in the planning process.

- d) Sludge arising from waste water treatment should be re-used whenever appropriate. The disposal of sludge to surface waters should be phased out. The disposal of sludge should be subject to general rules or authorisation.

Recommends further that inventories of municipal discharges or waste water treatment plants loaded with more than 10,000 p. e. are compiled by the Contracting Parties every second year beginning one year after the adoption of this Recommendation and sent to the Commission including a report of actions.

Recommends further that in the light of possible new developments this recommendation should be rediscussed at the latest in 2004.

Annex

Series of samples taken in any year	Maximum permitted number of samples, which fail to conform
4 – 7	1
8 – 16	2
17 – 28	3
29 – 40	4
41 – 53	5
54 – 67	6
68 – 81	7
82 – 95	8
96 – 110	9
111 – 125	10
126 – 140	11
141 – 155	12
156 – 171	13
172 – 187	14
188 – 203	15
204 – 219	16
220 – 235	17
236 – 251	18
252 – 268	19
269 – 284	20
285 – 300	21
301 – 317	22
318 – 334	23
335 – 350	24
351 - 365	25