

# **S.I. No. 254/2001 — Urban Waste Water Treatment Regulations, 2001**

## **STATUTORY INSTRUMENTS**

**S.I. No. 254 of 2001**

### **URBAN WASTE WATER TREATMENT REGULATIONS, 2001**

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#### **Urban Waste Water Treatment Regulations, 2001**

In exercise of the powers conferred on the Minister for the Environment and Local Government by sections 6 and 59 of the Environmental Protection Agency Act, 1992 (No. 7 of 1992), which said powers were delegated to me by the Environment and Local Government (Delegation of Ministerial Functions)(No. 2) Order, 1997 ( S.I. No.428 of 1997 ), and for the purpose of giving effect to the Directive of the European Parliament and of the Council of 23 October 2000 (No. 2000/60/EC)<sup>(1)</sup> and to the Council Directive of 21 May 1991 (No. 91/271/EEC)<sup>(2)</sup> as amended by the Commission Directive of 27 February 1998 (No. 98/15/EC)<sup>(3)</sup>, I Dan Wallace, Minister of State at the Department of the Environment and Local Government, hereby make the following Regulations;

1. These Regulations may be cited as the Urban Waste Water Treatment Regulations, 2001.
2. In these Regulations -

any reference to an article or Schedule which is not otherwise identified is a reference to an article or Schedule of these Regulations;

any reference to a sub-article which is not otherwise identified is a reference to a sub-article of the article in which the reference occurs;

“agglomeration” means an area where the population and/or economic activities are sufficiently concentrated for urban waste water to be collected and conducted

to an urban waste water treatment plant or to a final discharge point;

“appropriate treatment” means treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and of other Community Directives;

“coastal waters” means the waters outside the low-water line or the outer limit of an estuary;

“collecting system” means a system of conduits which collects and conducts urban waste water;

“domestic waste water” means waste water from residential settlements and services which originates predominantly from the human metabolism and from household activities;

“estuary” means the transitional area at the mouth of a river between freshwater and coastal waters;

“eutrophication” means the enrichment of water by nutrients especially compounds of nitrogen and/or phosphorus, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned;

“industrial waste water” means any waste water which is discharged from premises used for carrying on any trade or industry, other than domestic waste water and run-off rain water;

“population equivalent” is a measurement of organic biodegradable load and a population equivalent of 1 (1 p.e.) means the organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60g of oxygen per day; the load shall be calculated on the basis of the maximum average weekly load entering the treatment plant during the year, excluding unusual situations such as those due to heavy rain;

“secondary treatment” means treatment of urban waste water by a process generally involving biological treatment with a secondary settlement or other process in which the requirements established in Part 1 of the Second Schedule are respected;

“sensitive areas” means those areas specified in the Third Schedule and such other areas as may be identified pursuant to Article 5 of the Directive;

“sludge” means residual sludge, whether treated or untreated, from urban waste water treatment plants;

“the Directive” means Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment as amended by the Commission Directive of 27 February 1998 (No. 98/15/EC), and references to other Community Directives are references to Directives other than Council Directive 91/271/EEC;

“urban waste water” means domestic waste water or the mixture of domestic waste water with industrial waste water and/or run-off rain water.

3. (1) Subject to sub-articles (2) and (3), a sanitary authority shall provide a collecting system for urban waste water -
  - (a) on the commencement of these Regulations for every agglomeration with a population equivalent of more than 10,000 which discharges into any of the sensitive areas specified in Part 1 of the Third Schedule or into the relevant catchment areas of such sensitive areas,
  - (b) on the commencement of these Regulations for every agglomeration with a population equivalent of more than 15,000,
  - (c) by 31 December 2005 for every agglomeration with a population equivalent between 2,000 and 15,000.
- (2) A collecting system required under sub-article (1) shall satisfy the requirements of the First Schedule.
- (3) Sub-article (1) shall not apply where the provision of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost, provided that the sanitary authority is satisfied that individual systems or other appropriate systems are used which achieve the same level of environmental protection.
4. (1) In the case of urban waste water entering collecting systems, a sanitary authority shall provide treatment plants which provide for secondary treatment or an equivalent treatment -
  - (a) on the commencement of these Regulations, or such later date, not being later than 31 December 2005, as the European Commission may agree pursuant to a request under Article 8 of the Directive, in respect of all discharges from agglomerations with a population equivalent of more than 15,000,
  - (b) by 31 December 2005 in respect of all discharges from agglomerations with a population equivalent of between 10,000 and 15,000;
  - (c) by 31 December 2005 in respect of all discharges to freshwaters and estuaries from agglomerations with a population equivalent of between 2,000 and 10,000.
- (2) (a) Notwithstanding sub-article (1) and subject to sub-articles (3) and (4), a sanitary authority shall provide treatment plants which provide more stringent treatment than secondary treatment or an equivalent treatment in respect of all discharges from agglomerations with a population equivalent of more than 10,000 into sensitive areas or into the relevant catchment areas of sensitive areas where the discharges contribute to the pollution of these areas.

- (b) A treatment plant to be provided by a sanitary authority in accordance with this sub-article shall be provided —
    - (i) on the commencement of these Regulations in the case of a sensitive area specified in Part 1 of the Third Schedule, and
    - (ii) by 31 May 2008 in the case of a sensitive area specified in Part 2 of the Third Schedule.
- (3) Subject to sub-article (4), a discharge from a treatment plant required under sub-article (2) shall satisfy the requirements of Parts 1 and 2 of the Second Schedule.
- (4)
  - (a) Sub-articles (2) and (3) shall not apply in respect of individual treatment plants where the sanitary authority is satisfied that the minimum percentage of reduction of the overall load entering all urban waste water treatment plants in a sensitive area is at least 75% for total phosphorus and for total nitrogen.
  - (b) Sub-article (3) shall not operate to require the reduction of nutrients in discharges to estuaries, bays or coastal waters where the sanitary authority is satisfied that such reduction will have no effect on the level of eutrophication in the receiving waters.
- 5. Notwithstanding the provisions of article 4, more stringent requirements than those specified in Parts 1 and 2 of the Second Schedule shall be applied to discharges from a treatment plant where this is required to ensure that the receiving waters satisfy any other relevant Community Directives.
- 6. The water bodies specified in the Third Schedule are hereby identified as sensitive areas for the purposes of these Regulations.
- 7. A sanitary authority shall ensure by 31 December 2005 that urban waste water entering a collecting system shall before discharge be subject to appropriate treatment in the following cases:
  - (a) in respect of discharges to freshwater and estuaries from agglomerations with a population equivalent of less than 2,000;
  - (b) in respect of discharges to coastal waters from agglomerations with a population equivalent of less than 10,000.
- 8.
  - (1) A sanitary authority shall ensure that a treatment plant provided in compliance with the requirements of these Regulations is designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions
  - (2) Seasonal variations of the load shall be taken into account when designing a treatment plant.
  - (3) A treatment plant shall be so designed or modified that representative

samples can be obtained of the incoming waste water and of treated effluent before discharge to receiving waters.

- (4) A point of discharge of urban waste water shall be so chosen as to minimise the adverse effects on the receiving environment.
9. A sanitary authority shall take all such steps, as may be appropriate, in discharge of its functions under sections 16 and 17 of the Local Government (Water Pollution) Act, 1977 (No. 1 of 1977), as amended respectively by sections 12 and 13 of the Local Government (Water Pollution) (Amendment) Act, 1990 (No. 21 of 1990), and under section 97 of the Environmental Protection Agency Act, 1992 (No. 7 of 1992), to ensure that the requirements of the Fourth Schedule are met with respect to the discharge of industrial waste water and shall review, and if necessary revise, any licence concerned at regular intervals.
10. (1) A sanitary authority shall carry out, cause to be carried out, or arrange for, the monitoring of:
- (a) discharges from urban waste water treatment plants in accordance with the procedures set out in the Fifth Schedule in order to verify compliance with the requirements of these Regulations, as appropriate, and
  - (b) waters subject to a discharge from an urban waste water treatment plant where it can be expected that the receiving waters will be significantly affected.
- (2) The results of monitoring carried out under this article shall be transmitted to the Agency in such manner and at such times as the Agency shall direct.
11. The Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations, 1994 (S.I. No. 419 of 1994) and the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment)(Amendment) Regulations, 1999 (S.I. No. 208 of 1999) are hereby revoked.

## **First Schedule**

### **Collecting Systems**

A collecting system shall take into account waste water treatment requirements.

The design, construction and maintenance of a collecting system shall be undertaken in accordance with the best technical knowledge not entailing excessive costs, notably regarding;

- volume and characteristics of urban waste water.
- prevention of leaks, and

- limitation of pollution of receiving waters due to storm water overflows.

## Second Schedule

### Part 1

The values for concentrations or for the percentage of reduction shall apply.

Parameters	Concentration	Minimum percentage of reduction <sup>(1)</sup>	Reference method of measurement
Biochemical oxygen demand (BOD <sub>5</sub> at 20° C) without nitrification <sup>(2)</sup>	25 mg/l O <sub>2</sub>	70-90	Homogenized, unfiltered, undecanted sample. Determination of dissolved oxygen before and after five-day incubation at 20° C ± 1° C, in complete darkness. Addition of a nitrification inhibitor
Chemical oxygen demand (COD)	125 mg/l O <sub>2</sub>	75	Homogenized, unfiltered, undecanted sample Potassium dichromate
Total suspended solids	35 mg/l	90	- Filtering of a representative sample through a 0,45 um filter membrane. Drying at 105°C and weighing  - Centrifuging of a representative sample (for at least five mins with mean acceleration of 2,800 to 3,200 g), drying at 105°C and weighing

### Part 2

Requirements for discharges from urban waste water treatment plants to sensitive areas. One or both parameters may be applied depending on the local situation. The values for concentration or for the percentage of reduction shall apply.

Parameters	Concentration	Minimum	Reference
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		<b>percentage of reduction <sup>(1)</sup></b>	<b>method of measurement</b>
Total phosphorus	2 mg/l  (10,000 - 100,000 p.e.)  1 mg/l  (more than 100,000 p.e.)	80	Molecular absorption spectrophotometry
Total nitrogen <sup>(2)</sup>	15 mg/l  (10,000 - 100,000 p.e.) <sup>(3)</sup>  10 mg/l  (more than 100,000 p.e.) <sup>(3)</sup>	70 - 80	Molecular absorption spectrophotometry

### **Third Schedule**

#### **Sensitive Areas**

##### **Part 1**

#### ***Rivers***

River Boyne, County Meath - 6.5 km section downstream of sewage treatment works outfall at Blackcastle, Navan, County Meath.

River Camlin, County Longford - from sewage treatment works at Longford to entry into the River Shannon.

River Castlebar, County Mayo - downstream of sewage treatment works outfall at Knockthomas to entry into Lough Cullin.

River Liffey - downstream of Osberstown sewage treatment works to Leixlip reservoir, County Kildare.

River Nenagh, County Tipperary - downstream of sewage treatment works outfall in Nenagh to entry into Lough Derg.

River Tullamore, County Offaly - 0.5 km section downstream of sewage treatment works outfall in Tullamore.

### ***Lakes***

Lough Derg and Lough Ree on the River Shannon.

Lough Leane, County Kerry.

Lough Oughter, County Cavan.

## **Part 2**

### ***Rivers***

River Blackwater (Monaghan) - from the confluence of the River Shambles to Newmills Bridge.

River Brosna - downstream of Mullingar sewage outfall [opposite intersection of regional road (R400) with N52 south of Mullingar], to Lough Ennell.

River Cavan - from the bridge at Lisdarn downstream of Cavan Town to the Annalee River confluence.

River Proules - downstream of Carrickmacross sewage outfall, to confluence with the River Glyde.

River Barrow - downstream of Portarlinton sewage outfall, to Graiguenamanagh Bridge.

River Triogue - downstream of Portlaoise sewage outfall, to confluence with the River Barrow.

River Nore - downstream of Kilkenny sewage outfall, to Inistioge Bridge.

River Hind - downstream of Roscommon Town sewage outfall, to Lough Ree.

River Suir - downstream of Thurles sewage outfall, to Twoford Bridge.

River Suir - downstream of Clonmel sewage outfall, to Coolnamuck Weir.

Little Brosna River - downstream of Roscrea sewage outfall below its confluence with the Bunow River, to the bridge near Brosna House.

River Blackwater (Munster) - downstream of Mallow railway bridge, to Ballyduff Bridge.

### ***Lakes***

Lough Ennell, County Westmeath.

Lough Muckno, County Monaghan.

Lough Monalty, County Monaghan.

### ***Estuaries***

Broadmeadow Estuary (Inner) - from the bridge west of Lissenhall (Broadmeadow River) to the railway viaduct.

Liffey Estuary - from Islandbridge weir to Poolbeg Lighthouse, including the River Tolka basin and South Bull Lagoon.

Slaney Estuary (Upper) - from Enniscorthy railway bridge to Macmine.

Slaney Estuary (Lower) - from Macmine to Drinagh / Big Island

Barrow Estuary - from the weir at Bahana Wood to New Ross Bridge.

Suir Estuary (Upper) - from Coolnamuck Weir to Mount Congreve.

Bandon Estuary Upper - from Inishannon Bridge to Kinsale Western Bridge.

Bandon Estuary Lower - downstream of Kinsale Western Bridge, to Money Point.

Lee Estuary Upper (Tralee) - from Ballymullin Bridge to seaward end of Tralee Ship Canal / Annagh Island.

Feale Estuary Upper - downstream of Finuge Bridge, to Poulnahaha old Railway Bridge.

Cashen / Feale Estuary - downstream of Poulnahaha old Railway Bridge, to Moneycashen.

Killybegs Harbour - Killybegs Harbour inside Kane's Rock / Carntullagh Head.

Castletown Estuary - from the weir 130 m downstream St. Johns Bridge (Castletown River) to Pile Light.

Blackwater Estuary Upper - from Bullsod Island (1 km downstream Lismore Bridge) to Dromana Ferry.

Blackwater Estuary Lower - downstream of Dromana Ferry, to near East Point, Youghal Harbour.

### **Fourth Schedule**

#### **Industrial Waste Water**

Industrial waste water entering collecting systems and urban waste water treatment plants shall be subject to such pre-treatment as is required in order to:

protect the health of staff working in collecting systems and treatment plants;

ensure that collecting systems, waste water treatment plants and associated equipment are not damaged;

ensure that the operation of a waste water treatment plant and the treatment of sludge are not impeded;

ensure that discharges from treatment plants do not adversely affect the environment or prevent receiving waters from complying with other Community Directives;

ensure that sludge can be disposed of safely in an environmentally acceptable manner.

### **Fifth Schedule**

#### **Reference methods for monitoring and evaluation of results**

1. Sanitary authorities shall ensure that a monitoring method is applied which corresponds at least with the level of requirements described below. Alternative methods to those mentioned in paragraphs 2, 3 and 4 may be used provided that it can be demonstrated that equivalent results are obtained.
2. Flow-proportional or time-based 24-hour samples shall be collected at the same well-defined point in the outlet and if necessary in the inlet of the treatment plant,

in order to monitor compliance with the requirements for discharged waste water specified in these Regulations. Good international laboratory practices aiming at minimising the degradation of samples between collection and analysis shall be applied.

3. The minimum annual number of samples shall be determined according to the size of the treatment plant and be collected at regular intervals during the year:

2,000 to 9,999 p.e.:	12 samples during the first year: four samples in subsequent years, if it can be shown that the water during the first year complies with the provisions of these Regulations; if one sample of the four fails, 12 samples must be taken in the year that follows.
10,000 to 49,999 p.e.:	12 samples
50,000 p.e. or over:	24 samples.

4. The treated waste water shall be assumed to conform to the relevant parameters if, for each relevant parameter considered individually, samples of the water show that it complies with the relevant parametric value in the following way:
- for the parameters specified in Part 1 of the Second Schedule, a maximum number of samples which are allowed to fail the requirements, expressed in concentrations and/or percentage reductions in Part 1 of the Second Schedule, is set out in the Table to this Schedule;
  - for the parameters in Part 1 of the Second Schedule expressed in concentrations, the failing samples taken under normal operating conditions must not deviate from the parametric values by more than 100% but, for the parametric value in concentration relating to total suspended solids, deviations of up to 150% may be accepted;
  - for those parameters specified in Part 2 of the Second Schedule the annual mean of the samples for each parameter shall conform to the relevant parametric values.
5. Extreme values for the water quality in question shall not be taken into consideration when they are the result of unusual situations such as those due to heavy rain.

#### Table

Series of samples taken in any year	Maximum permitted number of samples which fail to conform
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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

Dated this 14th day of June 2001

DAN WALLACE

Minister of State at the Department of the  
Environment and Local Government

### **Explanatory Note**

*(This note is not part of the Instrument and does not purport to be a legal interpretation).*

These Regulations revoke and generally re-enact in consolidated form the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations, 1994, as amended, and prescribed a further 30 water bodies as sensitive areas. The Regulations —

prescribe requirements in relation to the provision of collecting systems and treatment standards and other requirements for urban waste water treatment plants, generally and in sensitive areas

provide for monitoring procedures in relation to treatment plants and make provision for pre-treatment requirements in relation to industrial waste water entering collecting systems and urban waste water treatment plants, and

give effect to provisions of Council Directive 91/271/EEC of 21 May 1991, as amended, concerning urban waste water treatment, and Directive 2000/60/EC of 23 October 2000 - the Water Framework Directive.

- (1) O.J. No. L 327/1, 22.12.2000
- (2) O.J. No. L 135/40, 30.05.91
- (3) O.J. No. L 67/29, 07.03.98

(<sup>1</sup>) Reduction in relation to the load of the influent.

(<sup>2</sup>) The parameter can be replaced by another parameter: total organic carbon (TOC) or total oxygen demand (TOD) if a relationship can be established between BOD<sub>5</sub> and the substitute parameter

(<sup>1</sup>) Reduction in relation to the load of the influent.

(<sup>2</sup>) Total nitrogen means the sum of total Kjeldahl nitrogen (organic and ammoniacal nitrogen), nitrate — nitrogen and nitrite - nitrogen.

(<sup>3</sup>) These values for concentration are annual means as referred to in paragraph 4 (c) of the Fifth Schedule. However, the requirements for nitrogen may be checked using daily averages when it is proved, in accordance with paragraph 1 of that Schedule, that the same level of protection is obtained. In this case, the daily average must not exceed 20 mg/l of total nitrogen for all the samples when the temperature from the effluent in the biological reactor is superior or equal to 12°C. The conditions concerning temperature could be replaced by a limitation on the time of operation to take account of regional climatic conditions.

(<sup>3</sup>) These values for concentration are annual means as referred to in paragraph 4 (c) of the Fifth Schedule. However, the requirements for nitrogen may be checked using daily averages when it is proved, in accordance with paragraph 1 of that Schedule, that the same level of protection is obtained. In this case, the daily average must not exceed 20 mg/l of total nitrogen for all the samples when the temperature from the effluent in the biological reactor is superior or equal to 12°C. The conditions concerning temperature could be replaced by a limitation on the time of operation to take account of regional climatic conditions.