Urban Waste Water Discharges in Ireland

for Population Equivalents Greater than 500 Persons

A Report for the Years 2004 and 2005

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A Report for the Years 2004 and 2005

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Executive Summary

The Environmental Protection Agency (EPA) is required under Section 61(3) of the Environmental Protection Agency Act, 1992, to report on a biennial basis on the quality of effluents being discharged from treatment plants, sewers or drainage pipes which are vested in, controlled or used by local authorities. This report provides an analysis of the treatment of waste water for all agglomerations[1] (mainly cities, towns and villages) with a population equivalent over 500 during 2004 and 2005, the quality of discharges from waste water treatment plants and commentary on trends for the period 1998 to 2005. The report is based on information supplied by local authorities on an annual basis.

The end of the review period (31st December 2005) also coincided with a significant milestone in urban waste water treatment in Ireland, whereby secondary treatment was required for all agglomerations discharging to freshwaters and estuaries with population equivalents of 2,000 or greater and for agglomerations discharging to coastal waters with population equivalents of 10,000 or greater.

The report includes a county-by-county analysis of the performance of secondary waste water treatment plants covering their compliance against the Urban Waste Water Regulations, 2001.

The main findings of the report are:

1. The overall level of treatment provided at 478 agglomerations, which collectively represent a total population equivalent (p.e.) of 5,627,456, was as follows:
    - 11% of waste water arisings received no treatment;
    - 5% of waste water arisings received preliminary treatment;
    - 2% of waste water arisings received primary treatment;
    - 70% of waste water arisings received secondary treatment; and,
    - 12% of waste water arisings received nutrient reduction in addition to secondary treatment.
2. There have been delays in providing the required treatment plants at a number of locations throughout the country. Of the 158 agglomerations requiring secondary treatment or higher by 31st December 2005, the required level of treatment was not in place at 30 of these agglomerations.
3. Large agglomerations which were required to have secondary treatment by 31st December 2000 but as yet has not been provided are: Bray, Howth/Baldoyle/Portmarnock (Partial), Balbriggan, Killybegs, Shangannagh, Sligo Town, Tramore, and Waterford City.
4. The largest untreated discharge to a sensitive area[2] is from Killybegs (Co. Donegal) with an estimated population equivalent of 400,000 p.e.

1 "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.

2 "sensitive areas" Those areas specified in the third schedule of the Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001), Urban Waste Water Treatment (Amendment) Regulations, 2004 (S.I. 440 of 2004) and such other areas as may be identified pursuant to article 5 of the Urban Waste Water Treatment Directive.

5. Secondary waste water treatment plants are now operational in the cities of Cork, Limerick and Galway and these plants are meeting the effluent quality standards set out in the Regulations.

6. Nutrient reduction, which is required for discharges to specified waters considered sensitive to the risk of eutrophication, has been provided for all agglomerations specified by the Regualtions.

7. Compliance with discharge limits for the very large plants (i.e. >15,000 p.e.) has improved; however the majority of smaller treatment plants are not complying with these limits. The compliance rates based on monitoring results are summarised below.

Plant Category	Compliance (%)			
	1998-9	2000-1	2002-3	2004-5
< 2,000 p.e.	18	18	22	19
2,000-15,000 p.e	22	28	29	38
> 10,000 p.e with nutrient reduction	56	68	57	86
> 15,000 p.e	53	64	52	67

8. Local authorities failed to take the required number of samples at 38% of waste water treatments plants with a population equivalent of 2,000 p.e. or over and where samples were taken, 43% of these were taken incorrectly (i.e. Flow-proportional or time-based 24-hour samples were not taken).

9. 121,750 tonnes of dried sludge was produced nationally by wastewater treatment plants in the period 2004-2005. 76% of this went to agriculture and 17% went to landfill.

10. 75 waste water treatment plants were inspected by the EPA between 2004 and 2006. Recurring problems identified at waste water treatment plants visited during audits, which are in need of corrective action, include:

    - Inadequate collection systems for waste water (e.g. combined sewer overflows);
    - Inadequate screening of influent waste water and storm water overflows;
    - Insufficient treatment capacity;
    - Poor assimilative capacity for discharged effluent in some receiving waters; and,
    - Poor sludge management on site and incomplete sludge records.

In evaluating the causes of the non-compliance with the Regulations the EPA has concluded that many waste water treatment plants are under increasing pressure from development that has taken place throughout the country over the last number of years. The operation and management of some overloaded plants has proved difficult for some local authorities.

In order to achieve compliance with the requirements of the Regulations and secure improvements in the quality of effluents from urban waste water treatment plants the EPA makes the following recommendations.

1. The provision of adequate treatment at the 30[3] agglomerations (Table 3.1) that did not have the required level of treatment by December 31st 2005 should be progressed as a matter of urgency. Local authorities need to proceed swiftly with planned schemes in order to ensure full compliance with the Regulations.
2. Local authorities should ensure that all monitoring and analysis is carried out in accordance with the Regulations for all treatment plants including those that are managed and operated by third parties on behalf of the local authority.
3. The frequency and volume of storm overflows within each collection system should be assessed, mapped and ranked in order of polluting potential.
4. Where sludge is reused in Agriculture, Local authorities should ensure that the testing and management of the sludge is compliant with the requirements of the Regulations and in particular that a nutrient management plan is used.
5. Local authorities should prepare an odour management plan for each treatment plant operated by or on it's behalf. The odour management plan should be a documented procedure available at the treatment plant at all times.
6. Local authorities should determine whether all trade effluent discharges are appropriately licensed and should check the compliance of existing licences against their permitted discharge allowance. In particular local authorities should review the discharges from the growing number of food preparation outlets, which may be significant contributors of grease and fat loadings to sewer networks and municipal treatment plants.

[3] Secondary treatment has recently been provided for two of these agglomerations (Dungarvan and Carrick-on-Suir).

1 Introduction and Regulatory Framework

The Environmental Protection Agency (EPA) is required under Section 61(3) of the Environmental Protection Agency Act, 1992, to report on a biennial basis on the quality of effluents being discharged from treatment plants, sewers or drainage pipes which are vested in, controlled or used by local authorities. This report provides an analysis of the treatment of waste water for all agglomerations (mainly cities, towns and villages) with a population equivalent over 500 during 2004 and 2005, the quality of discharges from waste water treatment plants and commentary on trends for the period 1998 to 2005. The report is based on information supplied by local authorities on an annual basis.

The Urban Waste Water Treatment (UWWT) Regulations, 2001 (S.I. 254 of 2001), place a responsibility on local authorities to provide treatment of urban waste water, to monitor discharges from agglomerations and to transmit the results of such monitoring to the EPA.

The Regulations also designated 30 water bodies for special protection including the 10 sensitive areas designated in 1994, for the purpose of tackling eutrophication of Irish waters. In addition, the Urban Waste Water Treatment (Amendment) Regulations, 2004 (S.I. 440 of 2004) designate a further two water bodies as sensitive.

This report also provides an overview of quantities of sewage sludge produced for each county along with a national summary of the main recovery or disposal routes used. Details of the heavy metal concentrations in sewage sludges and soils are also examined.

During the reporting period the EPA carried out a number of audits of local authorities and inspections of waste water treatment plants to assess their management of urban waste water and level of compliance with the Urban Waste Water Regulations and the Use of Sewage Sludge in Agriculture Regulations. The report provides an analysis of the findings and provides recommendations, which should be adopted by the local authorities.

1.1 The Urban Waste Water Treatment Regulations, 2001 and 2004

The Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001), were made by the Minister for the Environment on 14th June 2001 and amended on 15th July 2004. The Regulations give further effect to the provisions of EU Council Directive 91/271/EEC of 21st May 1991, as amended concerning urban waste water treatment, and Directive 2000/60/EC of 23rd October 2000 – The Water Framework Directive. The Regulations designate an additional 32 water bodies as sensitive to eutrophication based on reports by the Environmental Protection Agency. The schedules of the Regulations, which include the parameters to be monitored, and the frequency of monitoring are reproduced in Appendix B of this report.

The Regulations require:

- scheduled provision of waste water collecting systems - depending on the size of the agglomeration and on the type of water body to which the waste water is discharged;

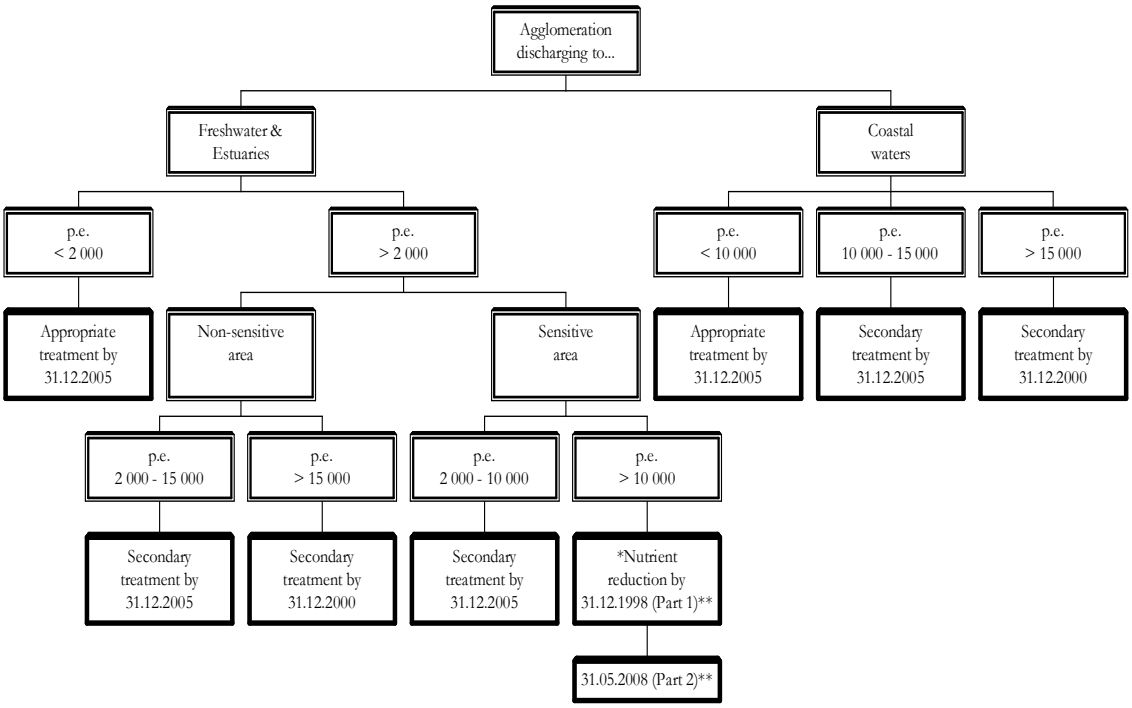
- scheduled provision of waste water treatment plants - depending on the size of the agglomeration and on the type of water body to which the waste water is discharged;
- provision for industrial waste water which enters collecting systems and urban waste water treatment plants to receive any pre-treatment that is required to protect the health of staff, the environment and the fabric and integrity of plant; and,
- monitoring by local authorities of discharges from waste water treatment plants including the transmission of results to the EPA.

The type of treatment facilities required (by the Regulations) for individual agglomerations depend on:

- the size of the agglomeration;
- the type of receiving water body (freshwater, estuarine or coastal water); and,
- whether the receiving water body is sensitive (or not), as defined by the Regulations.

The requirements of the Regulations in respect of the provision of treatment plants are summarised in Figure 1-1.

Figure 1-1: Treatment Plant Requirements



* In addition to secondary treatment

** See Appendix A For Part 1 and Part 2 of Third Schedule

Appropriate treatment is defined in the Regulations as "*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". The level of treatment will depend on local circumstances and will vary from simple physical processes to physical/biological or physical/chemical processes with varying performance standards depending on the quality objectives of the receiving waters. More stringent treatment is required for agglomerations discharging to sensitive waters.

The designation of "sensitive areas" is a requirement of Article 5 of the Directive by reference to the identification criteria given in Annex II of the Directive. These criteria refer to three groups of sensitive areas:

- freshwater bodies, estuaries and coastal waters which are eutrophic or which may become eutrophic if protective action is not taken;
- surface waters intended for the abstraction of drinking water which contain more than 50 mg/l of nitrates; and,
- areas where further treatment is required, to comply with other Council Directives.

Member states are required by the Directive to ensure that the identification of sensitive areas is reviewed at intervals of not more than four years.

The ten water bodies which were originally designated as 'sensitive' by the Minister for the Environment and Local Government are listed in Part 1 of the Third Schedule of the Regulations and a further 30 were designated in the 2001 Regulations and they are set out in Part 2 of the Third Schedule of the Regulations. On 15th of July 2004, Part 2 of the Third Schedule to the Regulations was amended, designating two additional areas (in Cork Harbour), namely the Lee Estuary/Lough Mahon and Owennacurra Estuary/North Channel. Maps identifying these areas and the relevant catchment area are set out in Appendix C.

Nutrient reduction in respect of all discharges from agglomerations with a population equivalent of more than 10,000 was required on commencement of the 2001 Regulations (S.I. 254 of 2001) in the case of sensitive areas specified in Part 1 of the Third Schedule and by 31st May 2008 for those areas specified in Part 2.

Where discharges to sensitive water bodies occur, the Regulations specify emission limit values for total phosphorus and/or total nitrogen in addition to values for BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand) and TSS (Total Suspended Solids), which apply to discharges generally. The 2004 Urban Waste Water (Amendment) Regulations also includes a technical clarification on the reporting of total phosphorus as mg/l P and total nitrogen as mg/l N.

1.1.1 Monitoring of Discharges

One of the principal requirements of the 2001 Urban Waste Water Regulations is to monitor the outflow from treatment plants. For most treatment plants, BOD_5, COD and TSS require monitoring. In addition, where the discharge occurs to sensitive waters (which are specified in the Third Schedule of the Regulations) total phosphorus and total nitrogen monitoring are also required. Details in relation to monitoring requirements are provided in Appendix D.

1.1.2 Storm Water Overflows

The Urban Waste Water Treatment Directive 91/271/EEC requires collection systems and treatment plants to limit pollution of receiving waters due to storm water

overflows (SWO's) and advises Member States to decide on measures to limit pollution from storm water overflows. The Directive advises that such measures could be based on dilution rates or capacity in relation to dry weather flow, or could specify a certain acceptable number of overflows per year. The Department of Environment has previously published guidelines (Procedures and Criteria in relation to Storm Water Overflows) which in summary outlines:

- Directive requirements;
    - This outlines the requirements with respect to the provision of collection systems and their design, construction and maintenance;
- Quality standards;
    - Consideration must be given to all other quality standards for the aquatic environment in relation to the provision or upgraded or new storm water overflows;
- Assessment Criteria for Existing SWO's;
    - The assessment of an existing SWO must include a determination of visual or aesthetic impact and public complaints;
    - The effect on receiving water quality, including their failure to meet the requirements of national regulations and EU Directives;
- Upgrading SWO's and New SWO's;
    - Design criteria must take into account the strength of the sewage and water quality objectives;
    - The siting of overflow discharges and its efficiency in containing floating debris;
- Use of Storage;
    - The use of storage may be used as an alternative to the upgrading of downstream capacity; and,
- Active Control;
    - The use of existing sewer systems and storage capacity may be more effectively used where the response to rainfall events is understood in detail.

In designing and upgrading collection systems it is imperative that all necessary steps are taken to limit the frequency and volume of storm overflows and where necessary provide appropriate screening for the effective containment of detritus and floating debris. Each Local Authority should as a minimum, map the location and spill frequency of all storm overflows within each collection system and rank in order of significance according to Table 1 of the Departments guidelines on storm overflows, referred to above.

1.2 European Communities (Waste Water Treatment)(Prevention of Odours and Noise) Regulations 2005

The European Communities (Waste Water Treatment)(Prevention of Odours and Noise) Regulations 2005 (S.I. 787 of 2005) were made by the Minister for the Environment on 7th December 2005 with a view to addressing the issue of nuisance caused by odours and noise from urban waste water treatment plants provided and

operated by or on behalf of a local authority. The Regulations require that waste water treatment plants are designed, constructed and maintained as to avoid causing nuisance through odours and noise.

1.2.1 Local Authority Responsibility

The main responsibilities of each local authority in relation to the odour and noise regulations are:

- waste water treatment plants must be designed, constructed, maintained and operated to avoid causing nuisance;
- any waste water treatment plant under the local authority's control must be operated and maintained as to ensure that it avoids causing nuisance through odours or noise;
- when granting permission for a development consisting of a treatment plant the authority must attach such conditions to the permission, necessary to ensure that the plant is so operated and maintained as to ensure that it avoids causing nuisance through odours or noise;
- an annual report must be submitted to the Agency by 28th February after the end of each year, including details of any incidents arising from odours or noise in respect of any waste water treatment plant provided by it or on its behalf during that year; and,
- local authorities must maintain records of all environmental complaints received about waste water treatment plants, in accordance with the requirements as set out in the Regulations. The Schedule is reproduced in Appendix E.

1.2.2 EPA Role

The Agency is required to ensure compliance with these Regulations, in particular to ensure that a waste water treatment plant under the local authority's control is so operated and maintained as to ensure that it avoids causing nuisance through odours or noise. This function may be exercised under Section 63 of the EPA Act 2003 or by inspection of any waste water treatment plant as part of a statutory performance audit by the Office of Environmental Enforcement. In addition the Agency may also request complaint records from a local authority for any specific plant over any specified period.

1.3 Sewage Sludge

The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, S.I. No. 148 of 1998 and the Waste Management (Use of Sewage Sludge in Agriculture) (Amendment) Regulations, S.I. No. 267 of 2001 implement the requirements of Sewage Sludge Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.

The Schedule to the Use of Sewage Sludge in Agriculture Regulations sets out maximum values for concentrations of heavy metals in soil (Part I), limit values for amounts of heavy metals which may be added annually to agricultural land, based on a ten year average (Part II), conditions for soil sampling and analysis (Part III),

conditions applying to sludge sampling and analysis (Part IV) and methods of analysis (Part V). These are reproduced in Appendix F.

The Waste Management (Use of Sewage Sludge in Agriculture) (Amendment) Regulations, 2001 were made in June 2001 and amend the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998. The amendments include the replacement of the two tonne per hectare per year limit on the amount of dry matter to be added to the soil, with limits based on absolute quantities of specified heavy metals, which may be applied annually based on a ten year average. Another important amendment is the addition to Article 4 of the Regulations which states that *"A person shall, in using sewage sludge in agriculture; ensure that sludge is not used except in accordance with a nutrient management plan".* Where sludge is applied to land in excess of the nutrient requirement it is considered disposal and not reuse or recycling. The Regulations also require additional analytical data to be included in the local authorities sludge register such as dry matter, organic matter, pH, nitrogen and phosphorus in addition to the metals specified in Part II of the Schedule.

Any person using sludge in agriculture is required under the Regulations[4] to ensure that the quality of the soil, surface water and ground water is not impaired and ensure that sludge is not used except in accordance with a nutrient management plan.

Local authorities are responsible for the preparation of waste management plans for all non hazardous wastes produced within their functional area. The Waste Management (Planning) Regulations, 1997, S.I. 137 of 1997 set out the waste arisings which must be included (Article 2.1(a)). Sludge arisings from urban waste water treatment plants in the local authority area must be quantified and included in the plans.

Section 39 of the Waste Management Act, 1996 states that a person "shall not dispose of or undertake the recovery of waste at a facility unless the person has obtained a waste licence". The treatment of sewage sludge is exempted under the Act provided that the treated sludge is recovered. The EPA considers that the disposal of treated sludge to landfill or application of sludge to lands, which exceed the crop requirements, cannot be considered as recovery. Hence, the exemption provided for in the Act does not apply in these cases. Local authorities are thus required to obtain the appropriate authorisation under the Waste Management Act, where sludge is treated and the resultant sludge is not sent for recovery. Where a design, build and operate model is planned in such circumstances, the local authority is advised to make provision in any contract documents to obtain a waste licence for such an activity.

On the 1st August 2006 the Minister for Environment Heritage and Local Government published the European Communities (Good Agricultural Practice for Protection of Waters) Regulation 2006, S.I. 378 of 2006. The Regulations are designed to afford additional protection to waters from agricultural sources and include measures such as:

- set periods when the landspreading of fertilisers are prohibited;
- limits on the land application of fertilisers;
- set distances from water bodies including boreholes, springs and wells for the abstraction of water used for human consumption;
- storage requirements; and,
- record keeping.

[4] Article 4, The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, S.I. No. 148 of 1998)

Under these Regulations a “fertiliser” is defined as any substance containing phosphorus or a nitrogen compound utilised on land to enhance growth of vegetation and may include livestock manure, residues from fish farms and sewage sludge.

2 Compliance with the Urban Waste Water Regulations

This chapter provides an overview of the compliance with the Urban Waste Water Regulations during the reporting period. Details are provided in relation to:

- the provision of the required infrastructure within the timeframes specified in the Regulations;
- the level of treatment provided during the reporting period;
- monitoring of effluents at urban waste water treatment plants;
- performance of secondary waste water treatment plants; and,
- management of sewage sludge arising from waste water treatment.

2.1 Provision of Infrastructure and Level of Treatment

The tables below set out details on the numbers and relative sizes of agglomerations throughout the country, the class of receiving waters to which waste water from these agglomerations discharge and an analysis of the provision of infrastructure and the level of treatment provided. Details about individual agglomerations and level of treatment provided are presented in Appendix A, grouped by local authority, so that the reader can easily review the information for a particular local authority.

The end of the review period also coincided with a significant milestone in urban waste water treatment in Ireland. By the 31st of December, 2005, secondary treatment was required for all agglomerations discharging to freshwaters and estuaries with a population equivalent of 2,000 or greater and for agglomerations with a population equivalent of 10,000 or greater discharging to coastal waters.

2.1.1 Provision of Infrastructure

30 of the 158 agglomerations requiring secondary treatment by the 31st December 2005, did not have the required level of treatment in place by the end of the reporting period. These agglomerations are listed in Table 2-1. Agglomerations, which required secondary treatment by 31st December 2000 are highlighted with an asterisk.

Table 2-1: Agglomerations for which Secondary Treatment was Not Provided by the Required Date (31/12/05).

Local Authority	Agglomeration *Secondary treatment required by 31st December 2000	Population Equivalent (p.e.)	Receiving Water Type	Expected Construction Commencement/ Status
Clare	Clarecastle	2,500	Estuarine	2009
Cork	Cobh	10,000	Coastal	2009/2010
Cork	Skibbereen	3,500	Estuarine	2007
Cork	Carrigaline	12,000	Estuarine	2009/2010
Cork	Kinsale	5,000	Estuarine	2007
Cork	Passage/ Monkstown	5,000	Estuarine	2009/2010
Cork	Youghal	8,000	Estuarine	2008/2009
Donegal	Ballyshannon	2,000	Estuarine	2006
Donegal	Donegal Town	5,400	Estuarine	At construction
Donegal	Dungloe	2,000	Freshwater	2007
Donegal	Falcarragh	2,000	Estuarine	2007
Donegal	Moville	2,000	Freshwater	2007
Donegal	Killybegs*	400,000	Estuarine	2008
Dun Laoghaire-Rathdown	Shanganagh*	67,500	Coastal	2008
Fingal	Balbriggan*	30,000	Coastal	Due into operation in 2007
Fingal	Howth/Baldoyle/ Portmarnock*	25,000	Coastal	Ongoing
Fingal	Lusk	3,000	Estuarine	2007
Fingal	Skerries	12,500	Coastal	Due into operation in 2007
Galway	Clifden	4,063	Estuarine	2007
Kilkenny	Waterford City Environs	4,000	Estuarine	2007
Sligo	Sligo*	20,000	Coastal	2007
Waterford City	Waterford City Environs*	140,000	Estuarine	2007
Waterford City	Viewmount – Waterford City	3,500	Estuarine	2007
Waterford City	Williamstown/ Grantstown-Waterford City	3,000	Estuarine	2007
Waterford County	Tramore*	15,300	Coastal	Due into operation in 2007
Waterford County	Dungarvan	10,000	Estuarine	In operation since 2006
Waterford County	Carrick-on-Suir	6,000	Freshwater	In operation since 2006
Wexford	New Ross	10,000	Estuarine	2007
Wicklow	Arklow	15,000	Coastal	Delayed
Wicklow	Bray*	40,000	Coastal	2008

A summary of those agglomerations that did not have the required level of treatment in place by December 31st 2005 and categorised by agglomeration size and receiving water type is provided in Table 2-2.

Table 2-2: Agglomerations without the Required Level of Treatment

Class of Agglomeration	Receiving Water		
	Estuarine	Freshwater	Coastal
From 2,000 to 9,999 p.e	13	3	
From 10,000 to 15,000 p.e	3	0	3
> 15,000 p.e	2	0	6
Total	18	3	9

*Part 1 of the Third Schedule of the Regulations

Plans for the provision of the necessary infrastructure, however, are in place for the majority of these agglomerations as part of the Water Services Investment Programme 2005–2007[5], with treatment plants at various stages of planning/construction, as outlined in Table 2-1 above.

The major treatment plants which completed commissioning phases during the period 2004/2005 were Cork City (including Tramore River Valley), Limerick City (including Ballykeeffe and Caherdavin), and Galway City.

The Tramore waste water treatment plant commenced construction in 2005 and construction is due to commence in 2007 for Waterford City, while Cobh and Carrigaline which are included in the Lower Harbour Sewerage Scheme and currently at planning, are due to commence construction in 2008/2009.

A new treatment plant serving Skerries and Balbriggan is due for commissioning in early 2007, while a portion of the Howth discharge (including Baldoyle, Sutton and Portmarnock) was connected to the Ringsend plant *via* the Sutton pumping station in 2005. However, waste water with a population equivalent of almost 25,000 p.e. continued to be discharged untreated at Howth during most of 2005 with 7,000 p.e diverted for treatment in November 2005. Works are in place to divert a further 9,000 p.e. of this discharge for treatment at Ringsend by mid 2007. This effectively leaves a loading of 9,000 p.e. discharging untreated from Howth.

Construction of the Killybegs sewage treatment plant (part of the Donegal Bay Project) is due to commence in early 2008. Other major waste water treatment projects due to commence construction in 2007 are Shangannagh (including Bray), Sligo, Wicklow and New Ross. The construction of the Arklow waste water treatment plant has been delayed and there was no commencement date available at the time of writing this report.

[5] Details of the Water Services Investment Programme for drainage schemes and treatment plants can be found at the Department of Environment Heritage and Local Government Website at www.environ.ie.

2.1.2 Level of Treatment Provided

Information on 478 agglomerations with a population equivalent of 500 persons or greater was reported to the Agency for the 2004/2005 period. Of the 478 agglomerations, 354 received secondary treatment (79 of which also receive nutrient reduction), 74 received primary treatment and 50 either received preliminary treatment or no treatment (see Table 2-3). Comparative figures for 2002/2003 are also provided in parenthesis.

Table 2-3: Summary of Waste Water Treatment Provision for Agglomerations Greater Than or Equal to 500 Population Equivalent for the Year 2004/2005 (2002/2003 in brackets).

	No treatment	Preliminary treatment only	Primary treatment only	Secondary treatment only	Secondary treatment with nutrient reduction	Total
Number of agglomerations	33 (31)	17 (23)	74 (94)	275 (257)	79 (38)	478 (443)
Total population equivalent (p.e.)	598,256 (1,060,887)	312,264 (727,280)	88,624 (136,858)	3,959,294 (3,366,895)	669,018 (510,504)	5,627,456 (5,802,424)

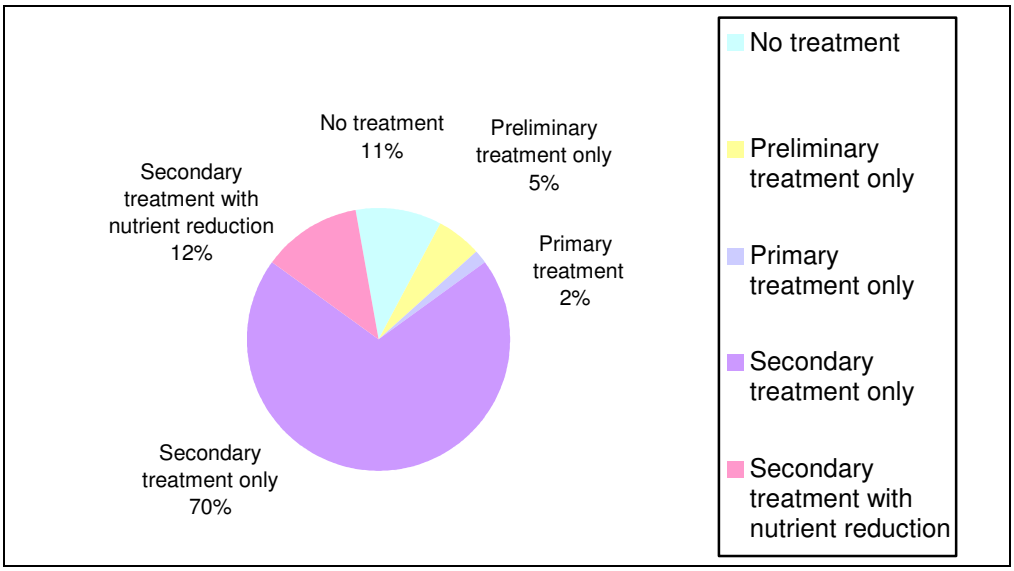
Table 2-3 indicates that in the reporting period 2004 and 2005:

- 11% of waste water arisings did not receive any form of treatment (18% in 2002/2003 and 23% in 2000/2001);
- 5% of waste water arisings received preliminary treatment only (13% in 2002/2003 and 7% in 2000/2001);
- 2% of waste water arisings received primary treatment only (2% in 2002/2003 and 41% in 2000/2001);
- 70% of waste water arisings received secondary treatment only (58% in 2002/2003 and 21% in 2000/2001);
- 12% of waste water arisings received nutrient reduction in addition to secondary treatment (9% in 2002/2003 and 8% in 2000/2001).

These statistics are illustrated in Figure 2-1. The national population equivalent figure has decreased slightly from 5,802,424 for 2002/2003 to 5,627,456 for 2004/2005, which represents a decrease of 3%[6].

[6] The main reason for the decrease can be attributed to improved calculations of loadings to waste water treatment plants and more accurate calculations of agglomeration size based on the measured loadings to new treatment plants.

Figure 2-1: Waste Water Facilities for Agglomerations with a Population Equivalent Greater than 500



The number and size of agglomerations is given in Table 2-4. Four agglomerations (Dublin City (Ringsend Treatment Plant), Cork, Dundalk and Killybegs) exceed population equivalents of 150,000 persons and collectively represent almost 60% of the waste water discharges for 2004/2005. The greatest number of agglomerations reported in 2004/2005 related to the class 500 to 1,000 persons equivalent, with 205 out of a total of 478, representing 2.6% of total population equivalent.

Table 2-4. Number of Agglomerations and Population Equivalents (2005)

Non-Sensitive and Sensitive Areas			
Class of Agglomeration	**Number**	**Total population equivalent (p.e)**	**% of Total population equivalent (p.e)**
500 to 1,000 p.e.	205	145,000	2.6
From 1,001 to 1,999 p.e.	92	134,285	2.4
From 2,000 to 10,000 p.e.	126	564,041	10.0
From 10,001 to 15,000 p.e.	18	235,883	4.2
From 15,001 to 50,000 p.e.	25	618,744	11.0
From 50,001 to 150,000 p.e.	8	641,968	11.4
150,001 p.e. and above.	4	3,287,535	58.4
Total	**478**	**5,627,456**	**100**

Table 2-5 presents an overview of the types of receiving water to which agglomerations discharge their waste water. Almost 91% of waste water arisings discharge into either freshwaters or estuaries and 9% to coastal waters.

Discharges to sensitive areas or the catchment of sensitive areas now account for almost 73% of total discharges. However, it should be noted that the discharge from the Ringsend Treatment Plant to the Liffey Estuary and the new waste water treatment plant serving Cork City accounts for 66% of the total discharge to sensitive areas. The largest discharge to a sensitive area for which a treatment plant has not been provided is from Killybegs (Co. Donegal) with an estimated population equivalent of 400,000 p.e.

Table 2-5. Number of Agglomerations Categorised by Type of Receiving Water

Class of agglomeration	Non-Sensitive				Sensitive Areas	
	Freshwaters and Estuaries		Coastal Waters		Freshwaters and Estuaries	
	No.	P.E.	No.	P.E.	No.	P.E.
From 500 to 1,000 p.e.	130	88,871	15	11,940	60	44,189
From 1,001 to 1,999 p.e.	60	88,304	10	13,139	22	32,842
From 2,000 to 10,000 p.e.	57	246,881	25	115,036	44	202,124
From 10,001 to 15,000 p.e.	6	80,750	2	27,500	10	127,633
From 15,001 to 50,000 p.e.	5	90,500	7	179,933	13	348,311
From 50,001 to 150,000 p.e.	3	263,700	2	138,700	3	239,568
Greater than 150,001 p.e.	1	179,535	0	0	3	3,108,000
Totals	**262**	**1,038,541**	**61**	**486,248**	**155**	**4,102,667**

The number of secondary treatment plants in operation during 2004 and 2005 is presented in Table 2-6 as a function of the receiving water to which they discharge. Three hundred and fifty four secondary treatment plants were reported to be in operation during the reporting period, of which one hundred and thirty six discharged to sensitive areas or to the catchment of sensitive areas.

Table 2-7 provides an overview of the discharges to sensitive areas or the catchment of a sensitive area and the extent to which nutrient reduction facilities have been provided. To date, nutrient reduction facilities have been provided within the catchments for which it is required. It should, however, be noted that Article 4 of the 2001 Regulations requires the application of more stringent effluent quality standards than those specified in the Regulations, where this is required, to ensure that the receiving waters satisfy any other relevant Community Directives. This may mean that many of those agglomerations discharging to sensitive areas with population equivalents of less than 10,000 p.e. could also require nutrient reduction.

Table 2-6: Number of Secondary Waste Water Treatment Plants Categorised by Type of Receiving Water

Class of Agglomeration	Non Sensitive Areas		Sensitive Areas	Total no. of Secondary treatment plants
	Freshwaters and estuaries	Coastal Waters	Freshwaters and estuaries	
	No.	No.	No.	No.
From 500 to 1,000 p.e	95	3	50	148
From 1,001 to 1,999 p.e	48	2	18	68
From 2,000 to 10,000 p.e	44	10	40	94
From 10,001 to 15,000	5	0	10	15
From 15,001 to 50,000	5	2	13	20
From 50,001 to 150,000	2	1	3	6
p.e 150,001 and above	1	0	2	3
Total	**200**	**18**	**136**	**354**

Table 2-7: Discharges to Sensitive Areas (2005)

Class of Agglomeration	Number of discharges to sensitive areas with preliminary or no treatment	Number of Primary (1°) Treatment Plants discharging to sensitive areas	Number of secondary (2°) treatment plants discharging to sensitive areas		Total number of discharges to sensitive areas
			Without nutrient reduction	With nutrient reduction	
From 500 to 1000 p.e	0	10	42	8	60
From 1,001 to 1,999 p.e	0	4	12	6	22
From 2,000 to 10,000 p.e	4	0	26	14	44
From 10,001 to 15,000 p.e	0	0	4	6	10
From 15,001 to 50,000 p.e	0	0	2	11	13
From 50,001 to 150,000 p.e	0	0	1	2	3
p.e 150,001 and above	1	0	2	0	3
Total	**5**	**14**	**89**	**47**	**155**

2.1.3 Monitoring of Effluents from Waste Water Treatment Plants

An overview of the number and type of samples taken during the reporting period is provided in Table 2-8. There has been an increase in the total number of results returned to the EPA for all parameters compared with previous reporting periods. Despite the increase in the number of samples returned to the EPA many local authorities are still not carrying out the minimum sampling frequencies as set out in the Regulations. Again it must be stressed that compliance with the Regulations cannot be achieved if the sampling frequency requirements are not met.

Table 2-8: Number of Analytical Results Reported in 2004/2005

Sample Type	Year	BOD_5	COD	TSS	Total P	Ortho-P
Inflow	2004	3,229	3,821	3,455	1,928	1,928
	2005	3,626	4,314	4,275	2,459	1,802
Outflow	2004	4,106	4,659	4,767	2,294	2,846
	2005	4,750	5,295	5,492	3,338	2,610

Monitoring of the inflow to a plant is important in order to determine the correct population equivalent for an agglomeration and also in the identification of unexpected loads, which may affect the operation of the plant. Outflow monitoring is important to establish compliance with the standards specified in the Regulations. The Regulations are specific about the type of sampling and analytical technique required to establish the compliance of secondary treatment plants. Flow proportional or time-based 24-hour composite samples are required while grab samples are not sufficient to establish compliance.

Of the 4,750 total outflow samples for BOD taken in 2005, over 60% were grab samples. An analysis of the plants which fall within the scope of the Regulations (i.e. discharges to freshwaters and estuaries from agglomerations greater than 2,000 p.e. and discharges to coastal waters from agglomerations greater than 10,000 p.e.) shows that nearly 43% of samples taken were grab samples.

For larger plants with population equivalents of greater than 10,000 there has been a slight increase from 69% to 70% in the amount of composite sampling since the previous reporting period. Of the 44 plants with a population equivalent greater than 10,000 p.e. 16 out of 44 (36%) did not have a composite sampler during the reporting period.

The Regulations also specify the minimum number of samples to be taken each year depending on treatment plant size (see Appendix D). A county-by-county account of the number and compliance of outflow samples from secondary waste water treatment plants is given in Appendix A. Where the number of samples returned for a particular plant is less than that required, the corresponding box in the table is highlighted in purple. An examination of the returns to the Agency indicates that for many plants with a population equivalent greater than 2,000, the required number of samples were not taken during 2005.

2.1.4 Performance of Secondary Waste Water Plants

Appendix A contains details on the performance of secondary waste water treatment plants on a county by county basis for the reporting period with respect to Biochemical oxygen demand (BOD), Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD). The monitoring results presented have been returned to the EPA by each local authority for secondary treatment plants with a population equivalent of 500 or greater. The Regulations allow a limited number of outflow samples from secondary waste water treatment plants to fail (see Appendix B) provided that in the cases of BOD_5, COD and TSS, respectively, the limits 50 mg/l O_2, 250 mg/l O_2 and 87.5 mg/l are not exceeded. This means that if a single sample exceeds these values then the required standard has not been achieved. If column three for each parameter in county tables presented in Appendix A shows a value (shaded green) greater than zero, the plant has not complied with the requirements of the Regulations. In addition to the above, if a local authority fails to take the minimum number of samples specified in the Regulations then the treated discharge has failed to meet the requirements and as such is non-compliant. In this case the relevant parameter for each plant is marked in purple.

Secondary treatment plants with a population equivalent greater than 15,000

20 out of 30 plants in this category met the required standards (compliance rate of 67% compared with 52% for 2002/2003). Reasons for non-compliance at the plants that failed to meet the required standards are provided in Table 2-9.

Table 2-9: Non–Compliant Secondary Treatment plants >15,000 p.e. (2005)

Local Authority	Treatment Plant	BOD	COD	TSS	Insufficient Sampling
	Reason for Non Compliance				
Cavan	Cavan	x	-	-	-
Donegal	Letterkenny	x	x	x	x
Dublin City	Ringsend	x	x	x	-
Kilkenny	Kilkenny (Purcellsinch)	x	x	x	x
Louth	Drogheda	-	x	-	-
Louth	Dundalk	x	-	-	x
Mayo	Ballina	x	x	x	x
Mayo	Castlebar	x	x	x	x
Offaly	Tullamore	-	-	x	-
Wicklow	Greystones	x	-	-	-

At five of these plants, an insufficient number of samples were taken during the reporting period. The Letterkenny and Ballina plants continue to have consistent breaches of the limits for all three parameters and 4% of the Ringsend samples failed the upper suspended solids limit for 2004 with almost 10% failing in 2005.

Secondary treatment plants with a population equivalent greater than 10,000 with nutrient reduction

Of a total of 21 plants in this category, 18 met the required standards (compliance rate of 86% compared with 57% for 2002/2003). Reasons for non-compliance with the required standards are provided in Table 2-10. Compliance with the total phosphorus standard at these plants is presented later in this section.

Table 2-10: Non –Compliant Treatment Plants (2005) >10,000 p.e. with Nutrient Reduction

Local Authority	Treatment Plant	Biochemical Oxygen Demand	Chemical Oxygen Demand	Total Suspended Solids	Insufficient Sampling
	Reason for Non Compliance				
Cavan	Cavan	x	-	-	-
Mayo	Castlebar	x	x	x	x
Offaly	Tullamore	-	-	x	-

In addition to the concentration limits set out in the Regulations[7] for BOD, COD and TSS, limits for total phosphorus and total nitrogen also apply for discharges from waste water treatment plants to designated sensitive areas. One or both parameters may be applied depending on the local situation.

Table 2-11 presents the results of phosphorus monitoring at plants greater than 10,000 p.e. including those which discharge to designated sensitive areas[8]. Plants discharging to sensitive areas, which should be in compliance since 31st December 1998 are highlighted in blue. All plants, with the exception of the waste water treatment plant at Navan, complied with the relevant standards during the reporting period.

[7] Urban Waste Water Treatment Regulations, 2001 (Second Schedule Part 1).

[8] Urban Waste Water Regulations, 2001 (Third Schedule Part 1 and Part 2).

Table 2-11. Phosphorus Monitoring at plants greater than 10,000 p.e[9]

Local Authority	Treatment Plant	No. of samples Total P	Annual mean Total P mg/l P	No. of samples Ortho-p mg/l P	Annual mean Ortho-p mg/l P
Carlow	Mortarstown	12	1.4	12	2.46
Cavan	Cavan	13	0.7	9	0.25
Clare	Ennis North	8	1.8	-	-
Cork County North	Fermoy	12	1.5	-	-
Cork County South	Ballincollig New	14	6.5	-	-
Cork County South	Midleton	11	0.9	-	-
Donegal	Letterkenny	11	2.8	10	1.15
Dublin City Council	Ringsend	152	3.9	178	2.79
Fingal	Malahide	43	4.9	45	4.14
Fingal	Sword	45	2.3	43	1.38
Galway City Council	Galway City	22	7.3	-	-
Galway	Tuam	-	-	11	1.62
Kerry	Killarney	51	0.3	-	-
Kildare	Athy	14	1.2	14	0.81
Kildare	Leixlip	44	0.9	-	-
Kildare	Osberstown	126	1.2	126	0.71
Kilkenny	Kilkenny (Purcellsinch)	29	1.9	6	1.27
Laois	Portlaoise	245	3.1	256	1.57
Limerick City Council	Limerick City	23	2.7	-	-
Longford	Longford	12	0.7	-	-
Louth	Drogheda	10	1.8	1	2.82
Louth	Dundalk	10	2.7	-	-
Mayo	Ballina	12	2.4	11	1.32
Mayo	Castlebar	12	1.5	11	0.09
Mayo	Westport	13	1.9	12	1.67
Meath	Navan	11	2.3	-	-
Meath	Trim	12	0.8	-	-
Monaghan	Carrickmacross	12	0.4	12	1.37
Monaghan	Castleblayney	12	0.7	12	2.33
Monaghan	Monaghan	6	0.7	11	0.49
Offaly	Tullamore	11	0.6	10	0.43
Tipperary N.R. Co. Co.	Nenagh	12	0.4	12	0.24
Tipperary N.R. Co. Co.	Roscrea	12	1.0	12	0.57
Tipperary N.R. Co. Co.	Thurles	12	2.3	11	1.49
Tipperary S.R. Co. Co.	Clonmel	23	0.5	-	-
Westmeath	Athlone	4	1.1	10	0.52
Westmeath	Mullingar	12	0.7	24	0.32

[9] *Plants discharging to sensitive areas set out in the 2001 Regulations, Part 1 of the Third Schedule, are highlighted.*

Table 2-11. (continued) Phosphorus Monitoring at plants greater than 10,000 p.e

Local Authority	Treatment Plant	No. of samples Total P	Annual mean Total P mg/l P	No. of samples Ortho-p mg/l P	Annual mean Ortho-p mg/l P
Westmeath	Mullingar	12	0.7	24	0.32
Wexford	Courtown/Riverchapel	11	**3.9**	1	0.89
Wexford	Enniscorthy	12	1.6	5	0.55
Wicklow	Greystones	12	1.5	-	-

Treatment plants between 2,000 p.e. and 15,000 p.e.

48 out of 125 plants in this category met the required standards (compliance rate of 38%, compared with 29% for 2002/2003).

Secondary treatment plants with a population equivalent of 500 p.e. and less than 2,000 p.e.

38 out of 199 plants in this category complied with the limits set out in the Regulations (compliance rate of 19%, compared with 22% for 2002/2003). Some of this non-compliance can be attributed to insufficient/non-existent sampling. The limits set out in the Regulations for BOD, COD and TSS are used for guidance only to determine the level of performance for each plant in this class. Although there is no requirement for compliance with the absolute limits in the Regulations for these smaller plants, there is however a requirement for the provision of appropriate treatment in order to satisfy the quality standards for the receiving water.

2.1.5 Sewage Sludge

During the reporting period a total of 61,923 tonnes (2004) and 59,827 tonnes (2005) respectively of dry solids were reported to have been produced nationally by treatment plants with population equivalent greater than 500 persons. The use of sewage sludge in agriculture has increased since the last report and now accounts for 76.1% of the total sludge arisings compared with 63% in 2002/2003 and only 23% in 2002/2003. The destination routes for sewage sludge are set out in Table 2-12 below.

Table 2-12: Sewage Sludge Reuse and Disposal Routes 2005 (2003 in Brackets)

	Agriculture	Landfill	Sea Disposal	[10]Other or Unspecified	Total
Quantity (tds)	45,543 (26,743)	10,292 (14,909)	0 (0)	3,992 (646)	59,827 (42,298)
% of Total	76.1 (63)	17.2 (35)	0 (0)	6.7 (2)	100 (100)

The Use of Sewage Sludge in Agriculture Regulations 1998, requires an analysis of sewage sludge at least once every six months. The frequency of analysis may then

[10] The category classed as "other or unspecified " includes 2,000 tonnes of sewage sludge used in forestry and sludge, which was further composted.

be reduced to yearly where the results of analysis do not vary significantly over a year. Where it is evident that copper and zinc are present only in small or negligible quantities in the waste water treated by the sewage treatment plant, the frequency of analyses for those parameters may be reduced to once in three years. The Regulations (Use of Sewage Sludge in Agriculture Regulations, 1998) specify that sludge shall not be used in agriculture where the concentration of one or more of the heavy metals exceeds the values specified. This was amended in 2001 to limit the actual amount of heavy metals, which may be added annually to agricultural land based on a ten-year average. In order to calculate this, the amount and frequency of spreading to the land, including the individual metal concentrations of each consignment of sludge needs to be recorded by the local authority/end user. The limits set out in the 1998 regulations for heavy metals in sludges used in agriculture are used as a guide and are presented in Table 2-13 below. Where exceedances of the guideline limits occur, the result is highlighted.

Table 2-13: Maximum Concentration of Heavy Metals in Sludges Reused in Agriculture (2005)

Metal		**Cd**	**Cu**	**Ni**	**Pb**	**Zn**	**Hg**
***Limit mg/kg DM**		**20**	**1000**	**300**	**750**	**2500**	**16**
Plant Name	**No. of tests**	Maximum value reported (mg/kg DM)					
Athenry	11	0.9	440	17	31	570	4.8
Athlone	5	0.0	55	4	11	162	0.0
Athy	129	1.0	445	26	65	617	6.7
Ballaghaderreen	24	1.2	278	119	52	536	12.2
Ballina	9	0.2	550	16	63	660	0.2
Ballinasloe	11	0.9	272	29	35	473	5.9
Ballinlough	24	<5	334	<53	<54	1002	<54
Ballinrobe	11	0.4	220	19	32	340	0.1
Ballybunion	12	2.0	318	22	61	657	0.5
Ballyhaunis	10	0.6	410	15	42	510	3.2
Ballyheigue	12	2.0	306	20	50	630	0.5
Ballymahon	10	0.4	416	29	37	714	1.0
Boyle	24	<16	**1629**	52	85	**10815**	0.5
Buncrana	9	1.0	85	15	25	206	1.0
Cahersiveen	12	3.0	365	19	95	506	0.1
Carndonagh	9	4.0	406	20	32	415	1.0
Cashel	70	5.7	306	33	115	**2920**	1.9
Castledermot	102	1.1	339	24	63	780	6.9
Castleisland	12	2.0	431	**567**	81	360	<20
Castlerea	24	0.9	973	8	33	441	0.6
Cavan	50	0.7	264	48	48	446	0.5
Charleville	9	1.0	399	29	60	568	5.0
Claremorris	10	0.8	390	16	36	460	2.5
Clonmel	90	5.0	700	50	140	1644	1.9
Cork City	141	2.0	330	50	120	900	2.0
Edgeworthstown	10	0.4	159	138	13	323	1.0
Elphin	24	5	652	52	187	597	0.5
Fermoy	9	1.6	624	23	56	635	2.5
Frenchpark	24	1.6	357	29	125	739	0.5
Gort	11	0.8	652	28	32	771	1.5

Table 2.13: Maximum Concentration of Heavy Metals in Sludges Reused in Agriculture (2005)							
		Cd	**Cu**	**Ni**	**Pb**	**Zn**	**Hg**
***Limit mg/kg DM**		20	1000	300	750	2500	16
Plant Name	**No. of tests**						
Granard	10	0.5	220	29	45	951	1.0
Kanturk	9	1.1	318	30	49	860	10.0
Killarney	12	1.0	16	1	4	29	0.0
Killorglin	11	1.9	735	12	44	425	1.0
Kinnegad	5	0.0	71	4	9	192	0.0
Knock	11	17.0	**3600**	250	370	2200	0.3
Leixlip	91	1.1	441	230	13	505	**34.0**
Letterkenny	9	1.0	289	14	24	324	1.0
Limerick City	137	1.0	364	81	67	569	3.5
Listowel	36	3.0	145	68	32	538	1.0
Longford	10	0.2	42	11	1	20	1.0
Loughrea	11	1.1	518	23	44	605	1.9
Mallow	9	1.2	296	31	59	880	3.0
Mitchelstown	9	1.7	410	37	208	1066	11.2
Moate	5	0.0	125	4	7	98	0.0
Monksland	24	3.0	803	27	23	372	2.8
Moycullen	11	0.9	754	23	20	468	1.3
Mullingar	5	0.0	102	5	13	268	0.0
Osberstown	268	2.0	183	80	46	408	0.6
Portumna	11	1.6	216	36	68	828	2.5
Ringsend	473	1.8	568	63	118	833	4.3
Roscommon	24	1.0	**1386**	**525**	60	483	<43
Roscrea	11	0.4	254	1	47	420	0.2
Strokestown	24	<8	**8893**	525	60	483	<0.6
Swinford	9	40.0	200	37	26	320	0.3
Tralee	12	2.3	528	29	72	549	1.0
Tuam	11	1.8	715	27	79	749	3.1
Tullow	91	1.1	441	230	13	505	**34.0**
Westport	11	0.9	220	17	35	310	1.6
Wexford town	10	0.7	469	22	22	393	2.2

**Results in bold indicate an exceedance of the limit value.*

The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 also sets out the conditions applying to soil sampling and analysis including the parameters to be analysed and the maximum value for concentrations of heavy metals in soil. The results of soil analysis reported to the EPA by local authorities are presented in Table 2-14. Due to the large amount of data submitted for metal concentrations in soil where the sludge from the Ringsend sewage treatment plant is used, a separate analysis is presented in Table 2-15.

Table 2-14: Maximum Concentration of Heavy Metals in Soils where Sludge was Reused in Agriculture (2005)

		Cd	Cu	Ni	Pb	Zn	Hg
***Limit mg/kg DM**		1	50	30	50	150	1
Plant Name	**No. of tests**	**Maximum value recorded (mg/kg DM)***					
Ballina	7	0.7	12	22	27	96	0.3
Ballinrobe	7	0.7	10	19	15	56	0.3
Ballybunion	7	0.1	4	6	4	9	0.1
Ballyhaunis	7	0.3	7	8	14	24	0.3
Ballyheigue	7	0.1	9	2	5	8	0.1
Castlebar	7	0.3	7	8	14	24	0.3
Castleisland	12	0.1	7	7	5	17	0.1
Claremorris	7	0.3	7	8	14	24	0.3
Dingle	14	0.2	12	8	8	25	0.1
Kenmare	7	0.1	11	2	11	16	0.1
Killarney	14	0.2	6	6	5	19	0.1
Knock	7	0.3	7	8	14	24	0.3
Limerick City	484	1.0	21	**31**	**65**	84	1.0
Listowel	7	0.2	12	2	12	12	0.1
Loughrea	21	1.0	**58**	30	19	56	0.3
Portlaoise	6	0.7	9	15	0	51	0.3
Portumna	7	0.7	18	23	17	48	0.3
Swinford	7	0.7	12	22	27	96	0.3
Tralee	12	0.1	5	1	11	6	0.1
Westport	14	0.7	12	22	27	96	0.3
Wexford	84	**1.5**	20	**33**	28	91	0.5

**Results in bold indicate an exceedance of the limit value*

The monitoring results indicate that the heavy metal concentrations in the soils tested for sludge application from the treatment plants (Ringsend is dealt with separately) listed in Table 2-14 were within the specified limits with a small number of exceptions highlighted above. Where the pH of the soil is consistently higher than 7, the values may be exceeded by not more than 50%, provided that there is no resulting hazard to human health, the environment, or in particular, ground water. The monitoring results for soils used to spread the sludge from the Ringsend (Dublin City Council) treatment plant are presented in Table 2-15 and shows that only a small number of exceedances of the absolute metal concentrations occurred during the reporting period 2004–2005 compared to the results reported for 2002-2003. This is mainly due to a revision of the sludge management and reporting procedures adopted by

Dublin City Council following an audit carried out by the EPA. Dublin City Council also report that in almost all cases where an exceedance is reported, the pH of the soil is consistently higher than 7, which allows for the values to exceed the set values by 50%.

Table 2-15: Maximum Concentration of Heavy Metals in Soils where Ringsend Sludge was Reused in Agriculture (2004 and 2005)

Metal	Limit mg/kg DM	2004 Results			2005 Results		
		Max Value (mg/kg DM)	No. of Exceedances	No. of tests	Max Value (mg/kg DM)	No. of Exceedances	No. of tests
Cd	1	1.5*	10	605	1.4*	16	879
Cu	50	44	0	601	54*	1	878
Ni	30	38*	6	605	38*	13	876
Pb	50	73*	2	589	128**	7	876
Zn	150	133	0	603	135	0	878
Hg	1	0.9	0	601	1.9	1	873

* Where the pH of the soil is consistently higher than 7, the values may be exceeded by not more than 50%, provided that there is no resulting hazard to human health, the environment, or in particular, ground water.

** This exceedance of 128 mg/kg/DM was the only reported non-compliant result recorded out of 25 reported results for this particular farm. The other 24 samples were in compliance with the standard.

3 Enforcement

3.1 Audits

The Office of Environmental Enforcement carried out 35 Audits of Local Authorities during the reporting period 2004-2005 in addition to 13 in 2006 to determine the level of compliance with the Urban Waste Water Treatment Regulations, Odour and Noise Regulations and The Waste Management (Use of Sewage Sludge in Agriculture) Regulations. Table 3-1 lists those local authorities audited from 2001-2006. As part of the audit process 75 waste water treatment plants were also inspected between 2004 and 2006. The criteria used in the audits were:

- Treatment Recommendations contained in the Environmental Protection Agency Act, 1992 [Urban Waste Water] Regulations, 1994: A handbook on the Implementation for Local authorities;
- Recommendations contained in previous Urban Waste Water Treatment reports;
- The Water Pollution Acts 1997-1990;
- The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 and The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, Amended Regulations, 2001;
- European Communities (Odour and Noise Regulations), 2005; and,
- Recommendations from previous EPA Urban Waste Water Treatment audits.

In addition to the above, the audits are used to verify the waste water treatment plant monitoring information submitted by local authorities for the compilation of this report.

The audit consists of interviews with management and technical staff of the local authority, a detailed review of relevant documentation and a site inspection of a selected plant. The site inspection is used to assess the operation and management of a selected plant and to assess compliance with the Urban Waste Water Regulations, 2001 and The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998, as amended. At the end of the audit the findings of the Agency auditors are presented and discussed with senior management of the local authority. A report is issued to each local authority, which sets out the findings of the audit and the recommended actions to be taken by the authority. These actions form part of the criteria to be used in future audits.

As can be seen from Table 3-1 all local authorities are audited on a regular basis, normally either every two or three years.

Table 3-1: Local Authorities Audited by the EPA from 2001-2006

Sanitary Authority	2001	2002	2003	2004	2005	2006
Carlow County Council		√		√		
Cavan County Council			√		√	
Clare County Council			√		√	
Cork City Council				√		√
Cork County Council				√		√
Donegal County Council		√		√		√
Dublin City Council				√		
Dun Laoghaire Rathdown County Council		√		√		
Fingal County Council			√			
Galway City Council				√		
Galway County Council		√		√		√
Kerry County Council				√		√
Kildare County Council			√		√	
Kilkenny County Council	√		√	√		√
Laois County Council				√		√
Leitrim County Council		√		√		√
Limerick City Council		√			√	
Limerick County Council		√		√		
Longford County Council			√	√		√
Louth County Council		√	√		√	
Mayo County Council		√		√	√	
Meath County Council			√	√		√
Monaghan County Council		√		√		
North Tippearary County Council			√		√	
Offaly County Council			√	√		
Roscommon County Council			√	√		
Sligo County Council	√			√		√
South Dublin County Council				√		
South Tippearary County Council		√			√	
Waterford City Council	√		√		√	
Waterford County Council	√		√	√		
Westmeath County Council	√			√		√
Wexford County Council	√			√	√	√
Wicklow County Council	√		√		√	
Total	7	11	14	24	11	13

The main aspects covered in the audits carried out by the Agency during the reporting period of 2004 to 2005 were:

- The overall management and control system for the treatment of urban waste water in the local authority area;
- The procedures for dealing with exceedances of the urban waste water standards and the implementation of corrective actions for receiving waters impacted by waste water effluent;

- The management of sewage sludge and compliance with the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 & 2001;
- Licensing of discharges to sewers under Section 16 and surface waters under Section 4 of the Local Government (Water Pollution) Acts, and,
- The management of a selected waste water treatment plant which is inspected on the day of the audit including associated environmental issues.

3.1.1 Operational Issues Identified

EPA audits have highlighted the fact that a proportion of waste water treatment plants in each county are under increasing pressure from development that has taken place through out the country over the last number of years. Operation and maintenance of some overloaded plants in the country has proved difficult for some local authorities. Recurring problems identified at the waste water treatment plants visited during audits, which are in need of corrective action, include:

- Inadequate collection systems for waste water (e.g. combined sewer overflows);
- Inadequate screening of influent waste water and storm water overflows;
- Insufficient treatment capacity;
- Poor assimilative capacity of discharged effluent in some receiving waters; and,
- Poor sludge management on site and incomplete sludge records.

3.1.2 Management and Control

The EPA manual on Primary, Secondary and Tertiary Treatment (1997) advises local authorities to use a systems approach to manage waste water treatment plants. The audits carried out in 2004 to 2005 indicate that there has been an improvement in the development of documented management and control systems in local authorities compared to the previous period. Some local authorities had elements of a management and control system in place, however these were not documented, other local authorities had systems in the draft stages of completion. Some local authorities have attributed this to the prioritisation of resources to develop a documented management and control system for drinking water. Once this is established focus will be given towards a documented urban waste water system. Some local authorities are managed on an area by area basis and as such do not have an overall county management system.

A number of local of authorities such as Cavan County Council and Limerick City Council have comprehensive documented systems in place for the management of treatment plants in their functional area, incorporating:

- Operational Organisational Chart;
- Operating Procedures (SOPs, lab procedures, reporting procedures, maintenance & corrective action procedures); and,
- Treatment Plant Performance.

Although it is not a specific statutory requirement, the EPA recommends that all local authorities as a matter of best practice put in place a documented management and control system for the management and treatment of waste water.

3.1.3 Management of non-conformance

A limited number of local authorities audited in the period 2004-2005 had developed a documented procedure for dealing with exceedances of the standards listed in the Second Schedule of the Urban Waste water Regulations, 2001. The Agency has recommended that close communication and a close out procedure exist between environmental monitoring and the operation and control of the treatment plant to ensure that corrective actions can be taken where exceedances occur.

Local Authorities are audited on corrective actions procedures for waste water treatment plants and collection systems that are negatively impacting on receiving waters. The information is compiled from local authority implementation reports submitted to the EPA under the Phosphorus Regulations. The Water Quality in Ireland Report for the period 2001-2003 identified municipal discharges suspected of causing serious pollution at 22 sites, moderate pollution at 174 sites and slight pollution at 158 sites. The Agency is prioritising resources to highlight waste water treatment plants that are causing this deterioration of water quality, through the audit process and follow up enforcement action.

3.1.4 Management of Sewage Sludge

Of the 35 local authorities audited in the period 2004-2005, few local authorities had a complete sludge register in place that satisfied all the regulatory requirements[11]. It was found that many local authorities had elements of the Register in place, however the management of sludge and soil analysis data was poor in some cases, which lead to difficulties in the assessment of the compliance with the regulations. The Agency is concerned that some Local authorities do not adequately supervise the supply and use of sludge in their functional area as is required under Article 10 of The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998. The Agency recommends that local authorities audit the chain of custody of sludge consignments under their supervision and ensure that Sludge Registers are up to date and compliant with the requirements of the Regulations.

3.1.5 Control of Trade Discharges to Sewer

Under the Local Government Water Pollution Acts, local authorities are responsible for licensing trade effluent discharges to sewers and waters. The EPA audits have found that some local authority Registers are incomplete and in need of updating. The Agency notes that a growing number of food preparation outlets are not currently within the local authority licensing regime and may be a significant contributor to grease and fat loadings into the sewer network and municipal treatment plants. The EPA recommends that local authorities review licensing of trade effluents in accordance with Department Circular L08/03 on the licensing of trade effluent

[11] The Sludge Register should contain; quantities of sludge produced and supplied for use in agriculture in their functional area; composition of heavy metals in sludge; type of treatment of sludge; and, name and address of each recipient of the sludge and the location of each site where it is to be used.

discharges to sewer. The EPA recommends that local authorities review the Registers and take appropriate action where it is found that the licenses are not being complied with.

3.2 Enforcement Action

The EPA has issued a number of statutory notices to local authorities during the reporting period. These notices are issued under Section 63 of the EPA Acts 1992 and 2003 and are used to assess the statutory environmental protection functions of local authorities and may be issued following audits carried out by the Agency or for the investigation of environmental complaints. In addition, the Agency is investigating those rivers, which have been assessed by EPA Biologists as being seriously polluted. In addition the Section 63 process has been used to investigate bathing waters that have not met the EU mandatory bathing waters standards where municipal sources are the suspected cause of the failure. A summary of enforcement actions taken by the Agency since 2004 in relation to waste water treatment plants is listed in the tables below. These are set out according to common themes as follows;

- Table 3-2 summarises investigations in relation to odour nuisances from urban waste water treatment plants. As previously mentioned the Agency is now responsible for investigating odour related complaints from waste water treatment plants where the problem persists or the local authority has failed to meet it's responsibilities under the Odour and Noise Regulations;
- Table 3-3 summarises investigations in relation to alleged untreated discharges from urban waste water treatment plants operated by local authorities;
- Table 3-4 summarises statutory notices issued to four local authorities for bathing waters which did not meet EU mandatory standards in 2005, where a municipal source was the suspected cause of the failure;
- Table 3-5 summarises the investigations into river stations reported as seriously polluted during the reporting period. The current biological status these sites are also presented later in the report; and,
- Table 3-6 summarises Section 63 notices issued to local authorities in 2006 that failed to return urban waste water data to the Agency by the required date (28$^{th.}$February 2006).

Table 3-2: Section 63 Notices Issued for Odour Related Issues (2004-2005).

Local authority	Name of Treatment Plant	Reason for Statutory Notice	Action Taken/To Be Taken by Local authority
Clare County Council	Athlunkard WWTP	Odour from WWTP	Clare County Council took enforcement action against a company discharging to the plant, which was suspected as the main source of the problem.
Cork County Council	Little Island WWTP	Odour from WWTP	The OEE received odour complaints during the commissioning phases of this new plant. No further complaints received since plant became operational.
Dublin City Council	Ringsend WWTP	Odour from WWTP	Dublin City Council is actively addressing this issue and has a detailed monitoring programme in place. Plans to control odour emissions from the Ringsend waste water treatment plant are ongoing.
Donegal County Council	Ballybofey/Stranorlar WWTP	Odour from WWTP	Donegal County Council has reviewed the inputs to the plant, which were suspected as causing plant upsets and subsequent odour problems and have taken corrective actions.
Donegal County Council	Buncrana WWTP	Odour from WWTP	Donegal County Council has fitted covers over the sludge press including air extraction to an odour control unit.
Galway County Council	Athenry WWTP	Odour from WWTP	Galway County Council plan to review discharge licences to reduce the loading to the plant and upgrade works are expected to commence before the end of 2006.
Kilkenny County Council	Callan WWTP	Odour from WWTP	Plant has since been upgraded – No further complaints received by the OEE.
Leitrim County Council	Dromod STP	Odour from WWTP	Leitrim County Council has advised that this plant was to be upgraded in 2006. The OEE has received no further complaints in relation to this plant.
Meath County Council	Stamullen WWTP	Odour from WWTP	Meath County Council has taken measures to address this problem and outlined the progress at an audit carried out by the OEE in 2006.
North Tipperary County Council	Roscrea WWTP	Sewage type smell in complainant's house.	North Tipperary County Council have investigated and resolved this complaint.

Table 3-3: Section 63 Notices Issued Relating to Discharges from Waste Water Treatment Plants

Local authority	Name of Treatment Plant	Reason for Statutory Notice	Action Taken/To Be Taken by Local authority
Clare County Council	Newmarket on Fergus WWTP	WWTP discharging to Lough Gash-hypertrophic as a result.	Plans to increase the capacity of the Treatment plant to 5000 p.e including provision of storm tank storage and P removal.
Cavan County Council	Cavan WWTP	Sewage discharge in Cavan Town.	Upgrade of sewerage system for Cavan included in Water Services Investment Programme for 2005- 2007.
Donegal County Council	Castlefin WWTP	Pump failure at the Castlefin WWTP and direct discharge of sewage to River Finn.	Pumps replaced by Donegal County Council.
Galway County Council	Loughrea WWTP	Foul odours from the effluent outfall and effluent quality issues.	Sewerage scheme to be included in the Water Services Investment Programme.
Kerry County Council	Fieries Village WWTP	Odour management in relation to the Fieries village septic tank	Kerry Council intend to upgrade this plant which is included in the water services investment programme 2005-2007.
Kildare County Council	Ballymore Eustace WWTP	Pollution of River Liffey.	Plant upgrade works are included in the Water Services Investment Programme for 2005- 2007
Laois County Council	Rathdowney	Serious pollution of Erkina River	Laois County Council plan to install a packaged plant to give an additional treatment capacity of a population equivalent of 500 p.e.
Meath County Council	Kells WWTP	Activated sludge discharge to Blackwater river.	Meath County Council is closely monitoring this plant and plans to carry out remedial works. The EPA inspected this plant in 2006.
Monaghan County Council	Clones WWTP	Pollution from sewage treatment plant.	Plant upgrade to be included in the Water Services Investment program 2005-2007.
Offaly County Council	Clara sewage treatment	Alleged discharge to the river Brosna.	Upgrade works carried out to the Clara treatment plant. No further complaints received.
Offaly County Council	Crinckle WWTP Birr	Report requested in relation to an alleged discharge to the river in the vicinity of the plant.	Offaly County Council investigated this incident and reported that the plant was not the source of the discharge. No further incidents reported to the EPA.
South Tipperary County Council	Boherlahan, Cashel	Complaint about untreated sewage discharging to a drain and odour nuisance.	Tipperary SR County Council have investigated this complaint including the operation of the plant. The council has also carried out numerous odour surveys.
Westmeath County Council	Athlone WWTP	Discharges to Shannon.	Athlone main drainage is included in the Water Services Investment Programme for 2005- 2007. Plans to improve sludge management at the plant.

Table 3-4: Section 63 Notices Issued for failed Bathing Water Standards for 2005

Local authority	Name of Bathing Water Area	Reason for Statutory Notice	Action Taken/To Be Taken by Local authority
Dublin City Council	Merrion Strand	Failed EU Mandatory Standard for faecal and total coliforms.	Dublin City Council and Dun Laoghaire Rathdown County Council are investigating mis-connections and storm water overflows in each of their functional areas.
Fingal County Council	Sutton Burrow Beach	Failed EU Mandatory Standard for faecal coliforms and surface active substances.	Fingal County Council proposes to upgrade the Mayne Bridge Pumping Station including connection of sewage discharging off Howth Head to Ringsend by 2007 as part of the Dublin Bay Project.
Galway County Council	Clifden Beach	Failed EU Mandatory Standard for faecal coliforms.	The EPA issued a Direction to Galway County Council under Section 63(6) of the EPA Acts requiring certain actions to be carried out. Construction of a new plant is proposed for late 2007.
	Na Forbacha	Failed EU Mandatory Standard for faecal coliforms.	Galway County Council plan to investigate single house treatment systems and licensed discharges as possible sources of contamination.
Waterford County Council	Ardmore Beach	Failed EU Mandatory Standard for faecal coliforms.	Waterford County Council was recommended by the EPA to carry out specific actions following a site inspection in September 2006. A new treatment plant for Ardmore is included in The Water Services Investment Programme 2005 –2007 as part of a grouped towns and villages sewerage scheme.

Table 3-5: Section 63 Notices Issued in 2005 as a Result of EPA Biological Reports regarding Serious Pollution of Rivers from WWTP's

Local authority	Name of Treatment Plant	Reason for Statutory Notice	Action Taken/To Be Taken by Local authority
Cavan County Council	Belturbet WWTP	Serious pollution of River Erne	A plant upgrade is now complete and the source of pollution eliminated.
Clare County Council	Scarriff WWTP	Serious pollution of Graney River	This station is no longer seriously polluted.
Cork County Council	Fermoy WWTP	Serious pollution of River Blackwater and Bride River	There is a new waste water treatment plant planned for Crookstown, which is expected to be operational 2006/2007.
Donegal County Council	Moville and Greencastle	Serious pollution of Bredagh River Serious pollution Greencastle River	An EIS currently being prepared for the Moville and Greencastle scheme which is due to start construction in 2007.
	Milford WWTP	Serious pollution Maggys Burn	Milford WWTP is included in The Water Services Investment Programme 2005-2007.
	Bunnagee (Letterkenny)	Serious pollution Corravaddy Burn	Donegal County Council has advised the DoELHG to include Bunagee in future Water Services Investment Programmes.
Longford County Council	Granard WWTP	Serious pollution of Rhine river	The waste water treatment plant in Granard has been upgraded to secondary treatment with P removal, which has improved water quality.
Mayo County Council	Balla WWTP	Serious pollution of Loughnaminoo Stream	The Balla waste water treatment plant has been upgraded leading to an improvement in the river water quality.
Sligo County Council	Tubbercurry WWTP	Serious pollution of Tubbercurry River	A proposed Direction was issued to Sligo County Council following an EPA audit. A preliminary report for upgrade works has been approved.
Waterford County Council	Clonea WWTP	Serious pollution of Clodiagh River	Waterford County Council are to put in place measures to deal with discharges of effluent at Clonea bridge.
Westmeath County Council	Mullingar WWTP and Combined Storm Overflows	Serious pollution of River Brosna	An upgrade of the sewer network is proposed to start in 2007. The EPA carried out an inspection of this plant in July 2006.
Wexford County Council	Courtown WWTP	Serious pollution of Aughboy River	Sewage treatment has been provided at Riverchapel which has lead to improved water quality of the river.

Table 3-6: Section 63 Notices Issued to Local Authorities Requesting Urban Waste Water Data

Local Authority	Date Section Notice Issued [12]	Date Information Returned to the EPA
Fingal County Council	10/04/06	28/04/06
Kerry County Council	10/04/06	13/06/06
Kilkenny County Council	10/04/06	2/05/06
Limerick County Council	10/04/06	15/05/06
Meath County Council	10/04/06	3/05/06

[12] The Environmental Protection Agency initially requested all local authorities to return urban waste water data by 28th February 2005. Section 63 notices were issued to those local authorities in March 2005, who had failed to comply with this request.

3.3 Impact of Discharges on rivers

Article 5 of the Urban Waste Water Regulations, 2001 requires that more stringent requirements than those specified in Regulations shall apply where the receiving waters do not satisfy other relevant community directives. The EPA Water Quality Interim Reports 2001-2003 listed nineteen locations as seriously polluted, with sewage discharges identified as the suspected source. Biological monitoring carried out by the EPA in subsequent years has found improvements in the biological quality at eleven of these locations listed in Table 3-7. This is a welcomed improvement and demonstrates that where the suspected cause has been reduced or removed, an improvement can be achieved within a few seasons.

Table 3-7: Water Quality Improvements Since the Period 2001-2003

River Name	Location	County	Year
Graney (Shannon)	400 m d/s Scarriff Br.	Clare	2006
Blackwater (Munster)	Fermoy Br (LHS)	Cork	2006
Bride (Lee)	Br at Crookstown RHS	Cork	2005
St Johnston	Second Br u/s Foyle River	Donegal	2004
Figile	Br S of Ticknevin Br.	Kildare	2006
Slate	Quigley's Br.	Kildare	2006
Nore	Thomastown Br (LHS)	Kilkenny	2004
Loobagh	North Br, d/s Kilmallock	Limerick	2006
Rhine	Br N of Cartron	Longford	2005
Loughnaminoo St	Br 600 m d/s Stat 0100	Mayo	2005
Aughboy (WX)	Br NE of Middletown	Wexford	2005

The above improvements are mainly due to the upgrade or provision of new waste water treatment plants.

Biological monitoring carried out since 2003 has identified a further two new locations which are reported as seriously polluted as a result of municipal waste water. In addition, the status of eight of the previously reported seriously polluted river stations remains unchanged. These are presented in Table 3-8.

Table 3-8: Seriously Polluted Rivers Impacted by Municipal Waste Water

County	River Name	Location	Year
Cavan	Erne	Kilconny Belturbet (LHS)	2004
Sligo	Tubbercurry	Br. 1km W. of Tubbercurry	2004
Donegal	Maggy's Burn	Just u/s Lough Fern	2004
Donegal	Bredagh	Moville Bridge	2004
Kildare	Tully St	Kilberrin Br.	2006
Kildare	Tully St	Soomeragh Br.	2006
Kilkenny	Glory	0.1 km d/s Br N of Kilmaganny	2004
Limerick	Ahavarraga St	Br 0.5 km d/s Priests Br.	2005
Offaly	Tullamore	Br SW of Ballycowan Br.	2005
Waterford	Clodiagh	Clonea Br.	2005

The relevant local authorities should further investigate the causes of pollution in these stretches of river and, should urban waste water discharges be a contributing factor, take the necessary corrective action in relation to the discharge. Corrective actions, which should immediately be initiated, must include a review of the plant operation and performance. Where necessary, funding should be made available for modification or upgrade works to bring the particular plant into compliance with a view to improving the receiving water quality. In addition, all other identifiable sources of pollution contributing to the poor quality status of the water body should be dealt with.

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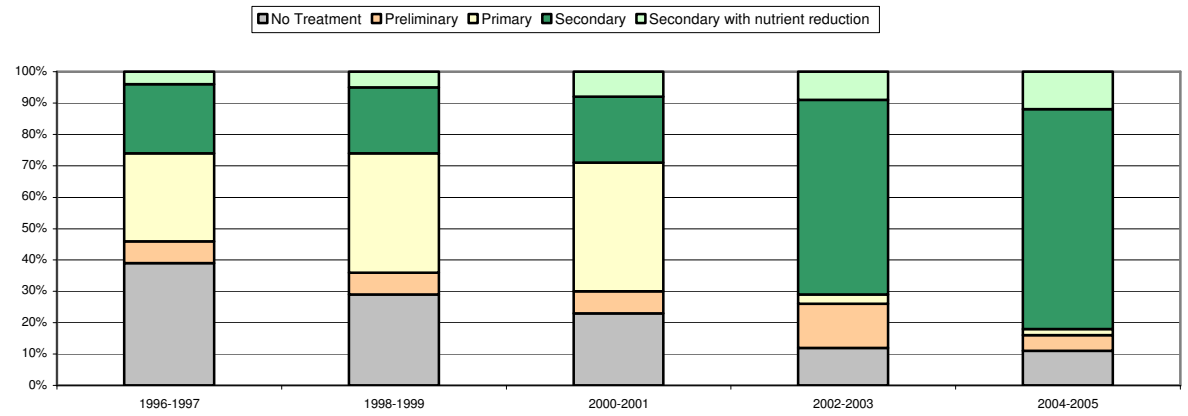
4 Environmental Indicators

The Agency has included in previous reports a series of environmental indicators to monitor trends in the quality of urban waste water discharges and the reuse and disposal routes of sewage sludges. Table 4-1 presents the indicators and their respective values for 2004/2005 as well as corresponding values for 1996/97, 1998/99, 2000/2001and 2002/2003.

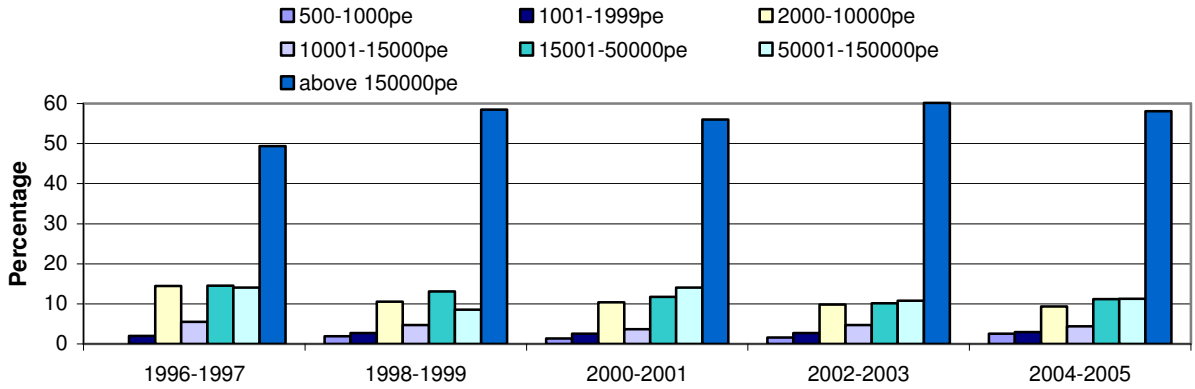
The reported quantity of urban waste water arisings has decreased by about 3% since the last report, much of this is accounted for by improved monitoring at existing plants and more accurate assessments of the population equivalent at new treatment plants. The reporting threshold has also been reduced since 1998 to include agglomerations of 500 p.e.

Waste water Facilities – Level of Treatment (%)



The proportion of waste water subject to secondary treatment only has increased from 58% to 70%. This is due in part to the new sewage treatment plants serving Galway City, Cork City and Limerick City. The provision of secondary treatment with nutrient reduction has increased from 9% in 2002/2003 to 12% in 2004/2005. The changes since the previous report reflects the overall increasing level of treatment of wastewater in Ireland, however, 18 % of waste water receives only basic treatment (preliminary or primary) or none at all.

Agglomeration PE Distribution by Class

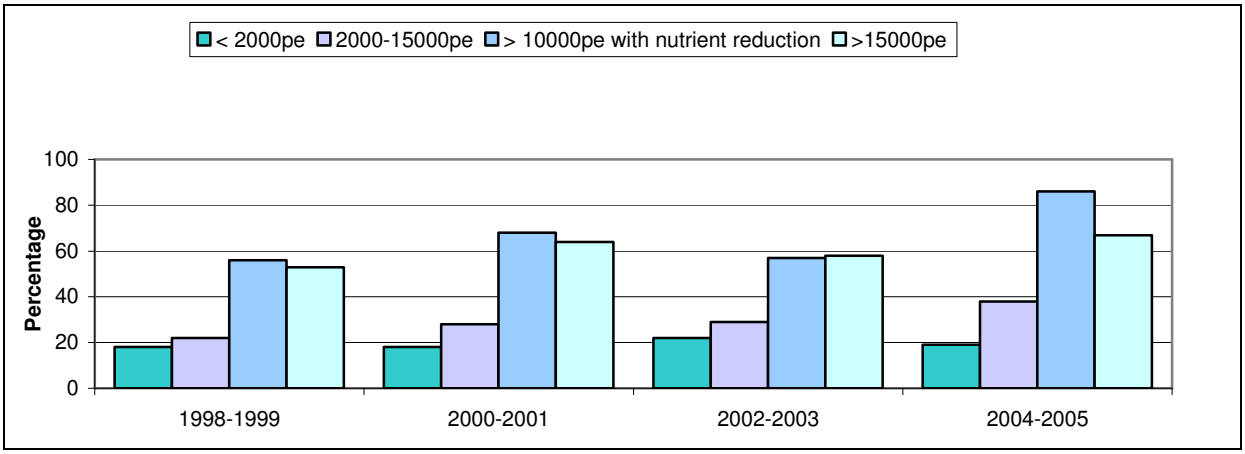


The population equivalent for the largest class i.e. agglomerations >150,000 p.e. has slightly reduced since the last reporting period. This is probably due to more precise monitoring of influent to treatment plants and more accurate measurements of population equivalents for agglomerations, which previously had no treatment plants.

There are four agglomerations with a population equivalent greater than 150,000 persons and collectively they represent almost 60% of waste water arisings with a total population equivalent of 3,287,535

** In previous reports the lower bands in the agglomeration distribution class were 1,001 – 2,000 p.e and 2,001 to 10,000 p.e.*

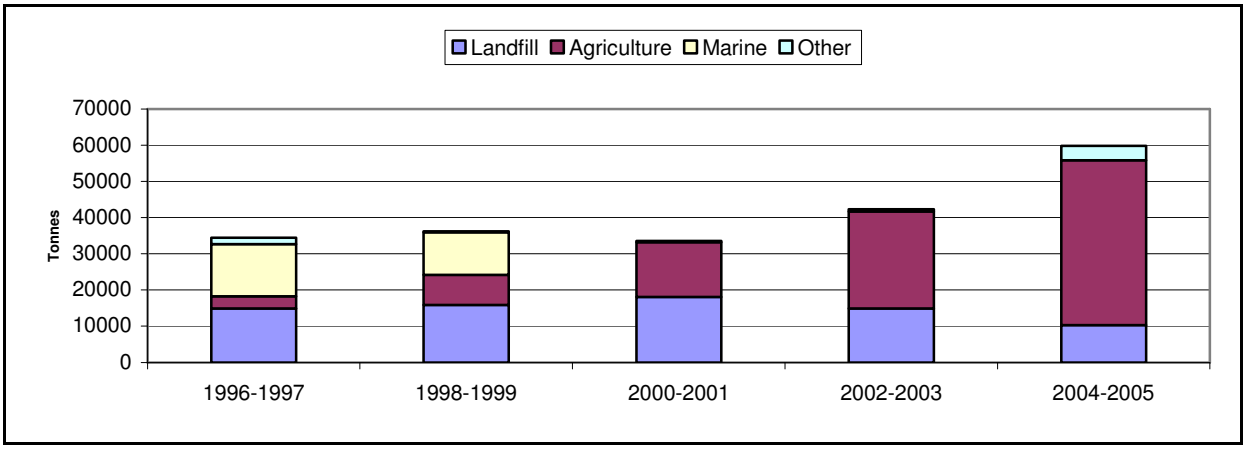
Compliance by Plant Category



The compliance rate has increased for all categories with the exception of plants less than 2,000 p.e. which has decreased from 22% in 2002/2003 to 19% in 2004/2005. For larger plants there has been a marked improvement in compliance.

In order to achieve compliance, adequate sampling must be carried out and the effluent must meet the required standards. A significant number of smaller plants are non compliant because either the required number of effluent samples were not taken or the effluent quality did not meet the minimum standards required by the Regulations.

Sewage Sludge End Use



Overall, the amount of sewage sludge generated has increased significantly over the last 10 years. The use of sewage sludge in agriculture has increased since the last report and now accounts for 76% of the total sludge arisings compared with 63% in 2002/2003 and only 45% in 2001/2002.

Trends in sewage sludge reuse and disposal show a significant increase in the use of sewage sludge in agriculture with a subsequent decrease in disposal to landfill. It is imperative that local authorities take all measures to ensure that sludge is managed according to the Regulations.

Table 4-1: Environmental Indicators for 1996 – 2005

Urban Waste Water	Value for 1996-97**	Value for 1998-99***	Value for 2000 - 01***	Value for 2002 - 03***	Value for 2004 - 05***
total p.e. of all discharges	3,913,644	5,101,116	5,493,338	5,802,424	5,627,456
		Treatment Type (%)			
percentage arisings not receiving any form of treatment	39%	29%	23%	18%	11%
percentage arisings receiving preliminary treatment only	7%	7%	7%	13%	5%
percentage arisings receiving primary treatment only	28%	38%	41%	2%	2%
percentage arisings receiving secondary treatment only	22%	21%	21%	58%	70%
percentage arisings receiving nutrient reduction in addition to secondary treatment	4%	5%	8%	9%	12%
		Percent Discharges by Receiving Water and Agglomeration Size			
percentage arisings discharging to freshwater/estuaries	77%	81%	79%	87%	91%
percentage arisings discharging to coastal waters	23%	19%	21%	13%	9%
percentage discharges from the agglomerations class 500 to 1000 p.e.	-	1.9%	1.4%	1.6%	2.6%
*percentage discharges from the agglomerations class 1,001 to 1,999 p.e *.*	2.0%	2.7%	2.6%	2.7%	2.4%
*percentage discharges from the agglomerations class 2,000 to 10,000 p.e.**	14.5%	10.6%	10.4%	9.8%	10%
percentage discharges from the agglomerations class 10,001 to 15,000 p.e.	5.5%	4.7%	3.7%	4.7%	4.2%
percentage discharges from the agglomerations class 15,001 to 50,000 p.e.	14.6%	13.1%	11.8%	10.2%	11.0%
percentage discharges from the agglomerations class 50,001 to 150,000 p.e.	14.1%	8.6%	14.1%	10.8%	11.4%
percentage discharges from agglomerations above 150,000 p.e.	49.4%	58.5%	56%	60.2%	58.4%

Table 5.1: Environmental Indicators for 1996 – 2005

	Value for 1996-97**	Value for 1998-99***	Value for 2000-01***	Value for 2002 - 03***	Value for 2005***
Secondary Waste Water Treatment Plant Compliance					
Effluent quality standard compliance rate for plants > 15,000 p.e.	43%	53%	64%	52%	67%
Effluent quality standard compliance rate for plants between 2,000 p.e. and 15,000 p.e.	20%	22%	28%	29%	38%
Effluent quality standard compliance rate for plants less than 2,000 p.e.	23%	18%	18%	22%	19%
Effluent quality standard compliance rate for plants > 10,000 p.e. with nutrient reduction	44%	56%	68%	57%	86%
Sewage Sludge					
tonnes of dry solids produced	34,484	35,595	33,559	42,298	59,827
percentage disposed of to landfill	43.0	44.6	53.8	35	17.2
percentage reused in agriculture	9.8	23.2	45.2	63	76.1
percentage disposed of to marine	42.0	33.1	0	0	0
percentage reused in composting and unspecified	0	0	0	2	6.7

**** In previous reports the lower bands were 1,001 – 2,000 p.e and 2,001 to 10,000 p.e.***

***** p.e ≥ 1,000 persons reported*** ****** p.e ≥ 500 persons reported***

5 Recommendations

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5.1 Level of Treatment Provided

1. The provision of secondary treatment for the thirty agglomerations[13] that did not have the required level of treatment during the reporting period should be progressed as a matter of urgency. It is recommended that each local authority review the quality of receiving waters and ensure that the correct level of treatment is provided, to achieve compliance with other Community Directives. It is also recommended that a detailed review of agglomerations and receiving waters, particularly those sensitive to eutrophication, be carried out to assess future needs to secure compliance by the appropriate dates.

5.2 Treatment Plant Operation

2. Local authorities should review the operation of all urban waste water treatment plants in their functional areas including those below 500 p.e. Corrective action programmes should be developed and implemented for those plants that are failing to meet the effluent quality standards set by the Regulations. It is recommended that close communication and a follow-up procedure exist between environmental monitoring and the operation and control of the treatment plant to ensure that corrective actions are taken where exceedances occur. Particular priority should be placed on correcting plants whose discharges are causing environmental pollution in the waters to which the effluents discharge. In addition, all other identifiable sources of pollution contributing to the poor quality status of the water body should be dealt with.
3. In relation to the operation and maintenance of overloaded waste water treatment plants, local authorities need to proceed swiftly with planned schemes to upgrade these plants to ensure full compliance with the regulations.
4. An environmental management systems approach should be adopted to the management and operation of urban waste water treatment plants to ensure the treatment objectives are met. The management system should address:
    - Organisation and responsibilities of personnel involved in operating the treatment plant;
    - Staff training;
    - Quantification of the environmental effects of the treatment plant;
    - Operational control of the treatment plant;
    - Documentation and maintenance records at the treatment plant;
    - Preventative maintenance;

[13] Secondary treatment has recently been provided for two of these agglomerations (Dungarvan and Carrick-on-Suir).

- Routine servicing;
- Emergency response;
- Equipment replacement;
- Quantification of inflow to the plant; and,
- Monitoring of outflows.

5.3 Monitoring and Reporting

5. Local authorities should ensure that all sampling and analysis is carried out in accordance with the Regulations for all treatment plants including those that are managed and operated by third parties on behalf of the local authority.
6. Flow-proportional or time-based 24-hour samples should be used, in order to monitor compliance with the regulations. All analyses should be carried out by an accredited laboratory or one which is on the EPA Register of Approved Laboratories, including a system of analytical quality control that is checked by a person not under the control of the laboratory.
7. Local authorities should review their monitoring programmes to ensure that they are fully compliant with the Regulations and that at least the requisite number of samples is taken.
8. Local authorities should ensure that secondary treatment plants serving a population equivalent of between 500 p.e. and 2,000 p.e. have their waste water treatment discharges sampled at least 6 times per year and reported to the EPA.
9. For all plants with a population equivalent greater than 10,000 p.e., local authorities should implement monitoring programmes for the influent and effluent analysis of total nitrogen and total phosphorus regardless of whether or not they discharge to sensitive areas.
10. All treatment plants under local authority control serving communities below 500 p.e. should be included on the annual monitoring schedule.

5.4 Storm Water Overflows

11. The frequency and volume of storm overflows within each collection system should be assessed, mapped and ranked in order of significance. Measures should also be implemented to limit the pollution due to storm water overflows in order to ensure compliance with Article 3(2) of the Urban Waste Water Treatment Regulations, 2001.

5.5 Management of Odour and Noise

12. The management of odour and noise from waste water treatment plants should be given particular priority notwithstanding the statutory requirements conferred on local authorities under the European Communities (Waste Water Treatment)(Prevention of Odours and Noise) Regulations 2005. Each local authority should prepare odour management plans for each treatment plant operated by or on it's behalf. Other measures that should be put in place at all waste water treatment plants include good

housekeeping, an odour complaints administrative procedure, plant maintenance and inspection and on-site procedural and management systems. The odour management plan should be a documented procedure available on-site and should as a minimum address:

- Identification of on-site odour related sources;
- Possible process or control failures likely to cause odour;
- Actions to be taken in the event of an odour episode;
- Procedures for dealing with complaints; and,
- Record keeping.

5.6 Trade Effluent Discharges

13. Local authorities should ensure that trade effluent discharges are licensed and that appropriate conditions are included in the licences (or revised licences) issued in accordance with the Water Pollution Acts such that:
    - The operation and performance of the waste water and sludge treatment plants and their operation is not adversely affected;
    - The resultant sludge can be beneficially reused (if required); and,
    - The receiving waters are not adversely affected.
14. The licensing authority should audit against the licence conditions to ensure that all the requirements of the licence are in compliance and where appropriate enforcement action should be initiated.
15. The communication of the results of monitoring to licensees should be reviewed. It is advised that the "Recommendation of the European Parliament and of the Council of 4 April 2001 providing for minimum criteria for environmental inspections in the Member States (2001/331/EC)" be considered.
16. Where the EPA proposes to grant a licence or revised licence which involves a discharge to sewer, the local authority should ensure that consents under the provisions of section 97 of the EPA Act, 1992, and section 52 of the Waste Management Act, 1996 contain similar conditions.

5.7 Sewage Sludge

17. All local authorities should audit the chain of custody of sludge consignments under their supervision and ensure that Sludge Registers are up to date and compliant with the requirements of the Regulations.
18. Each local authority as a supplier of sludge for use in agriculture must notify the local authority in whose functional area the sludge is to be used including details of quantities, composition, treatment and the name and address of each recipient for entry in the register.
19. The sludge disposal route should be recorded and where sewage sludge is reused in agriculture (and is not injected or otherwise worked into the land) local authorities should ensure that the sludge is treated prior to reuse.

20. Where sludge is reused in agriculture, the sludge from each waste water treatment plant should be analysed according to the Regulations and reused in accordance with a nutrient management plan.
21. All local authorities, whether as a supplier or receiver of sewage sludge within its functional area, should ensure that the provisions of the European Communities (Good Agricultural Practice for the Protection of Waters) Regulations 2006 are met.
22. An environmental management systems approach should be taken to the application of treated sewage sludge in agriculture, forestry, peatland and other similar outlets. The management system should address as a minimum:
    - Organisation and responsibilities of personnel involved in producing and reusing the treated sludge;
    - Quantification of the environmental effects of the sludge on the environment (including the soil) where the sludge is reused;
    - Control of the sludge storage, holding and spreading operations;
    - Documentation and maintenance of records;
    - Documentation to ensure compliance with recognised standards. (The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, S.I. No. 148 of 1998 and The Waste Management (Use of Sewage Sludge in Agriculture) (Amended) Regulations, S.I. No. 267 of 2001);
    - Preventative maintenance;
    - A monitoring programme; and,
    - Emergency response.
23. The quantities of sludge generated at urban waste water treatment plants should be recorded and this data used in the preparation of waste management plans.

Glossary

Agglomeration: 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.

Agriculture: The growing of all types of commercial food crops, including food crops for stock-rearing purposes.

Appropriate treatment: 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 Urban Waste Water Treatment Directive and of other Community Directives.

BOD_5: Biochemical Oxygen Demand (BOD_5) means the amount of dissolved oxygen taken up by bacteria while oxidising organic matter in a sample, measured after 5 days incubation in the dark at 20°C. The Regulations stipulate that this test is carried out on a homogenised, unfiltered, undecanted sample to which a nitrification inhibitor has been added. The addition of the nitrification inhibitor is important as the oxidation of ammonia to nitrate can increase the rate of oxygen use and give an increased result.

COD: Chemical Oxygen Demand means the amount of oxidising agent potassium dichromate needed to oxidise the organic matter present in a sample. Other chemicals are also added to suppress the effects of interfering substances such as chloride. In general, the BOD_5 will only account for some 65% of the total carbonaceous oxygen demand in urban waste waters. The COD test which achieves virtually complete oxidation returns a result in a short time (2-4 hours) and often a correlation to the BOD_5 test can be established for municipal waste waters once a sufficient number of analyses have been carried out.

Domestic waste water: Waste water from residential settlements and services which originates predominately from the human metabolism and from household activities.

Industrial waste water: 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.

Normal areas: Areas which have not been specified in the third schedule of the Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001), Urban Waste Water Treatment (Amendment) Regulations, 2004 (S.I. 440 of 2004) and such other areas as may be identified pursuant to article 5 of the UWWT Directive.

Nutrient reduction: Reduction of total phosphorus and/or total nitrogen by chemical and/or biological processes to levels specified in Part II of the second

schedule of the Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001).

Preliminary treatment The removal or disintegration of gross solids in sewage and the removal of grit.

Primary treatment: Treatment by a physical and/or chemical process involving settlement of suspended solids. Typically, such treatment will reduce BOD_5 of the incoming waste water by at least 20% and total suspended solids by at least 50% (Urban Waste Water Treatment Directive, 91/271/EEC).

Total nitrogen: The sum of kjeldahl nitrogen (organic nitrogen plus ammonia (NH_3)), nitrate-nitrogen (NO_3) and nitrite-nitrogen (NO_2). In contrast to phosphorus, nitrogen can be a limiting nutrient in marine environments subject to eutrophication. Notwithstanding the eutrophication issue, significant discharges of ammonia can be toxic to aquatic life.

Total phosphorus: The sum of ortho-phosphates, polyphosphates and organically bound phosphates. This element is one of the most meaningful parameters in the assessment of eutrophication, particularly in lakes and freshwaters where it is generally the limiting nutrient.

Total suspended solids: The quantity of suspended solids present in the outflow from a waste water treatment plant is a good indicator of the plant's performance. The solids include both organic and inorganic matter.

Secondary treatment: 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 Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001) are respected.

Sensitive areas: Those areas specified in the third schedule of the Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001), Urban Waste Water Treatment (Amendment) Regulations, 2004 (S.I. 440 of 2004) and such other areas as may be identified pursuant to article 5 of the Urban Waste Water Treatment Directive.

Sludge:

1) Residual sludge from sewage plants treating domestic or urban waste waters and from other sewage plants treating waste waters of a composition similar to domestic and urban waste waters.
2) Residual sludge from septic tanks and other similar installations for the treatment of sewage.
3) Residual sludge from sewage plants other than those referred to in paragraph 1) and 2).

Urban waste water: Domestic waste water or a mixture of domestic waste water with industrial waste water and/or run-off rain water.

Abbreviations

EPA	Environmental Protection Agency
BOD	Biochemical Oxygen Demand
BOD_5	5-day biochemical oxygen demand
COD	Chemical Oxygen Demand
DOEHLG	Department of the Environment Heritage and Local Government
d/s	Downstream
EEC	European Economic Community
EU	European Union
IPC	Integrated Pollution Control
mg/kgDM	Milligrams per kilogram of dry matter
mg/l	Milligrams per litre
o-P	Ortho phosphate
p.e.	Population equivalent(s)
R.B.D.	River Basin District
S.I.	Statutory Instrument
tds	Tonnes of dry solids
Total P	Total phosphorus
TSS	Total suspended solids
u/s	Upstream
UWWT	Urban waste water treatment
WFD	Water Framework Directive

Appendix A: County reports – List of Agglomerations & Effluent Quality

Explanatory Note on Colour Coding and Reporting of Effluent Quality

A colour code (light green) is used to mark the number of samples failing to meet the effluent quality standards at each individual plant. If column three for each parameter in the county tables presented in Appendix A shows a value (shaded green) greater than zero, the plant has not complied with the requirements of the Regulations.

The purple code indicates that an insufficient number of samples were taken for the particular plant. The rules governing the sampling requirements for each class of plant above 2000 p.e. are set out in the Urban Waste Water Treatment Regulations, 2001 and these have been taken into account on an individual basis when evaluating the compliance with the sampling frequencies at each plant.

In some cases the reported population equivalent of the waste water treatment plant may be different from the agglomeration population equivalent, hence the effluent quality data may be presented in a different band in the effluent quality tables e.g. The agglomeration of Arvagh in County Cavan has a population equivalent of 600 while the effluent quality is reported in the 1,000 – 1,999 p.e. band, as the treatment plant has a population equivalent of 1,200. For treatment plants and agglomerations below 500 p.e. the corresponding plant or agglomeration may be reported if it has a p.e. over 500.

Carlow County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Borris	600	Freshwater(River)	Yes	Secondary treatment only
Carlow	36,000	Freshwater(River)	Yes	Secondary treatment only
Hacketstown	630	Freshwater(River)	Yes	Secondary treatment only
Muinebheag	4,000	Freshwater(River)	Yes	Secondary treatment only
Rathvilly	500	Freshwater(River)	Yes	Secondary treatment only
Tullow	3,900	Freshwater(River)	Yes	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Carlow County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Hacketstown	9	9	8	9	8	4	9	9	3
Borris	5	0	0	5	0	0	5	0	0
Rathvilly	6	6	6	6	6	4	6	6	2
From 2,000 to 10,000 PE									
Tullow	14	3	1	15	1	1	15	3	3
Muinebheag	13	3	1	14	2	1	14	3	2
From 15,001 to 50,000 PE									
Carlow	15	0	0	16	1	1	16	2	1

2005 – Effluent Quality from Secondary Waste Water Treatment Plants

(Carlow County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Borris	6	0	0	6	0	0	6	0	0
Hacketstown	6	6	5	6	4	1	6	6	0
Rathvilly	6	6	6	6	6	5	6	6	3
From 2,000 to 10,000 PE									
Tullow	13	2	2	13	2	2	13	2	2
Muinebheag	12	0	0	12	0	0	12	1	0
From 15,001 to 50,000 PE									
Carlow	12	0	0	12	0	0	12	0	0

Cavan County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Arvagh	600	Freshwater(River)	No	Secondary treatment with nutrient reduction
Bailieborough	1,900	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Ballinagh	700	Freshwater(River)	No	Secondary treatment with nutrient reduction
Ballyconnell	1,200	Freshwater(River)	No	Secondary treatment with nutrient reduction
Ballyhaise	700	Freshwater(River)	No	Secondary treatment only
Ballyjamesduff	1,400	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Belturbet	1,950	Freshwater(River)	No	Secondary treatment with nutrient reduction
Blacklion	600	Freshwater(Lake)	No	Secondary treatment only
Cavan	13,850	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Cootehill	1,700	Freshwater(River)	No	Secondary treatment with nutrient reduction
Killeshandra	600	Freshwater(Lake)	No	Secondary treatment only
Kilnaleck	787	Freshwater(River)	No	Secondary treatment only
Kingscourt	1,950	Freshwater(River)	No	Secondary treatment only
Mullagh	950	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Virginia	1,400	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Cavan County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballyhaise	3	0	0	4	0	0	4	1	0
Blacklion	4	0	0	4	1	1	5	1	1
Ballinagh	1	1	0	3	0	0	4	1	1
From 1,001 to 1,999 PE									
Arvagh	2	0	0	4	0	0	4	0	0
Ballyconnell	4	0	0	4	0	0	4	0	0
From 2,000 to 10,000 PE									
Ballyjamesduff	12	0	0	11	0	0	12	0	0
Belturbet	0			0			0		
Kingscourt	8	1	1	11	1	1	12	3	1
Virginia	4	1	0	4	0	0	4	0	0
Cootehill	4	0	0	2	0	0	4	0	0
Bailieborough	8	0	0	7	0	0	8	0	0
From 15,001 to 50,000 PE									
Cavan	10	3	1	12	0	0	12	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Cavan County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Mullagh	4	0	0	4	0	0	4	1	0
Ballyhaise	6	0	0	6	0	0	6	1	0
Blacklion	4	0	0	4	0	0	4	2	0
Killeshandra	12	6	1	10	1	0	12	6	0
Ballinagh	6	0	0	6	0	0	6	0	0
From 1,001 to 1,999 PE									
Ballyconnell	6	1	0	6	0	0	6	1	0
Arvagh	6	3	2	5	2	0	6	3	0
From 2,000 to 10,000 PE									
Belturbet	0			0			0		
Cootehill	4	0	0	5	0	0	5	0	0
Bailieborough	6	0	0	6	0	0	6	0	0
Ballyjamesduff	20	8	6	20	6	4	20	6	2
Virginia	13	0	0	13	0	0	13	0	0
Kingscourt	12	6	3	12	3	0	12	5	0
From 15,001 to 50,000 PE									
Cavan	14	3	0	13	1	0	14	0	0

Clare County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005

Agglomeration	PE		Sensitive*	Present Treatment
Clarecastle	2,500	Estuarine	No	No treatment
Corofin	500	Freshwater(River)	No	Primary treatment only
Crusheen (Galvins)	500	Freshwater(River)	No	Secondary treatment only
Ennis North	17,000	Freshwater(River)	No	Secondary treatment only
Ennis South	4,000	Freshwater(River)	No	Secondary treatment only
Ennistymon	2,000	Freshwater(River)	No	Secondary treatment only
Inagh	500	Freshwater(River)	No	Secondary treatment only
Kilkee	1,330	Coastal Water	No	No treatment
Kilkishen	750	Freshwater(River)	No	Secondary treatment only
Killaloe	1,200	Freshwater(River)	No	Secondary treatment only
Kilmihil	640	Freshwater(River)	No	Secondary treatment only
Kilrush	2,600	Coastal Water	No	No treatment
Lahinch	8,400	Freshwater(River)	No	Secondary treatment only
Lisdoonvarna	2,500	Freshwater(River)	No	Secondary treatment with nutrient reduction
Milltown/Malbay	1,360	Freshwater(River)	No	Secondary treatment only
Newmarket on Fergus	1,940	Freshwater(Lake)	No	Secondary treatment only
Quin	600	Freshwater(River)	No	Secondary treatment only
Scarriff	1,300	Freshwater(River)	Yes	Primary treatment only
Shannon Town	12,500	Estuarine	No	Secondary treatment only
Shannonbanks	1,000	Freshwater(River)	No	Primary treatment only
Sixmilebridge	1,500	Freshwater(River)	No	Secondary treatment only
Tulla	720	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Clare County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Quin	8	2	1	8	2	1	8	2	1
Tulla	6	5	4	7	2	1	7	6	2
Inagh	10	1	0	11	0	0	11	7	1
Kilmihil	10	0	0	11	1	0	11	4	1
From 1,001 to 1,999 PE									
Sixmilebridge	8	0	0	8	0	0	8	0	0
Killaloe	0			0			0		
Lahinch	10	1	1	11	2	1	11	3	3
Lisdoonvarna	8	0	0	9	0	0	9	0	0
Milltown/Malbay	9	5	3	10	2	1	10	6	0
From 2,000 to 10,000 PE									
Newmarket-on-Fergus	8	0	0	8	0	0	7	0	0
Ennistymon	11	11	5	12	3	0	12	9	1
From 10,001 to 15,000 PE									
Shannon Town (Tradaree)	2	2	2	2	2	0	2	2	0
From 15,001 to 50,000 PE									
Ennis North	13	1	1	13	1	1	13	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Clare County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Kilkishen	8	0	0	8	0	0	8	0	0
Inagh	10	1	1	10	1	1	10	3	1
Tulla	6	5	2	6	2	0	6	3	0
Kilmihil	9	0	0	9	0	0	9	0	0
Quin	10	4	1	10	2	0	10	0	0
Crusheen (Galvins)	1	0	0	1	0	0	1	0	0
From 1,001 to 1,999 PE									
Milltown/Malbay	9	7	3	9	3	0	9	2	0
Killaloe	0			0			0		
Lahinch	10	1	0	10	0	0	11	3	2
Lisdoonvarna	8	0	0	10	0	0	10	0	0
Sixmilebridge	9	0	0	9	0	0	9	0	0
From 2,000 to 10,000 PE									
Ennistymon	9	8	5	9	5	0	9	7	2
Ennis South	12	6	3	12	3	0	12	6	2
Newmarket-on-Fergus	10	0	0	10	0	0	10	0	0
From 10,001 to 15,000 PE									
Shannon Town (Tradaree)	9	9	7	10	9	4	10	10	3
From 15,001 to 50,000 PE									
Ennis North	12	2	0	12	0	0	12	0	0

Cork City

List of Agglomerations , Discharge Locations and level of Treatment in 2005

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Cork city	328,000	Estuarine	Yes	Secondary treatment only

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Cork City)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
Cork City	257	5	0	259	8	0	259	18	0

Cork (North) County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballyclough	800	Freshwater(River)	No	Secondary treatment only
Banteer	550	Freshwater(River)	No	Secondary treatment only
Boherbue	600	Freshwater(River)	No	Secondary treatment only
Bridesbridge	600	Freshwater(River)	Yes	Secondary treatment only
Buttevant	1,200	Freshwater(River)	No	Secondary treatment only
Castletownroche	800	Freshwater(River)	No	Secondary treatment only
Charleville	6,415	Freshwater(River)	No	Secondary treatment only
Churchtown	700	Freshwater(River)	No	Secondary treatment only
Conna	800	Freshwater(River)	No	Secondary treatment only
Doneraile	1,100	Freshwater(River)	No	Secondary treatment only
Dromahane	850	Freshwater(River)	No	Secondary treatment only
Fermoy	12,960	Freshwater(River)	Yes	Secondary treatment only
Glanworth	800	Freshwater(River)	No	Secondary treatment only
Kanturk	1,700	Freshwater(River)	No	Secondary treatment only
Kildorrery	550	Freshwater(River)	No	Secondary treatment only
Killavullen	1,000	Freshwater(River)	Yes	Secondary treatment only
Kilworth	800	Freshwater(River)	Yes	Secondary treatment only
Mallow	12,000	Freshwater(River)	Yes	Secondary treatment only
Millstreet	1,600	Freshwater(River)	No	Secondary treatment only
Mitchelstown	6,000	Freshwater(River)	No	Secondary treatment only
Newmarket	1,100	Freshwater(River)	No	Secondary treatment only
Rathcormac	600	Freshwater(River)	No	Secondary treatment only
Watergrasshill	1,500	Freshwater(River)	No	Secondary treatment only

2004– Effluent Quality from Secondary Waste Water Treatment Plants

(Cork (North) County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Boherbue	1	1	0	1	0	0	1	0	0
Banteer	1	0	0	1	0	0	1	0	0
Castletownroche	4	0	0	4	0	0	4	0	0
Conna	1	1	1	1	1	0	1	1	0
Castletownroche	4	0	0	4	0	0	4	0	0
Dromahane	4	0	0	4	0	0	4	1	0
Rathcormac	4	4	4	4	3	0	4	4	0
Newmarket	4	1	0	4	0	0	4	2	0
Kildorrery	4	0	0	4	0	0	4	1	0
From 1,001 to 1,999 PE									
Doneraile	0			0			0		
Millstreet	4	0	0	4	0	0	4	0	0
Buttevant	3	3	3	3	3	2	3	3	1
From 2,000 to 10,000 PE									
Charleville	4	0	0	4	0	0	4	0	0
Watergrasshill	3	0	0	4	0	0	4	1	0
Mitchelstown	4	1	0	4	0	0	4	0	0
Mallow	13	0	0	13	0	0	12	0	0
Kanturk	5	0	0	5	0	0	4	0	0
From 10,001 to 15,000 PE									
Fermoy	11	0	0	11	0	0	11	1	1

2005 – Effluent Quality from Secondary Waste Water Treatment Plants

(Cork (North) County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Rathcormac	7	3	1	7	1	1	7	3	1
Ballyclough	1	0	0	1	0	0	1	0	0
Boherbue	1	0	0	1	0	0	1	0	0
Conna	0			0			0		
Churchtown	2	1	1	2	1	1	2	1	1
Dromahane	3	0	0	3	0	0	3	1	0
Castletownroche	6	0	0	6	0	0	6	1	0
Kildorrery	4	1	0	4	0	0	4	1	1
Banteer	2	0	0	2	0	0	2	0	0
Killavullen	3	1	0	3	1	0	3	1	0
Kilworth	3	3	3	3	3	1	3	3	1
Newmarket	5	4	0	5	0	0	5	1	0
Glanworth	4	3	1	4	1	0	4	2	1
Bridesbridge	2	0	0	2	0	0	2	0	0
From 1,001 to 1,999 PE									
Buttevant	3	3	3	3	3	2	3	3	2
Doneraile	0			0			0		
Millstreet	2	0	0	2	0	0	2	0	0
From 2,000 to 10,000 PE									
Watergrasshill	6	0	0	6	0	0	6	0	0
Charleville	4	0	0	4	0	0	4	0	0
Mitchelstown	4	2	0	4	0	0	4	1	0
Mallow	12	0	0	12	0	0	12	0	0
Kanturk	4	0	0	4	0	0	4	0	0
From 10,001 to 15,000 PE									
Fermoy	12	0	0	12	1	0	12	1	1

Cork (South) Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballincollig New	15,000	Freshwater(River)	No	Secondary treatment only
Ballingeary	600	Freshwater(River)	No	Primary treatment only
Ballymakeera	1,800	Freshwater(River)	No	Primary treatment only
Bandon	6,200	Freshwater(River)	Yes	Secondary treatment only
Blarney	8,000	Freshwater(River)	No	Secondary treatment only
Carrigaline	12,000	Estuarine	No	No treatment
Carrigtohill	4,500	Estuarine	Yes	Secondary treatment only
Castlemartyr	2,000	Freshwater(River)	No	Secondary treatment only
Cloughroe	600	Freshwater(River)	No	Secondary treatment only
Cloyne	510	Freshwater(River)	No	Secondary treatment only
Coachford	600	Freshwater(Lake)	No	Primary treatment only
Cobh	10,000	Coastal Water	No	No treatment
Crosshaven	2,000	Coastal Water	No	Preliminary treatment only
Dripsey	600	Freshwater(River)	No	Secondary treatment only
Innishannon	833	Freshwater(River)	Yes	Primary treatment only
Killeagh	600	Freshwater(River)	No	Secondary treatment only
Kinsale	5,000	Estuarine	Yes	Preliminary treatment only
Macroom	5,000	Freshwater(River)	No	Secondary treatment only
Midleton	10,000	Estuarine	Yes	Secondary treatment with nutrient reduction
Passage/Monkstown	5,000	Estuarine	No	No treatment
Youghal	8,000	Estuarine	No	No treatment

2004– Effluent Quality from Secondary Waste Water Treatment Plants

(Cork (South) Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Dripsey	3	2	2	3	2	1	3	2	1
Killeagh	4	0	0	4	0	0	4	1	1
From 1,001 to 1,999 PE									
Ballymakeera	2	0	0	2	0	0	2	0	0
Cloyne	4	0	0	4	0	0	4	0	0
From 2,000 to 10,000 PE									
Blarney/Tower	6	1	0	6	1	0	6	1	1
Carrigtohill	11	3	0	11	5	0	11	7	1
Bandon	9	0	0	9	0	0	9	0	0
Castlemartyr	4	1	0	4	1	0	4	2	1
Midleton	10	0	0	11	0	0	11	1	0
Macroom U.D.C.	4	1	0	4	0	0	4	0	0
From 10,001 to 15,000 PE									
Ballincollig New	13	0	0	13	0	0	13	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Cork (South) Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Dripsey	7	0	0	7	0	0	7	0	0
Killeagh	7	0	0	7	0	0	7	1	0
From 1,001 to 1,999 PE									
Cloyne	6	0	0	6	0	0	6	0	0
From 2,000 to 10,000 PE									
Castlemartyr	7	3	1	7	2	1	7	3	2
Macroom U.D.C.	6	1	0	6	1	0	6	1	0
Midleton	12	1	1	12	1	1	12	1	1
Carrigtohill	11	6	4	11	8	4	11	8	5
Bandon	8	3	0	8	0	0	8	1	0
Blarney/Tower	11	0	0	11	0	0	11	1	0
From 10,001 to 15,000 PE									
Ballincollig New	14	1	1	14	1	1	14	1	1

Cork (West) Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballydehob	700	Estuarine	No	Primary treatment only
Baltimore	1,150	Coastal Water	No	Primary treatment only
Bantry	2,700	Coastal Water	No	No treatment
Castletownbere	1,100	Coastal Water	No	No treatment
Clonakilty	15,000	Estuarine	No	Secondary treatment only
Courtmacsherry	630	Estuarine	No	No treatment
Drimoleague	500	Freshwater(River)	No	Secondary treatment only
Dunmanway	1,500	Freshwater(River)	No	Secondary treatment only
Glengarriff	900	Coastal Water	No	Primary treatment only
Rosscarbery/Owenahincha	2,500	Coastal Water	No	Primary treatment only
Schull	1,100	Coastal Water	No	Primary treatment only
Skibbereen	3,500	Estuarine	No	No treatment

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Cork (West) Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 1,001 to 1,999 PE									
Dunmanway	3	3	1	3	1	0	3	2	0
From 2,000 to 10,000 PE									
Clonakilty	9	4	3	11	2	2	11	3	3

2005 – Effluent Quality from Secondary Waste Water Treatment Plants

(Cork (West) Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Drimoleague	3	3	1	3	2	0	3	2	0
From 1,001 to 1,999 PE									
Dunmanway	4	2	0	4	0	0	4	2	0
From 2,000 to 10,000 PE									
Clonakilty	12	3	2	12	1	1	12	2	1

Donegal County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ardara No. 1	1,000	Freshwater(River)	No	Primary treatment only
Ardara No. 2	750	Freshwater(River)	No	Primary treatment only
Ballybofey/Stranorlar	5,100	Freshwater(River)	No	Secondary treatment only
Ballyliffen	1,000	Freshwater(River)	No	Secondary treatment only
Ballyshannon No. 1	500	Freshwater(River)	No	Primary treatment only
Ballyshannon No. 2	2,000	Estuarine	No	Primary treatment only
Ballyshannon No. 3	500	Freshwater(River)	No	Primary treatment only
Buncrana	5,500	Coastal Water	No	Primary treatment only
Bundoran	9,000	Coastal Water	No	Preliminary treatment only
Carndonagh	5,200	Freshwater(River)	No	Secondary treatment only
Carrigart	500	Estuarine	No	Primary treatment only
Castlefinn	1,000	Freshwater(River)	No	Primary treatment only
Convoy	1,500	Freshwater(River)	No	Primary treatment only
Donegal Town No. 1	5,400	Estuarine	No	No treatment
Downings	1,000	Coastal Water	No	Primary treatment only
Dunfanaghy/Portnablagh	2,000	Coastal Water	No	Primary treatment only
Dungloe	2,000	Freshwater(River)	No	Primary treatment only
Dunkineeley	1,000	Coastal Water	No	Primary treatment only
Falcarragh	2,000	Estuarine	No	Primary treatment only
Glenties	1,000	Freshwater(River)	No	Primary treatment only
Kilcar	1,000	Coastal Water	No	Preliminary treatment only
Killea	600	Freshwater(River)	No	Secondary treatment only
Killybegs	400,000	Estuarine	Yes	No treatment
Kilmacrennan	900	Freshwater(River)	No	Secondary treatment only
Letterkenny	22,500	Estuarine	No	Secondary treatment only
Lifford	1,550	Freshwater(River)	No	Primary treatment only
Manorcunningham	1,500	Estuarine	No	Secondary treatment only
Milford	2,000	Freshwater(River)	No	Secondary treatment only
Moville	1,500	Freshwater(River)	No	No treatment
Newtowncunningham	1,600	Freshwater(River)	No	Secondary treatment only
Ramelton	1,000	Estuarine	No	Primary treatment only
Raphoe	2,000	Freshwater(River)	No	Secondary treatment only
Rathmullan No. 1	800	Coastal Water	No	Primary treatment only
Rathmullan No2	800	Coastal Water	No	Primary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Donegal County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballyliffen	6	2	1	6	2	1	6	2	1
Kilmacrennan	8	7	4	8	5	2	8	5	1
Newtowncunningham	11	5	1	10	5	2	11	7	1
From 1,001 to 1,999 PE									
Manorcunningham	8	0	0	7	1	0	8	0	0
From 2,000 to 10,000 PE									
Carndonagh	12	0	0	10	0	0	12	1	0
Ballybofey/Stranorlar	12	2	0	8	1	0	12	4	0
Milford	11	1	0	10	0	0	12	3	1
Raphoe	12	2	0	8	0	0	12	3	0
From 15,001 to 50,000 PE									
Letterkenny	16	16	14	12	12	9	16	16	14

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Donegal County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballyliffen	9	6	3	8	6	1	9	7	4
Kilmacrennan	10	10	8	9	7	7	10	9	4
Killea	5	5	3	4	4	2	5	5	3
Newtowncunningham	11	7	3	11	6	3	11	8	3
From 1,001 to 1,999 PE									
Manorcunningham	9	2	0	8	2	0	9	1	0
From 2,000 to 10,000 PE									
Raphoe	11	5	3	11	4	1	12	8	1
Milford	11	1	1	11	1	1	12	1	1
Carndonagh	13	0	0	13	0	0	13	0	0
Ballybofey/Stranorlar	10	0	0	10	0	0	11	0	0
From 15,001 to 50,000 PE									
Letterkenny	11	10	6	9	6	3	12	10	8

Dublin City Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ringsend	2,380,000	Estuarine	Yes	Secondary treatment only

2004/2005 – Effluent Quality from Ringsend Waste Water Treatment Plant (Dublin City Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
> 150,001 PE									
Ringsend 2004	83	16	1	246	19	5	246	83	11
Ringsend 2005	148	20	3	239	24	5	240	89	23

Dun Laoghaire Rathdown County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Coliemore	1,000	Coastal Water	No	No treatment
Corke Abbey	2,000	Coastal Water	No	Secondary treatment only
Shanganagh	65,700	Coastal Water	No	Preliminary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Dun Laoghaire Rathdown)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 2,000 to 10,000 PE									
Corke Abbey**	3	3	0	7	4	1	7	5	2

**This plant was decommissioned in 2005.

Fingal County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Balbriggan	30,000	Coastal Water	No	No treatment
Howth/Baldoyle/Portmarnock	25,000	Coastal Water	No	No treatment
Loughshinny	700	Coastal Water	No	No treatment
Lusk	3,000	Estuarine	No	No treatment
Malahide	18,000	Estuarine	No	Secondary treatment only
Portrane	8,000	Coastal Water	No	Secondary treatment only
Rush	7,800	Coastal Water	No	No treatment
Skerries	12,500	Coastal Water	No	No treatment
Swords	39,000	Estuarine	Yes	Secondary treatment with nutrient reduction
Toberburr	640	Freshwater(River)	Yes	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Fingal County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 2,000 to 10,000 PE									
Portrane	8	3	1	18	3	1	18	7	2
From 15,001 to 50,000 PE									
Malahide	21	0	0	44	0	0	42	11	2
From 50,001 to 150,000 PE									
Swords	21	0	0	44	0	0	42	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Fingal County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Toberburr	5	1	0	5	0	0	5	0	0
From 2,000 to 10,000 PE									
Portrane	16	12	4	16	6	1	16	9	1
From 15,001 to 50,000 PE									
Malahide	44	0	0	46	1	0	46	5	1
From 50,001 to 150,000 PE									
Swords	43	1	0	46	0	0	46	0	0

Galway City Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Galway	73,000	Coastal Water	No	Secondary treatment only

2004/2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Galway City Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 50,001 to 150,000 PE									
Galway City - 2004	24	0	0	24	0	0	24	0	0
Galway City - 2005	23	0	0	22	0	0	23	0	0

Galway County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ahascragh	560	Freshwater(River)	No	Preliminary treatment only
Athenry	3,639	Freshwater(River)	No	Secondary treatment only
Ballinasloe	5,667	Freshwater(River)	No	Secondary treatment with nutrient reduction
Ballygar	944	Freshwater(River)	Yes	Secondary treatment only
Clifden	4,063	Estuarine	No	Primary treatment only
Clonbur	554	Freshwater(River)	No	Preliminary treatment only
Dunmore	890	Freshwater(River)	No	Primary treatment only
Eyrecourt	720	Freshwater(River)	Yes	Primary treatment only
Glenamaddy	750	Freshwater(Lake)	No	Primary treatment only
Gort	4,836	Freshwater(River)	No	Secondary treatment only
Headford	1,390	Freshwater(River)	No	Secondary treatment only
Killimor	500	Freshwater(River)	Yes	Secondary treatment only
Loughrea	4,800	Freshwater(River)	No	Secondary treatment with nutrient reduction
Mountbellew	1,033	Freshwater(River)	Yes	Secondary treatment only
Moycullen	600	Freshwater(River)	No	Secondary treatment only
Oughterard	2,184	Freshwater(River)	No	Secondary treatment only
Portumna	2,842	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction
Tuam	13,250	Freshwater(River)	No	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Galway County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Oughterard	4	2	1	6	3	0	6	3	0
Mountbellew	4	2	2	3	1	0	4	3	1
Ballygar	7	4	3	7	4	2	7	3	1
From 1,001 to 1,999 PE									
Killimor	4	1	1	4	1	0	4	1	0
From 2,000 to 10,000 PE									
Moycullen	16	0	0	17	0	0	17	0	0
Loughrea	12	3	0	11	0	0	12	0	0
Ballinasloe	11	0	0	11	1	0	12	0	0
Athenry	16	8	3	16	4	0	16	5	1
Gort	13	7	2	13	2	0	13	1	0
Headford	16	4	1	16	0	0	15	0	0
Portumna	12	2	0	12	0	0	13	0	0
From 15,001 to 50,000 PE									
Tuam	12	0	0	12	0	0	12	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Galway County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballygar	11	11	8	8	5	2	11	11	6
Mountbellew	11	10	4	9	2	1	11	10	1
Oughterard	12	5	1	10	0	0	12	2	0
From 1,001 to 1,999 PE									
Killimor	10	4	2	7	3	1	9	3	1
From 2,000 to 10,000 PE									
Portumna	12	1	0	9	0	0	11	0	0
Headford	12	2	0	12	0	0	12	0	0
Loughrea	12	1	0	9	0	0	11	0	0
Moycullen	12	0	0	12	0	0	12	0	0
Gort	10	6	2	12	0	0	12	0	0
Ballinasloe	12	5	2	9	0	0	11	0	0
Athenry	11	5	3	12	4	1	12	5	4
From 15,001 to 50,000 PE									
Tuam	12	0	0	12	0	0	12	0	0

Kerry County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ardfert	1,000	Freshwater(River)	No	Secondary treatment only
Ballybunion	4,725	Estuarine	Yes	Secondary treatment only
Ballyduff	800	Freshwater(River)	Yes	Primary treatment only
Ballyferriter	500	Estuarine	No	Primary treatment only
Ballyheigue	2,222	Coastal Water	No	Secondary treatment only
Ballylongford	900	Estuarine	No	Primary treatment only
Cahersiveen	4,502	Coastal Water	No	Secondary treatment only
Castleisland	6,650	Freshwater(River)	No	Secondary treatment only
Dingle	8,600	Estuarine	No	Secondary treatment only
Farranfore	2,000	Freshwater(River)	No	Secondary treatment only
Fenit	1,000	Coastal Water	No	Primary treatment only
Glenbeigh	1,900	Freshwater(Lake)	No	Primary treatment only
Kenmare	9,100	Freshwater(River)	No	Secondary treatment only
Killarney	32,814	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction
Killorglin	3,776	Freshwater(River)	No	Secondary treatment only
Listowel	9,861	Freshwater(River)	Yes	Secondary treatment only
Rathmore	1,200	Freshwater(River)	No	Secondary treatment only
Sneem	900	Estuarine	No	Primary treatment only
Tarbert	1,400	Estuarine	No	Primary treatment only
Tralee	24,633	Coastal Water	No	Secondary treatment only
Waterville	2,000	Coastal Water	No	Primary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Kerry County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ardfert	0			0			0		
Rathmore	0			0			0		
From 2,000 to 10,000 PE									
Farranfore	0			0			0		
Killorglin	43	0	0	37	0	0	43	0	0
Castleisland	42	0	0	44	0	0	41	0	0
Ballybunion	36	0	0	36	0	0	36	0	0
Cahersiveen	29	0	0	29	0	0	29	0	0
Dingle	37	0	0	35	0	0	34	0	0
Ballyheigue	45	0	0	45	0	0	45	0	0
From 15,001 to 50,000 PE									
Tralee	35	0	0	35	0	0	35	0	0
From 50,001 to 150,000 PE									
Killarney	50	0	0	50	0	0	50	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Kerry County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ardfert	0			0			0		
Rathmore	0			0			0		
From 2,000 to 10,000 PE									
Ballybunion	37	0	0	37	0	0	39	0	0
Dingle	40	0	0	40	0	0	40	0	0
Castleisland	43	18	3	44	0	0	44	0	0
Farranfore	0			0			0		
Kenmare	51	13	5	51	10	4	51	10	5
Ballyheigue	43	0	0	43	0	0	43	0	0
Cahersiveen	45	0	0	45	0	0	45	0	0
Killorglin	39	0	0	37	0	0	38	0	0
From 10,001 to 15,000 PE									
Listowel	36	0	0	35	0	0	36	1	0
From 15,001 to 50,000 PE									
Tralee	49	0	0	51	0	0	51	0	0
From 50,001 to 150,000 PE									
Killarney	51	0	0	51	0	0	50	0	0

Kildare County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Athy	11,550	Freshwater(River)	Yes	Secondary treatment only
Ballymore Eustace	1,000	Freshwater(River)	Yes	Primary treatment only
Brownstown (Curragh Camp)	1,500	Freshwater(Lake)	No	Primary treatment only
Castledermot	800	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Coill Dubh	800	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Derrinturn	500	Freshwater(River)	No	Secondary treatment only
Kilcullen	500	Freshwater(River)	No	Primary treatment only
Kildare Town	6,687	Freshwater(River)	No	Secondary treatment only
Kilmeague	700	Freshwater(River)	No	Secondary treatment only
Leixlip	55,131	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Monasterevin	4,522	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Nurney	500	Freshwater(River)	Yes	Secondary treatment only
Osberstown	74,437	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Prosperous	1,000	Freshwater(River)	No	Secondary treatment only
Rathangan	2,000	Freshwater(River)	Yes	Secondary treatment only
Robertstown	1,000	Freshwater(River)	Yes	Secondary treatment only
Suncroft	500	Freshwater(River)	No	Primary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Kildare County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Nurney	23	2	0	24	3	1	24	5	2
Derrinturn	1	0	0	1	0	0	1	0	0
Prosperous	0			0			0		
Robertstown	2	0	0	2	0	0	2	0	0
From 2,000 to 10,000 PE									
Monasterevin	10	10	9	12	12	10	12	12	12
Castledermot	15	0	0	16	1	0	16	0	0
Coill Dubh	1	0	0	1	0	0	1	0	0
Kildare Town	35	10	1	39	25	1	41	24	0
From 10,001 to 15,000 PE									
Athy	8	0	0	10	0	0	7	0	0
From 50,001 to 150,000 PE									
Osberstown	144	0	0	181	0	0	185	0	0
Leixlip	51	0	0	53	0	0	53	2	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Kildare County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Nurney	15	0	0	16	1	0	16	0	0
Kilmeague	17	5	3	16	3	2	17	3	3
Derrinturn	18	10	6	19	9	3	19	14	4
Prosperous	0			0			0		
Robertstown	6	0	0	6	0	0	6	0	0
From 2,000 to 10,000 PE									
Kildare Town	21	2	1	23	1	0	23	4	0
Rathangan	2	0	0	2	0	0	2	1	1
Castledermot	37	2	0	37	0	0	37	0	0
Coill Dubh	11	0	0	11	0	0	11	0	0
Monasterevin	16	0	0	16	0	0	16	0	0
From 10,001 to 15,000 PE									
Athy	20	1	0	19	0	0	19	2	0
From 50,001 to 150,000 PE									
Leixlip	43	0	0	42	0	0	44	1	0
Osberstown	118	0	0	135	0	0	135	0	0

Kilkenny County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Abbey Park	580	Estuarine	No	Primary treatment only
Ballyragget	900	Freshwater(River)	Yes	Secondary treatment only
Bennettsbridge	640	Freshwater(River)	Yes	Primary treatment only
Callan	2,600	Freshwater(River)	Yes	Secondary treatment only
Castlecomer	1,800	Freshwater(River)	Yes	Secondary treatment only
Clogh - Moneenroe	650	Freshwater(River)	Yes	Secondary treatment only
Freshford	900	Freshwater(River)	Yes	Secondary treatment only
Gowran	600	Freshwater(River)	Yes	Secondary treatment only
Graignamanagh-Tinnahinch	950	Freshwater(River)	Yes	Secondary treatment only
Johnstown	700	Freshwater(River)	Yes	Primary treatment Only
Kilkenny City	110,000	Freshwater(River)	Yes	Secondary treatment only
Mooncoin	900	Estuarine	Yes	Primary treatment only
Paulstown	800	Freshwater(River)	Yes	Secondary treatment only
Piltown	900	Estuarine	Yes	Secondary treatment only
Thomastown	2,500	Freshwater(River)	Yes	Secondary treatment only
Urlingford	1,000	Freshwater(River)	Yes	Secondary treatment only
Waterford City Environs	4,000	Estuarine	Yes	No treatment

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Kilkenny County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gowran	4	4	4	4	3	2	4	4	1
Urlingford	2	1	1	2	1	0	2	2	1
Freshford	1	1	1	1	1	0	1	1	1
Paulstown	5	4	1	5	1	0	5	1	0
Stonyford [14]	1	1	1	1	1	0	1	1	0
From 1,001 to 1,999 PE									
Piltown	4	2	1	4	0	0	4	0	0
Ballyragget	1	1	1	1	1	1	1	1	1
From 2,000 to 10,000 PE									
Clogh-Moneenroe	4	1	0	4	0	0	4	1	1
Callan	4	3	3	4	1	1	4	2	1
Thomastown	3	0	0	3	0	0	3	0	0
Castlecomer	5	5	5	5	3	2	4	1	1
Graignamanagh	1	0	0	1	0	0	1	0	0
From 50,001 to 150,000 PE									
Kilkenny (Purcellsinch)	177	26	11	177	8	1	161	14	6

[14] The agglomeration of Stonyford has a reported population equivalent of 350.

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Kilkenny County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gowran	3	3	3	3	2	2	3	2	1
Freshford	1	1	1	1	1	1	1	1	1
Paulstown	2	2	1	2	1	0	2	0	0
Stonyford	1	1	1	1	1	0	1	1	0
Urlingford	10	5	1	10	3	0	10	4	2
From 1,001 to 1,999 PE									
Piltown	4	2	0	4	0	0	4	1	0
Ballyragget	3	1	0	3	0	0	3	1	0
From 2,000 to 10,000 PE									
Castlecomer	4	4	3	4	2	0	4	0	0
Clogh-Moneenroe	3	0	0	3	0	0	3	1	0
Thomastown	11	6	2	9	0	0	10	3	1
Graignamanagh	6	1	1	6	0	0	5	1	0
Callan	2	2	2	2	2	1	2	2	2
From 50,001 to 150,000 PE									
Kilkenny (Purcellsinch)	6	0	0	217	7	5	223	8	6

Laois County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Abbeyleix	2,209	Freshwater(River)	Yes	Secondary treatment only
Ballinakill	557	Freshwater(River)	Yes	Secondary treatment only
Ballylinan	842	Freshwater(River)	Yes	Secondary treatment only
Borris-in-Ossory	626	Freshwater(River)	Yes	Secondary treatment only
Clonaslee	676	Freshwater(River)	Yes	Secondary treatment only
Durrow	1,308	Freshwater(River)	Yes	Primary treatment only
Mountmellick	5,970	Freshwater(River)	Yes	Secondary treatment only
Mountrath	2,184	Freshwater(River)	Yes	Secondary treatment only
Portarlington	7,000	Freshwater(River)	Yes	Secondary treatment only
Portlaoise	20,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Rathdowney	1,596	Freshwater(River)	Yes	Secondary treatment only
Stradbally	1,302	Freshwater(River)	Yes	Primary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Clonaslee	12	5	0	12	3	0	12	6	2
Borris-in-Ossory	11	0	0	11	1	1	11	0	0
Ballyroan	11	0	0	11	0	0	11	2	2
The Swan	12	1	0	12	0	0	11	3	1
Castletown	11	6	3	11	3	1	11	6	1
Rathdowney	12	9	4	12	6	2	12	9	2
From 1,001 to 1,999 PE									
Abbeyleix	11	5	3	11	5	0	11	6	2
Mountrath	12	9	1	12	7	0	12	7	3
From 2,000 to 10,000 PE									
Portarlington	13	2	0	16	0	0	13	0	0
Ballylinan	11	8	4	10	7	2	11	8	4
Mountmellick	12	5	5	12	4	4	12	5	4
From 15,001 to 50,000 PE									
Portlaoise	63	4	0	363	0	0	351	3	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Laois County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Clonaslee	12	8	4	12	4	0	12	9	2
Borris-in-Ossory	12	1	1	12	1	1	12	2	1
Rathdowney	12	10	3	12	3	0	12	12	2
From 1,001 to 1,999 PE									
Abbeyleix	12	4	3	12	4	0	12	9	2
Mountrath	12	8	4	12	6	0	12	8	2
From 2,000 to 10,000 PE									
Portarlington	24	4	1	24	6	1	23	12	5
Ballylinan	11	1	1	11	1	0	11	1	1
Mountmellick	12	3	2	11	1	0	12	3	2
From 15,001 to 50,000 PE									
Portlaoise	62	4	0	361	0	0	361	2	0

Leitrim County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballinamore	1,380	Freshwater(River)	No	Secondary treatment with nutrient reduction
Carrick on Shannon	4,302	Freshwater(River)	Yes	Secondary treatment only
Carrigallen	501	Freshwater(Lake)	No	Secondary treatment only
Dromahair	620	Freshwater(River)	No	Secondary treatment with nutrient reduction
Dromod	518	Freshwater(Lake)	No	Secondary treatment only
Drumshanbo	960	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction
Kinlough	700	Freshwater(River)	No	Secondary treatment with nutrient reduction
Leitrim Village	501	Freshwater(River)	Yes	Secondary treatment only
Manorhamilton	1,650	Freshwater(River)	No	Secondary treatment with nutrient reduction
Mohill	1,398	Freshwater(River)	No	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Leitrim County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Dromahair	4	0	0	4	0	0	4	0	0
Kinlough	3	1	1	3	1	1	3	1	1
Carrigallen	3	0	0	3	0	0	3	0	0
Leitrim Village	3	0	0	3	0	0	3	0	0
Drumshanbo	2	0	0	2	0	0	2	0	0
From 1,001 to 1,999 PE									
Ballinamore	4	0	0	4	0	0	4	0	0
Manorhamilton	3	0	0	3	0	0	3	0	0
Mohill	3	0	0	3	0	0	3	0	0
From 2,000 to 10,000 PE									
Carrick on Shannon	10	1	0	10	2	0	10	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants

(Leitrim County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Kinlough	5	0	0	6	0	0	6	2	0
Dromahair	4	2	2	5	2	1	5	5	1
Carrigallen	4	0	0	5	0	0	5	2	0
Leitrim Village	6	2	1	6	1	0	6	2	1
Dromod	5	3	2	5	3	2	5	4	2
Drumshanbo	11	2	1	12	2	1	10	3	1
From 1,001 to 1,999 PE									
Mohill	10	1	1	10	1	1	9	2	2
Ballinamore	11	0	0	11	0	0	11	1	1
Manorhamilton	7	0	0	9	0	0	8	0	0
From 2,000 to 10,000 PE									
Carrick on Shannon	11	3	2	12	4	3	12	5	3

Limerick City Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Limerick	56,000	Estuarine	No	Secondary treatment only

2004/2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Limerick City Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 50,001 to 150,000 PE									
Limerick City - 2004	11	1	0	12	0	0	12	1	0
Limerick City - 2005	23	0	0	23	2	2	23	2	0

Limerick County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Abbeyfeale	1,500	Freshwater(River)	No	Secondary treatment only
Adare	1,600	Estuarine	No	Secondary treatment only
Askeaton	1,024	Estuarine	No	Secondary treatment only
Athea	592	Freshwater(River)	No	Secondary treatment only
Bruff	1,200	Freshwater(River)	No	Secondary treatment only
Cahercornlish	800	Freshwater(River)	No	Secondary treatment only
Cappamore	860	Freshwater(River)	No	Secondary treatment only
Castleconnell	1,300	Freshwater(River)	No	Secondary treatment only
Castletroy	13,000	Freshwater(River)	No	Secondary treatment only
Croom	1,200	Freshwater(River)	No	Secondary treatment only
Doon	700	Freshwater(River)	No	Secondary treatment only
Dromcollagher	500	Freshwater(River)	No	Secondary treatment only
Foynes	558	Estuarine	No	No treatment
Glin	1,386	Estuarine	No	No treatment
Hospital	1,000	Freshwater(River)	No	Secondary treatment only
Kilfinnane	900	Freshwater(River)	No	Secondary treatment only
Kilmallock	2,400	Freshwater(River)	No	Secondary treatment only
Murroe	500	Freshwater(River)	No	Secondary treatment only
Newcastle West	6,100	Freshwater(River)	No	Secondary treatment with nutrient reduction
Oola	500	Freshwater(River)	No	Secondary treatment only
Pallaskenry	550	Estuarine	No	Preliminary treatment only
Patrickswell	1,500	Freshwater(River)	No	Secondary treatment only
Rathkeale	2,000	Freshwater(River)	No	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Limerick County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Murroe	4	0	0	4	0	0	4	0	0
Athea	3	3	3	3	3	0	3	3	0
Oola	5	2	0	5	1	0	5	2	0
Cappamore	5	5	3	5	4	0	5	3	1
Doon	5	5	4	5	5	3	5	5	2
Dromcollagher	5	3	2	5	3	0	5	3	0
Cahercornlish	5	3	1	6	1	1	6	2	0
Hospital	6	5	2	6	4	0	6	3	0
From 1,001 to 1,999 PE									
Bruff	5	4	2	5	3	0	5	4	1
Adare	6	6	6	6	6	6	6	6	6
Castleconnell[15]	0			0			0		
Croom	6	0	0	6	0	0	5	1	1
Patrickswell	5	5	5	5	5	5	5	5	5
Askeaton	4	4	4	4	4	3	4	4	2
Abbeyfeale	10	1	0	10	0	0	10	1	0
From 2,000 to 10,000 PE									
Newcastle West	8	2	1	11	0	0	9	0	0
Rathkeale	10	0	0	10	0	0	10	0	0
Kilmallock	10	8	3	10	8	0	10	8	1
From 10,001 to 15,000 PE									
Castletroy	24	0	0	24	0	0	24	0	0

[15] Castleconnell now discharges to the Castletroy waste water treatment plant.

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Limerick County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Murroe	4	0	0	4	0	0	4	0	0
Dromcollagher	5	4	1	4	2	1	5	4	3
Kilfinnane	3	3	3	3	3	2	3	3	1
Oola	1	0	0	1	0	0	1	0	0
Doon	7	4	3	4	4	3	7	7	4
Cahercornlish	5	1	0	4	1	0	5	3	0
Athea	4	4	4	3	3	2	3	3	1
Hospital	5	5	3	4	4	2	5	5	0
From 1,001 to 1,999 PE									
Bruff	4	4	4	4	4	1	4	4	2
Croom	5	0	0	5	0	0	6	0	0
Castleconnell	0			0			0		
Adare	5	5	5	5	5	5	5	5	5
Abbeyfeale	5	0	0	5	1	0	5	1	1
Patrickswell	5	5	5	4	4	4	5	5	5
Askeaton	5	5	5	4	4	4	5	5	5
From 2,000 to 10,000 PE									
Kilmallock	9	5	4	8	5	2	8	5	1
Rathkeale	8	0	0	7	0	0	38	0	0
Newcastle West	8	0	0	7	0	0	8	0	0
From 10,001 to 15,000 PE									
Castletroy	23	0	0	18	0	0	23	0	0

Longford County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballymahon	2,125	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Drumlish	1,500	Freshwater(River)	Yes	Secondary treatment only
Edgeworthstown	3,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Granard	3,200	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction
Lanesboro	1,000	Freshwater(River)	Yes	Primary treatment only
Longford	20,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Newtownforbes	1,000	Freshwater(River)	Yes	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Longford County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Kenagh[16]	11	3	1	12	1	1	12	5	2
Newtownforbes	10	9	8	12	9	8	12	12	6
From 1,001 to 1,999 PE									
Drumlish	10	10	9	12	10	6	12	12	6
From 2,000 to 10,000 PE									
Ballymahon	12	0	0	12	0	0	12	0	0
Edgeworthstown	11	1	0	12	0	0	12	1	0
Granard	10	2	0	11	0	0	11	5	1
From 15,001 to 50,000 PE									
Longford	10	0	0	11	0	0	11	2	0

[16] The agglomeration of Kenagh has a reported population equivalent of 300.

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Longford County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Kenagh	10	2	0	10	2	0	10	8	2
Newtownforbes	11	11	11	11	11	7	11	11	11
From 1,001 to 1,999 PE									
Drumlish	11	11	10	11	10	5	11	10	7
From 2,000 to 10,000 PE									
Granard	11	0	0	11	0	0	11	1	1
Edgeworthstown	11	3	1	11	1	1	11	2	1
Ballymahon	12	0	0	12	1	0	12	0	0
From 15,001 to 50,000 PE									
Longford	12	0	0	12	1	0	12	0	0

Louth County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ardee	5,050	Freshwater(River)	No	Secondary treatment only
Blackrock	4,815	Estuarine	No	Secondary treatment only
Carlingford	840	Coastal Water	No	Secondary treatment only
Castlebellingham	1,000	Freshwater(River)	No	Secondary treatment only
Clogherhead	2,000	Coastal Water	No	Secondary treatment only
Drogheda	67,700	Estuarine	No	Secondary treatment only
Dromiskin	1,300	Freshwater(River)	No	Secondary treatment only
Dundalk	179,535	Estuarine	No	Secondary treatment only
Dunleer	1,315	Freshwater(River)	No	Secondary treatment only
Louth Village	565	Freshwater(River)	No	Secondary treatment only
Tullyallen	550	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Louth County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Tullyallen	4	4	2	6	5	3	6	3	3
Carlingford	6	1	0	6	2	2	5	1	0
Louth Village	4	0	0	5	0	0	5	0	0
From 1,001 to 1,999 PE									
Dunleer	3	0	0	6	0	0	6	0	0
Clogherhead	5	2	0	5	0	0	5	0	0
Castlebellingham	5	1	0	6	0	0	6	0	0
Dromiskin	5	1	1	6	3	1	6	2	1
From 2,000 to 10,000 PE									
Blackrock	6	0	0	6	1	1	6	0	0
Ardee	5	0	0	6	0	0	6	0	0
From 50,001 to 150,000 PE									
Drogheda	49	0	0	49	0	0	49	3	0
> 150,001 PE									
Dundalk	49	0	0	49	0	0	49	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Louth County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Tullyallen	6	6	5	6	5	1	6	5	1
Carlingford	2	0	0	2	1	0	2	0	0
Louth Village	6	1	0	6	0	0	6	0	0
From 1,001 to 1,999 PE									
Clogherhead	6	3	2	6	0	0	5	1	0
Dromiskin	6	4	2	6	3	1	6	3	2
Castlebellingham	4	1	1	4	1	1	4	0	0
Dunleer	6	0	0	5	0	0	6	0	0
From 2,000 to 10,000 PE									
Ardee	12	4	1	11	0	0	12	2	0
Blackrock	11	2	0	12	0	0	12	0	0
From 50,001 to 150,000 PE									
Drogheda	12	0	0	12	1	1	12	0	0
> 150,001 PE									
Dundalk	10	1	1	10	1	0	10	1	0

Mayo County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Achill Island Central	3,000	Coastal Water	No	Secondary treatment only
Balla	970	Freshwater(River)	No	Secondary treatment only
Ballina	16,000	Estuarine	No	Secondary treatment only
Ballindine	600	Freshwater(River)	No	Secondary treatment with nutrient reduction
Ballinrobe	5,410	Freshwater(River)	No	Secondary treatment with nutrient reduction
Ballyhaunis	3,527	Freshwater(River)	No	Secondary treatment with nutrient reduction
Bangor Erris	750	Freshwater(River)	No	Secondary treatment only
Belcarra	500	Freshwater(River)	No	Secondary treatment only
Belmullet	2,250	Coastal Water	No	No treatment
Castlebar	23,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Charlestown	1,916	Freshwater(River)	No	Secondary treatment only
Claremorris	7,497	Freshwater(River)	No	Secondary treatment with nutrient reduction
Crossmolina	1,500	Freshwater(River)	No	Secondary treatment with nutrient reduction
Foxford	1,800	Freshwater(River)	No	Secondary treatment only
Killala	1,500	Coastal Water	No	No treatment
Kiltimagh	1,450	Freshwater(River)	No	Primary treatment only
Knock	1,893	Freshwater(River)	No	Secondary treatment with nutrient reduction
Louisbourgh	600	Freshwater(River)	No	Secondary treatment only
Mallaranny	650	Coastal Water	No	Secondary treatment only
Newport	800	Estuarine	No	Primary treatment only
Shrule	500	Freshwater(River)	No	Secondary treatment only
Swinford	3,000	Freshwater(River)	No	Secondary treatment with nutrient reduction
Westport	9,015	Coastal Water	No	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Mayo County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballindine	1	1	0	2	1	0	1	0	0
Ballycastle[17]	1	0	0	2	0	0	2	0	0
Louisbourgh	2	2	2	2	2	1	2	2	1
Shrule	1	0	0	2	0	0	2	0	0
From 1,001 to 1,999 PE									
Foxford	2	1	0	2	1	0	2	2	0
Mallaranny	1	0	0	2	0	0	2	0	0
Bangor Erris	1	0	0	2	0	0	2	0	0
Charlestown	3	1	0	3	0	0	3	1	0
From 2,000 to 10,000 PE									
Ballinrobe	2	0	0	2	0	0	2	0	0
Claremorris	2	0	0	2	0	0	2	0	0
Cong [18]	2	0	0	2	0	0	2	0	0
Achill Island Central	1	1	0	2	1	0	2	1	0
Ballyhaunis	5	0	0	5	0	0	4	0	0
Crossmolina	3	1	0	3	0	0	3	0	0
Knock	5	0	0	5	0	0	5	0	0
From 10,001 to 15,000 PE									
Westport	7	0	0	9	0	0	9	0	0
From 15,001 to 50,000 PE									
Ballina	5	1	1	5	1	1	5	1	1
Castlebar	3	0	0	3	0	0	3	0	0

[17] The agglomeration of Ballycastle has a reported population equivalent of 400.

[18] The agglomeration of Cong has a reported population equivalent of 471.

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Mayo County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballycastle	1	0	0	1	0	0	1	0	0
Belcarra	2	1	0	2	1	0	2	1	0
Ballindine	2	2	0	2	1	0	2	1	0
Louisbourgh	1	1	1	2	1	1	2	1	1
Shrule	2	1	0	2	0	0	2	0	0
From 1,001 to 1,999 PE									
Foxford	1	1	0	1	0	0	1	1	0
Mallaranny	2	0	0	2	0	0	2	0	0
Bangor Erris	2	0	0	2	0	0	2	0	0
Balla	0	0	0	1	0	0	1	0	0
Charlestown	2	0	0	2	0	0	2	0	0
From 2,000 to 10,000 PE									
Ballyhaunis	11	0	0	13	0	0	13	0	0
Achill Island Central	11	1	0	11	1	0	11	1	0
Cong	11	0	0	12	0	0	12	2	0
Ballinrobe	12	0	0	13	0	0	13	0	0
Claremorris	14	0	0	14	0	0	14	0	0
Crossmolina	9	0	0	12	0	0	12	1	0
Knock	10	0	0	10	0	0	10	0	0
Swinford	13	0	0	13	0	0	13	0	0
From 10,001 to 15,000 PE									
Westport	14	0	0	14	0	0	14	0	0
From 15,001 to 50,000 PE									
Castlebar	11	1	1	12	1	1	12	1	1
Ballina	11	1	1	12	2	1	12	2	1

Meath County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Athboy	2,500	Freshwater(River)	Yes	Secondary treatment only
Ballivor	500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Carlanstown	600	Freshwater(River)	No	Secondary treatment with nutrient reduction
Donore	500	Freshwater(River)	No	Secondary treatment only
Drumconrath	600	Freshwater(River)	No	Secondary treatment only
Duleek	2,500	Freshwater(River)	No	Secondary treatment with nutrient reduction
Dunshaughlin	4,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Enfield	1,800	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Julianstown	500	Freshwater(River)	No	Secondary treatment only
Kells	5,500	Freshwater(River)	Yes	Secondary treatment only
Kentstown	600	Freshwater(River)	No	Secondary treatment with nutrient reduction
Kildalkey	1,500	Freshwater(River)	No	Secondary treatment only
Kilmainhamwood	500	Freshwater(River)	No	Secondary treatment only
Kilmessan	500	Freshwater(River)	Yes	Secondary treatment only
Laytown	2,500	Estuarine	No	Secondary treatment only
Longwood	700	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Mornington	6,000	Coastal Water	No	Preliminary treatment only
Navan	25,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Nobber	600	Freshwater(River)	No	Secondary treatment only
Oldcastle	1,400	Freshwater(River)	No	Secondary treatment only
Slane	1,500	Freshwater(River)	No	Secondary treatment only
Stamullen	1,800	Freshwater(River)	No	Secondary treatment with nutrient reduction
Summerhill	700	Freshwater(River)	Yes	Secondary treatment only
Trim	7,500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Meath County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Carlanstown	10	0	0	10	0	0	9	0	0
Donore	11	1	0	11	1	0	10	3	1
Kentstown	10	0	0	10	0	0	10	1	0
Jullianstown	0			0			0		
Kilmainhamwood	10	4	2	10	3	2	10	4	2
Drumconrath	10	0	0	10	0	0	10	0	0
Summerhill	10	5	2	10	2	0	9	6	2
Kilmessan	10	0	0	10	2	1	9	3	1
Nobber	9	6	0	10	1	0	9	3	0
From 1,001 to 1,999 PE									
Longwood	10	4	1	11	2	1	10	5	1
Oldcastle	10	0	0	11	0	0	9	2	0
Slane	10	1	0	10	1	0	10	2	0
From 2,000 to 10,000 PE									
Johnstown Bridge	12	0	0	12	0	0	12	0	0
Duleek	12	2	1	12	1	0	12	2	0
Athboy	11	10	4	11	7	4	11	9	3
Ballivor	9	4	3	9	5	2	9	7	3
Dunshaughlin	19	1	0	19	0	0	19	3	1
Kells	12	0	0	12	0	0	12	0	0
Laytown	0			0			0		
Stamullen	11	2	0	12	0	0	11	1	1
From 10,001 to 15,000 PE									
Trim	12	0	0	12	0	0	12	0	0
From 15,001 to 50,000 PE									
Navan	12	0	0	12	0	0	12	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Meath County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Carlanstown	8	0	0	8	0	0	8	0	0
Donore	10	4	2	10	3	0	10	3	0
Jullianstown	0			0			0		
Kilmainhamwood	6	2	0	6	1	0	6	2	0
Drumconrath	6	0	0	6	0	0	6	0	0
Kentstown	6	3	2	6	2	1	6	2	1
Summerhill	8	4	2	8	3	0	8	5	0
Nobber	6	2	1	6	2	0	6	0	0
Kilmessan	5	1	0	5	0	0	5	1	0
From 1,001 to 1,999 PE									
Oldcastle	11	1	1	11	1	0	11	1	0
Slane	9	0	0	9	0	0	9	0	0
Longwood	11	4	2	11	0	0	11	5	1
Kildalkey	7	3	2	7	3	0	7	4	1
From 2,000 to 10,000 PE									
Dunshaughlin	22	1	1	22	1	0	22	4	0
Kells	10	0	0	10	0	0	10	1	0
Athboy	11	5	0	11	2	0	11	4	0
Duleek	13	7	1	13	4	0	13	6	1
Laytown	0			0			0		
Stamullen	12	0	0	12	0	0	12	0	0
Johnstown Bridge	6	0	0	6	0	0	6	0	0
Ballivor	10	2	0	10	0	0	10	1	0
From 10,001 to 15,000 PE									
Trim	12	0	0	12	0	0	12	0	0
From 15,001 to 50,000 PE									
Navan	12	0	0	12	0	0	12	0	0

Monaghan County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballybay	4,528	Freshwater(River)	No	Secondary treatment only
Carrickmacross	12,087	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Castleblayney	12,920	Freshwater(Lake)	Yes	Secondary treatment with nutrient reduction
Clones	3,893	Freshwater(River)	No	Secondary treatment only
Emyvale	764	Freshwater(River)	No	Secondary treatment only
Glaslough	966	Freshwater(River)	No	Secondary treatment only
Inniskeen	968	Freshwater(River)	Yes	Secondary treatment only
Monaghan	30,497	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Newbliss	1,056	Freshwater(River)	No	Secondary treatment only
Rockorry	916	Freshwater(River)	No	Primary treatment only
Scotstown	528	Freshwater(River)	Yes	Secondary treatment only
Smithboro	1,466	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Monaghan County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Smithboro	11	0	0	11	0	0	11	0	0
Inniskeen	12	0	0	12	0	0	12	1	0
Glaslough	11	3	3	12	3	0	11	1	0
Scotstown	8	1	0	9	0	0	7	1	0
Emyvale	10	7	3	10	3	0	10	4	0
From 1,001 to 1,999 PE									
Newbliss	11	10	8	11	4	0	11	4	0
From 2,000 to 10,000 PE									
Clones	11	6	0	11	0	0	11	1	0
Ballybay	11	2	0	11	0	0	11	0	0
From 10,001 to 15,000 PE									
Castleblayney	12	0	0	12	0	0	12	0	0
Carrickmacross	12	0	0	12	0	0	12	0	0
From 15,001 to 50,000 PE									
Monaghan	12	0	0	12	0	0	12	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Monaghan County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Inniskeen	12	0	0	12	1	0	12	0	0
Glaslough	6	0	0	6	0	0	5	1	0
Emyvale	4	2	0	4	0	0	4	0	0
Scotstown	6	0	0	6	0	0	6	0	0
Smithboro	7	1	1	12	1	0	12	1	0
From 1,001 to 1,999 PE									
Newbliss	7	2	0	15	3	1	15	3	0
From 2,000 to 10,000 PE									
Ballybay	10	0	0	13	0	0	13	0	0
Clones	8	1	0	13	0	0	13	0	0
From 10,001 to 15,000 PE									
Castleblayney	12	0	0	12	0	0	12	0	0
Carrickmacross	12	0	0	12	0	0	12	0	0
From 15,001 to 50,000 PE									
Monaghan	12	0	0	12	0	0	12	1	0

North Tipperary County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballina	2,500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Borrisokane	700	Freshwater(River)	Yes	Secondary treatment only
Borrisoleigh	1,000	Freshwater(River)	Yes	Secondary treatment only
Cloughjordan	500	Freshwater(River)	Yes	Secondary treatment only
Holycross	500	Freshwater(River)	Yes	Secondary treatment only
Littleton	700	Freshwater(River)	No	Secondary treatment only
Nenagh	18,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Newport	700	Freshwater(River)	No	Secondary treatment only
Roscrea	14,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Templemore	5,000	Freshwater(River)	Yes	Secondary treatment only
Thurles	10,600	Freshwater(River)	Yes	Secondary treatment only
Twomile Borris	600	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (North Tipperary County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Holycross	6	0	0	6	0	0	6	0	0
Newport	6	0	0	6	0	0	6	0	0
Twomile Borris	3	0	0	4	0	0	4	0	0
Borrisokane	4	0	0	4	0	0	4	0	0
Borrisoleigh	11	2	1	12	2	1	12	6	2
Littleton	6	0	0	6	0	0	6	0	0
From 2,000 to 10,000 PE									
Ballina	13	0	0	13	0	0	13	0	0
Templemore	11	7	3	12	6	0	12	10	0
From 10,001 to 15,000 PE									
Thurles	11	2	0	12	4	2	12	4	2
Roscrea	12	0	0	12	0	0	12	4	0
Nenagh	12	0	0	12	0	0	12	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (North Tipperary County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Holycross	6	0	0	6	0	0	6	0	0
Newport	5	0	0	5	0	0	5	0	0
Borrisokane	12	0	0	12	0	0	12	0	0
Borrisoleigh	12	6	3	12	4	1	12	6	1
Twomile Borris	12	0	0	12	0	0	12	1	1
Littleton	6	0	0	6	0	0	6	1	1
From 2,000 to 10,000 PE									
Templemore	12	10	5	12	5	0	12	10	0
Ballina	12	0	0	12	0	0	12	0	0
From 10,001 to 15,000 PE									
Roscrea	12	0	0	12	0	0	12	0	0
Thurles	12	0	0	12	1	0	12	0	0
Nenagh	12	0	0	12	0	0	12	0	0

Offaly County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballinagar	527	Freshwater(River)	No	Secondary treatment only
Banagher	1,553	Freshwater(River)	Yes	Secondary treatment only
Birr	7,659	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Clara	3,500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Cloghan	600	Freshwater(River)	Yes	Secondary treatment only
Daingean	850	Freshwater(River)	No	Secondary treatment only
Edenderry	7,700	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Ferbane	1,600	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Kilcormac	1,480	Freshwater(River)	Yes	Secondary treatment only
Mucklagh	750	Freshwater(River)	No	Secondary treatment only
Rhode	976	Freshwater(River)	No	Primary treatment only
Shinrone	500	Freshwater(River)	No	Secondary treatment only
Tullamore	20,000	Freshwater(River)	Yes	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Offaly County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Mucklagh	8	8	2	8	2	0	8	8	0
Cloghan	10	0	0	10	0	0	10	0	0
Daingean	6	0	0	6	0	0	6	0	0
Shinrone	7	1	1	7	1	0	7	1	0
From 1,001 to 1,999 PE									
Banagher	13	0	0	13	0	0	13	0	0
From 2,000 to 10,000 PE									
Birr	13	0	0	13	0	0	13	0	0
Clara	2	2	2	2	2	2	2	2	2
Edenderry	16	0	0	16	0	0	16	0	0
Kilcormac	5	0	0	5	0	0	5	0	0
Ferbane	5	5	5	5	5	5	5	5	5
From 15,001 to 50,000 PE									
Tullamore	13	1	0	13	0	0	13	1	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants

(Offaly County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Shinrone	6	0	0	6	0	0	6	1	0
Cloghan	8	0	0	8	0	0	8	1	0
Mucklagh	12	10	6	12	9	1	12	10	5
Daingean	8	0	0	8	0	0	8	0	0
From 1,001 to 1,999 PE									
Banagher	9	0	0	9	0	0	9	0	0
From 2,000 to 10,000 PE									
Kilcormac	4	1	0	4	0	0	4	2	0
Edenderry	11	0	0	11	0	0	11	1	0
Birr	10	0	0	10	0	0	10	1	0
Ferbane	5	2	1	5	2	0	5	3	2
Clara	6	1	1	6	1	1	6	1	1
From 15,001 to 50,000 PE									
Tullamore	12	2	0	12	1	0	12	3	0

Roscommon County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballaghaderreen	2,067	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Ballinlough	817	Freshwater(River)	No	Secondary treatment with nutrient reduction
Boyle	7,117	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Castlerea	3,411	Freshwater(River)	Yes	Secondary treatment only
Elphin	1,150	Freshwater(River)	Yes	Secondary treatment only
Frenchpark	705	Freshwater(River)	Yes	Secondary treatment only
Knockcroghery	550	Freshwater(River)	Yes	Secondary treatment only
Monksland	13,833	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Roscommon	13,833	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Strokestown	1,000	Freshwater(River)	Yes	Secondary treatment only
Tarmonbarry	600	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Roscommon County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Elphin	11	2	0	12	2	0	11	3	0
Frenchpark	11	11	11	11	10	7	12	11	7
Ballyleague	5	0	0	5	0	0	5	0	0
Ballinlough	8	1	0	7	1	0	8	3	0
Strokestown	11	1	0	11	0	0	11	1	0
Tarmonbarry	5	2	2	5	2	0	4	3	0
From 2,000 to 10,000 PE									
Monksland	12	0	0	12	0	0	12	1	0
Ballaghaderreen	11	1	1	11	1	1	12	1	0
Castlerea	11	4	2	12	3	0	12	3	0
Boyle	11	1	1	11	0	0	11	0	0
Roscommon	11	1	1	12	1	1	11	1	1

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Roscommon County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Elphin	12	1	0	12	1	0	12	3	1
Tarmonbarry	5	3	2	5	3	1	5	5	4
Frenchpark	12	12	8	12	10	4	12	12	5
Ballinlough	19	0	0	19	1	0	19	4	2
Strokestown	12	1	0	12	0	0	12	1	0
From 2,000 to 10,000 PE									
Roscommon	12	0	0	12	0	0	12	0	0
Boyle	12	1	0	12	1	0	12	2	1
Castlerea	12	1	0	12	2	0	12	2	2
Monksland	12	0	0	12	0	0	12	0	0
Ballaghaderreen	12	0	0	12	0	0	12	0	0

Sligo County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ballisadare	1,702	Estuarine	No	No treatment
Ballymote	2,390	Freshwater(River)	No	Secondary treatment only
Cliffoney	710	Freshwater(River)	No	Secondary treatment only
Collooney	1,058	Freshwater(River)	No	Secondary treatment only
Easkey	547	Freshwater(River)	No	Secondary treatment only
Enniscrone	2,447	Coastal Water	No	Secondary treatment only
Grange	558	Freshwater(River)	No	Secondary treatment only
Mullaghmore	1,182	Coastal Water	No	Primary treatment only
Rosses Point	1,409	Coastal Water	No	Primary treatment only
Sligo	20,000	Coastal Water	No	No treatment
Strandhill	1,728	Coastal Water	No	Secondary treatment only
Tubbercurry	2,154	Freshwater(River)	No	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Sligo County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gurteen [19]	2	1	0	4	0	0	4	0	0
Riverstown [20]	2	2	1	2	2	1	2	2	0
From 1,001 to 1,999 PE									
Tubbercurry	8	2	0	10	1	0	10	0	0
Enniscrone	10	4	3	10	2	2	12	6	3
Collooney	6	0	0	6	0	0	7	0	0
Strandhill	5	4	3	5	3	0	6	5	1
From 2,000 to 10,000 PE									
Ballymote	9	6	2	12	6	2	10	8	3

[19] The agglomeration of Gurteen has a reported population equivalent of 438.

[20] The agglomeration of Riverstown has a reported population equivalent of 357.

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Sligo County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gurteen	3	0	0	3	1	1	3	1	0
Riverstown	2	0	0	2	0	0	2	0	0
From 1,001 to 1,999 PE									
Tubbercurry	11	1	0	10	0	0	11	1	0
Strandhill	3	1	1	5	4	1	5	5	2
Enniscrone	9	7	5	12	6	4	12	7	3
Collooney	5	0	0	5	1	0	5	0	0
From 2,000 to 10,000 PE									
Ballymote	11	10	8	11	9	3	11	10	7

South Tipperary County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ardfinnan	572	Freshwater(River)	Yes	Primary treatment only
Ballyclerihan	500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Cahir	3,000	Freshwater(River)	Yes	Secondary treatment only
Cappawhite	533	Freshwater(River)	Yes	Primary treatment only
Carrick-on-Suir	6,000	Freshwater(River)	Yes	Preliminary treatment only
Cashel	2,280	Freshwater(River)	Yes	Secondary treatment only
Clonmel	40,000	Freshwater(River)	Yes	Secondary treatment only
Fethard	1,920	Freshwater(River)	Yes	Secondary treatment only
Killenaule	864	Freshwater(River)	Yes	Secondary treatment only
Limerick Junction	600	Freshwater(River)	No	Secondary treatment only
Tipperary Town	4,750	Freshwater(River)	Yes	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (South Tipperary County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Killenaule	8	0	0	8	0	0	8	0	0
From 1,001 to 1,999 PE									
Fethard	7	2	0	7	0	0	7	3	0
From 2,000 to 10,000 PE									
Tipperary	13	0	0	13	0	0	13	0	0
Cahir	6	0	0	6	0	0	6	0	0
Cashel	8	3	0	8	1	0	8	4	0
From 15,001 to 50,000 PE									
Clonmel	39	0	0	39	0	0	39	1	1

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (South Tipperary County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballyclerihan	14	1	1	14	1	0	14	2	1
Killenaule	19	0	0	19	0	0	19	0	0
Limerick Junction	18	4	3	18	3	1	18	5	1
From 1,001 to 1,999 PE									
Fethard	19	0	0	19	0	0	19	0	0
From 2,000 to 10,000 PE									
Cahir	23	0	0	23	0	0	23	0	0
Cashel	24	3	0	24	0	0	24	3	0
Tipperary	13	0	0	13	0	0	13	2	0
From 15,001 to 50,000 PE									
Clonmel	23	0	0	23	0	0	23	0	0

Waterford City Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Viewmount	3,500	Estuarine	No	Primary treatment only
Waterford city	140,000	Estuarine	No	Preliminary treatment only
Williamstown,Grantstown	3,000	Estuarine	No	Primary treatment only

Waterford City Treatment plant is under construction and will incorporate all of the above listed agglomerations.

Waterford County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Ardmore	500	Coastal Water	No	No Treatment
Ballinroad	800	Estuarine	No	Secondary treatment only
Cappoquin	950	Freshwater(River)	No	Primary treatment only
Dungarvan	10,000	Estuarine	No	Preliminary treatment only
Dunmore East	1,600	Coastal Water	No	Preliminary treatment only
Kilmacthomas	600	Freshwater(River)	No	Primary treatment only
Lismore	1,350	Freshwater(River)	Yes	Secondary treatment only
Portlaw	1,250	Freshwater(River)	Yes	Secondary treatment only
Ring/Helvick/Ballinagoul	600	Coastal Water	No	Primary treatment only
Stradbally	500	Estuarine	No	Primary treatment only
Tallow	1,200	Freshwater(River)	No	Primary treatment only
Tramore	15,300	Coastal Water	No	Preliminary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Waterford County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Balinroad	0			4	0	0	4	2	1
Lismore	0	0	0	3	1	0	3	1	0
From 1,000 to 1,999 PE									
Portlaw	0	0	0	3	3	1	3	3	3

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Waterford County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Balinroad	3	0	0	3	0	0	3	0	0
Lismore	3	0	0	3	0	0	3	0	0
From 1,001 to 1,999 PE									
Portlaw	2	2	2	2	2	0	2	2	2

Westmeath County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Athlone	22,500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Ballynacarrigy	500	Freshwater(River)	No	Secondary treatment only
Castlepollard	1,800	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Clonmellon	500	Freshwater(River)	No	Secondary treatment only
Delvin	750	Freshwater(River)	Yes	Secondary treatment only
Kilbeggan	2,000	Freshwater(River)	Yes	Secondary treatment only
Killucan	700	Freshwater(River)	Yes	Secondary treatment only
Kinnegad	2,500	Freshwater(River)	Yes	Secondary treatment only
Moate	5,000	Freshwater(River)	Yes	Secondary treatment only
Mullingar	21,500	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Rochfortbridge	2,700	Freshwater(River)	No	Secondary treatment only
Tyrellspass	1,400	Freshwater(River)	Yes	Secondary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Westmeath County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Ballynacarrigy	11	0	0	0	0	0	10	0	0
Tyrellspass	15	0	0	15	0	0	12	2	0
Clonmellon	20	8	4	0	0	0	20	3	0
Killucan	18	3	0	0	0	0	18	2	0
Delvin	15	0	0	0	0	0	15	0	0
From 1,001 to 1,999 PE									
Castlepollard	17	0	0	0	0	0	16	0	0
From 2,000 to 10,000 PE									
Rochfortbridge	7	3	1	7	2	0	6	1	0
Kinnegad	19	0	0	0	0	0	19	0	0
Killbeggan	13	0	0	13	0	0	13	0	0
Moate	11	0	0	11	0	0	10	0	0
From 15,001 to 50,000 PE									
Athlone	15	0	0	16	0	0	14	0	0
Mullingar	12	0	0	12	0	0	12	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Westmeath County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Killucan	24	0	0	0	0	0	22	3	0
Delvin	9	0	0	0	0	0	9	0	0
Tyrellspass	10	1	0	11	0	0	11	1	0
Clonmellon	12	2	0	0	0	0	12	0	0
Ballynacarrigy	17	2	0	0	0	0	16	0	0
From 1,001 to 1,999 PE									
Castlepollard	17	1	0	0	0	0	15	1	0
From 2,000 to 10,000 PE									
Rochfortbridge	12	5	3	13	4	1	13	4	1
Killbeggan	11	0	0	11	0	0	11	0	0
Moate	11	0	0	11	0	0	11	0	0
Kinnegad	15	0	0	0	0	0	15	0	0
From 15,001 to 50,000 PE									
Mullingar	23	0	0	12	0	0	23	0	0
Athlone	12	0	0	12	0	0	12	0	0

Wexford County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Adamstown	535	Freshwater(River)	No	Secondary treatment only
Ballymurn	600	Freshwater(River)	Yes	Secondary treatment with nutrient reduction
Blackwater	1,200	Freshwater(River)	No	Secondary treatment only
Bridgetown	500	Freshwater(River)	Yes	Secondary treatment only
Bunclody	1,800	Freshwater(River)	Yes	Primary treatment only
Campile	500	Estuarine	No	Primary treatment only
Carrig-on-Bannow	600	Estuarine	No	Secondary treatment with nutrient reduction
Castlebridge	1,000	Estuarine	Yes	Secondary treatment only
Clonroche	1,000	Freshwater(River)	No	Secondary treatment only
Courtown/Riverchapel	10,000	Coastal Water	No	Secondary treatment only
Duncannon	600	Coastal Water	No	No treatment
Enniscorthy	8,500	Estuarine	Yes	Secondary treatment only
Ferns	1,200	Freshwater(River)	Yes	Secondary treatment only
Fetherd-on-Sea	1,000	Estuarine	No	Primary treatment only
Gorey	6,500	Freshwater(River)	No	Secondary treatment only
Kilmore Quay	2,000	Coastal Water	No	No treatment
Kilmuckridge	1,000	Freshwater(River)	No	Secondary treatment only
New Ross	10,000	Estuarine	Yes	No treatment
Piercetown	600	Freshwater(River)	No	Secondary treatment with nutrient reduction
Rosslare Harbour	3,000	Coastal Water	No	No treatment
Rosslare Strand	4,000	Coastal Water	No	Secondary treatment only
Taghmon	1,000	Freshwater(River)	No	Secondary treatment only
Wexford town	17,000	Estuarine	No	Secondary treatment with nutrient reduction

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Wexford County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Bridgetown	12	2	1	12	1	1	12	1	0
Piercetown	13	0	0	12	0	0	13	0	0
Adamstown	12	0	0	12	2	0	12	0	0
Taghmon	12	11	10	12	10	5	12	11	0
Clonroche	12	1	1	12	2	1	12	2	1
From 1,001 to 1,999 PE									
Castlebridge	13	0	0	12	0	0	12	0	0
Ferns	12	0	0	12	1	0	12	0	0
From 2,000 to 10,000 PE									
Kilmuckridge	13	0	0	13	0	0	12	2	0
Blackwater	25	0	0	25	0	0	24	4	0
Gorey	12	0	0	12	0	0	12	1	0
Rosslare Strand	14	2	2	14	1	0	14	1	0
From 10,001 to 15,000 PE									
Courtown/Riverchapel	13	0	0	12	0	0	12	1	0
Enniscorthy	13	0	0	13	0	0	13	0	0
From 15,001 to 50,000 PE									
Wexford town	23	11	11	22	11	10	23	11	11

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Wexford County Council)

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Piercetown	6	1	1	6	0	0	6	0	0
Ballymurn	10	0	0	10	0	0	9	0	0
Bridgetown	7	6	1	7	2	0	7	4	0
Adamstown	5	0	0	5	0	0	5	0	0
Carrig-onBannow	6	0	0	6	0	0	5	0	0
Taghmon	6	6	6	6	6	4	6	6	3
Clonroche	6	1	0	6	0	0	6	1	0
From 1,001 to 1,999 PE									
Ferns	3	0	0	5	0	0	5	0	0
Castlebridge	9	2	0	9	0	0	9	3	0
From 2,000 to 10,000 PE									
Rosslare Strand	6	6	3	6	1	0	6	6	2
Blackwater	8	1	0	8	1	0	8	5	0
Kilmuckridge	8	3	1	9	1	0	9	3	1
Gorey	8	0	0	9	0	0	9	4	0
From 10,001 to 15,000 PE									
Courtown/Riverchapel	10	0	0	11	0	0	10	0	0
Enniscorthy	12	3	0	12	0	0	12	1	0
Wexford	12	0	0	12	0	0	12	0	0

Wicklow County Council

List of Agglomerations, Discharge Locations and level of Treatment in 2005.

Agglomeration	PE	Discharge to	Sensitive*	Present Treatment
Arklow	15,000	Coastal Water	No	No treatment
Ashford	1,090	Freshwater(River)	No	Secondary treatment only
Aughrim	1,050	Freshwater(River)	No	Secondary treatment only
Avoca	500	Freshwater(River)	No	Primary treatment only
Baltinglass	3,000	Freshwater(River)	Yes	Secondary treatment only
Blessington	4,500	Freshwater(Lake)	No	Secondary treatment only
Bray	40,000	Coastal Water	No	Preliminary treatment only
Carnew	1,800	Freshwater(River)	No	Secondary treatment only
Dunlavin Logatryna	500	Freshwater(River)	No	Secondary treatment only
Dunlavin Milltown	700	Freshwater(River)	No	Secondary treatment only
Enniskerry	1,800	Freshwater(River)	No	Secondary treatment only
Greystones	25,000	Coastal Water	No	Secondary treatment only
Kilcoole	2,400	Freshwater(River)	No	Secondary treatment only
Kilpedder	600	Freshwater(River)	No	Secondary treatment only
Laragh	500	Freshwater(River)	No	Secondary treatment only
Newcastle	1,000	Freshwater(River)	No	Secondary treatment only
Newtownmountkennedy	2,500	Freshwater(River)	No	Secondary treatment only
Rathdrum	1,500	Freshwater(River)	No	Primary treatment only
Rathnew	1,530	Freshwater(River)	No	Secondary treatment only
Redcross	1,040	Coastal Water	No	Secondary treatment only
Roundwood	600	Freshwater(River)	No	Secondary treatment only
Shillelagh	550	Coastal Water	No	Secondary treatment only
Tinahely	1,000	Freshwater(River)	No	Secondary treatment only
Wicklow	8,500	Coastal Water	No	Preliminary treatment only

2004 – Effluent Quality from Secondary Waste Water Treatment Plants (Wicklow County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Roundwood	2	1	1	3	2	0	3	2	0
Kilpedder	3	2	1	3	1	0	3	2	1
Redcross	3	2	2	3	2	1	3	3	1
Dunlavin Milltown	3	3	3	3	2	2	3	3	3
Laragh	2	2	2	2	2	2	2	2	2
Newcastle	3	1	0	3	0	0	3	0	0
From 1,001 to 1,999 PE									
Rathnew	2	2	2	3	3	3	3	3	2
Aughrim	3	0	0	3	0	0	3	0	0
Ashford	4	2	0	4	0	0	4	1	0
Carnew	3	0	0	3	0	0	3	0	0
Enniskerry	4	0	0	4	0	0	4	0	0
From 2,000 to 10,000 PE									
Kilcoole	4	0	0	4	0	0	4	1	0
Baltinglass	3	0	0	3	0	0	3	0	0
Blessington	4	3	0	4	1	0	4	2	0
From 15,001 to 50,000 PE									
Greystones	14	1	0	14	0	0	14	0	0

2005 – Effluent Quality from Secondary Waste Water Treatment Plants (Wicklow County Council)

Plant Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Dunlavin Milltown	2	2	2	2	2	2	2	2	2
Roundwood	3	3	1	3	2	1	3	3	1
Shillelagh	4	3	1	4	2	0	4	2	0
Kilpedder	3	0	0	3	0	0	3	1	0
Laragh	3	3	3	3	3	2	3	3	3
Newcastle	3	0	0	2	1	0	3	0	0
Redcross	3	2	1	3	1	1	3	1	0
From 1,001 to 1,999 PE									
Carnew	4	0	0	4	0	0	4	0	0
Aughrim	3	0	0	3	0	0	3	0	0
Rathnew	4	4	4	4	3	3	4	4	2
Tinahealy	4	0	0	4	0	0	4	2	0
Ashford	5	0	0	4	0	0	5	1	0
Enniskerry	3	0	0	3	0	0	3	0	0
From 2,000 to 10,000 PE									
Baltinglass	4	0	0	4	0	0	4	0	0
Kilcoole	6	0	0	5	0	0	6	0	0
Blessington	38	22	3	56	10	0	48	12	0
From 15,001 to 50,000 PE									
Greystones	12	1	1	12	0	0	12	1	0

Appendix B: Schedules to the Urban Waste Water Treatment Regulations, 2001 & 2004

URBAN WASTE WATER TREATMENT REGULATIONS, 2001, S.I. NO 254 of 2001

First Schedule

Collecting Systems

A collection 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, 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 concentration or for the percentage of reduction shall apply.

Parameters	Concentration	Minimum percentage of reduction ([1])	Reference method of measurement
Biochemical oxygen demand (BOD_5 at 20^o C) without nitrification ([2])	25 mg/l O_2	70 - 90	Homogenised, unfiltered, undecanted sample. Determination of dissolved oxygen before and after five-day incubation at 20^o C ± 1^o C, in complete darkness. Addition of a nitrification inhibitor.
Chemical oxygen demand (COD)	125 mg/l O_2	75	Homogenised, unfiltered, undecanted sample. Potassium dichromate
Total suspended solids	35 mg/l	90	- Filtering of a representative sample through a 0.45µm 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 least 105°C and weighing

([1]) Reduction in relation to the load of influent.

([2]) 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_5 and the substitute parameter.

Part II

Requirements for discharges from urban waste water treatment plants to sensitive area which are subject to eutrophication. One or both parameters may be applied depending on the local situation. The values for concentration or for the percentage shall apply.

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

([1]) Reduction in relation to the load of the influent.

([2]) Total nitrogen means: the sum of total Kjeldahl-nitrogen (organic N + NH_3), nitrate (NO_3) - nitrogen and nitrite (NO_2) - nitrogen.

(3) 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 12^0C. The conditions concerning temperature could be replaced by a limitation on the time of operation to take account of regional climatic conditions.

Third Schedule

Sensitive Areas

Part 1.

Receiving water	Extent of Sensitive Area
River Boyne Co. Meath	6.5 km section downstream of sewage treatment plant outfall at Blackcastle, Navan, Co. Meath.
River Camlin Co. Longford	From sewage treatment plant at Longford to entry into the River Shannon.
River Castlebar Co. Mayo	Downstream of sewage treatment plant outfall at Knockthomas to entry into Lough Cullin.
River Liffey	Downstream of Osberstown sewage treatment plant to Leixlip reservoir, Co. Kildare.
River Nenagh Co. Tipperary	Downstream of sewage treatment plant outfall in Nenagh to entry into Lough Derg.
River Tullamore Co. Offaly	0.5 km section downstream of sewage treatment plant outfall in Tullamore.
Lough Derg on the River Shannon	Whole lake.
Lough Leane Co. Kerry	Whole lake.
Lough Oughter Co. Cavan	Whole lake.
Lough Ree on the River Shannon	Whole lake.

Third Schedule

Sensitive Areas

Part 2

Receiving water	Extent of Sensitive Area
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 Portarlington 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 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.
Lough Ennell	County Westmeath.
Lough Muckno	County Monaghan.
Lough Monalty	County Monaghan.

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

Third Schedule

Sensitive Areas

Part 2 (cont.)

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.

Amendment to the above Schedule

(Urban Waste Water Treatment (Amendment) Regulations, 2004)

Insertion into Part 2 of the Third Schedule of the following;

Lee Estuary/Lough Mahon	From the salmon weir (downstream of the waterworks intake) to Monkstown (excluding North Channel at Great Island).
Owennacurra Estuary/North Channel	Owennacurra Estuary/North Channel – from North Channel (Great Island) upstream of Marloag Point including Owennacurra Estuary upstream to Dungourney river confluence.

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 to:

- protect the health of staff working in collecting systems and treatment plants;
- ensure that collecting systems, waste water treatment plant and associated equipment are not damaged;
- ensure that the operation of a waste water treatment plant and the treatment of sludge is not impeded;
- ensure that the discharges from treatment plants do not adversely affect the environment or prevent receiving waters from complying with other Community Directives;
- ensure that the sludge can be disposed of safely in an environmentally acceptable manner.

Fifth Schedule

Reference methods for emissions and evaluation of results

1. Local authorities shall ensure that a monitoring method is required 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 in these regulations.

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.

Population Equivalent	**Number of samples**
2,000-9,999	12 samples during the first year. Four samples in subsequent years, if it can be shown that the waste water discharged during the first year complies with the Regulations.; if one sample of the four fails, 12 samples must be taken in the year that follows.
10,000-49,999	12
50,000 or over	24

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:

(a) 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;

(b) 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, deviation of up to 150% may be accepted;

(c) 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.

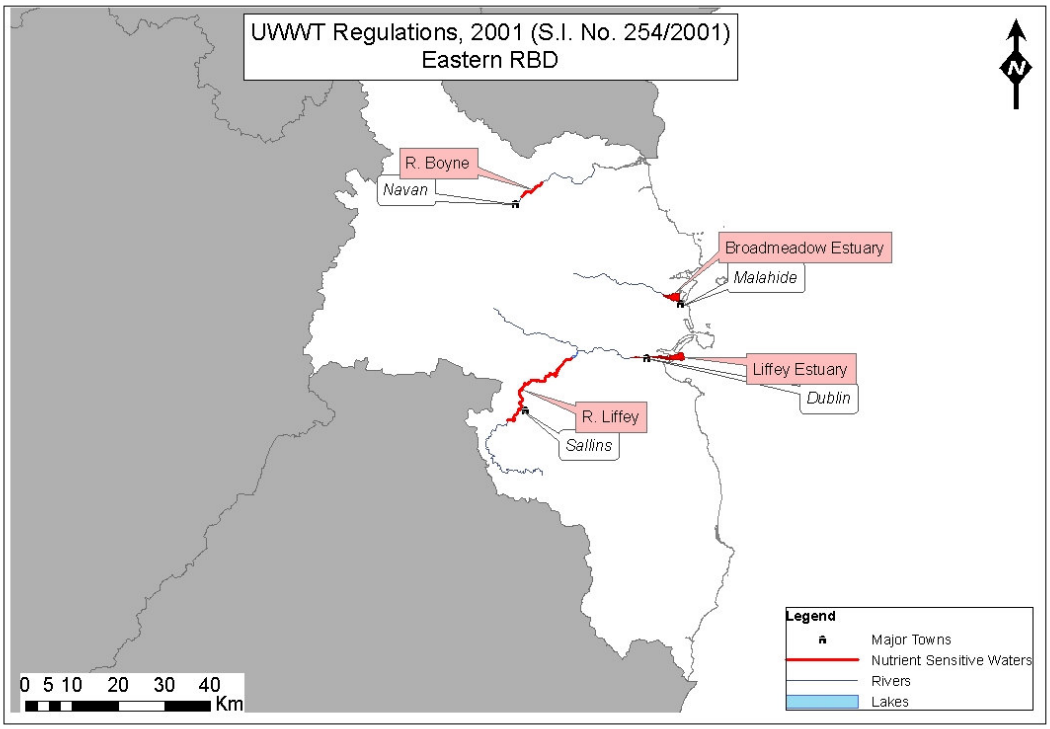
5. Extreme values for the water quality in question shall not be taken into consideration when they are the result of unusual situations such as those due to heavy rain.

Table

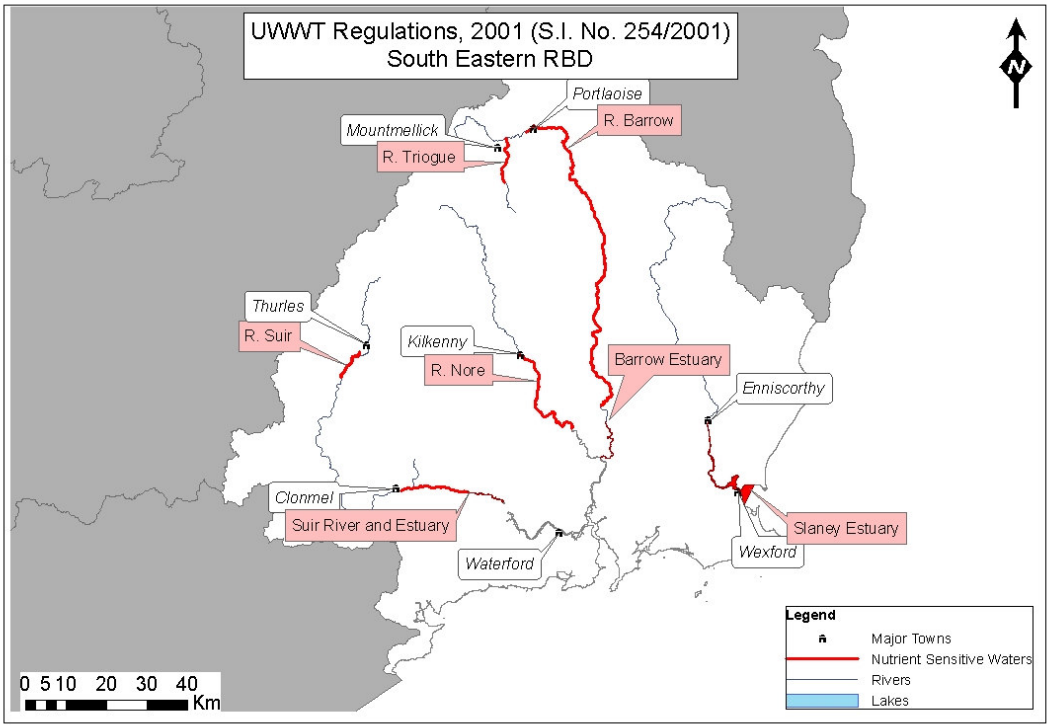
Series of samples taken in any one year	Maximum permitted number of samples which fail to conform
4-7	1
8-16	2
17-28	3
29-40	4
41-53	5
54-67	6
68-81	7
82-95	8
96-110	9
111-125	10
126-140	11
141-155	12
156-171	13
172-187	14
188-203	15
204-219	16
220-235	17
236-251	18
252-268	19
269-284	20
285-300	21
301-317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

Appendix C: Sensitive Areas

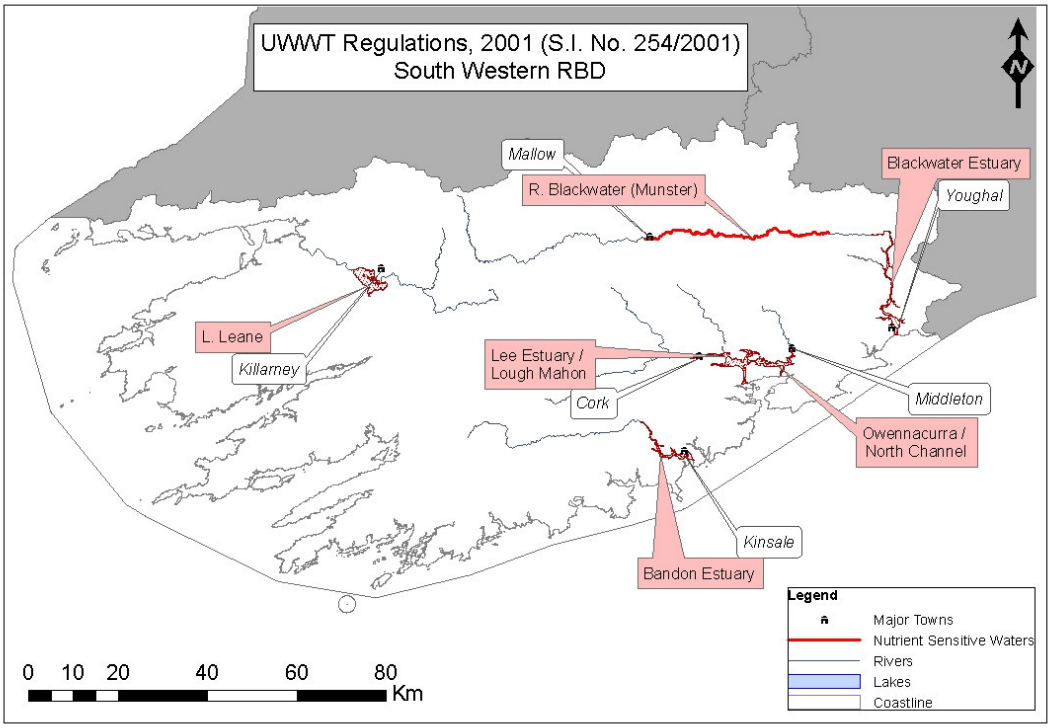
Nutrient Sensitive Waters – Eastern RBD



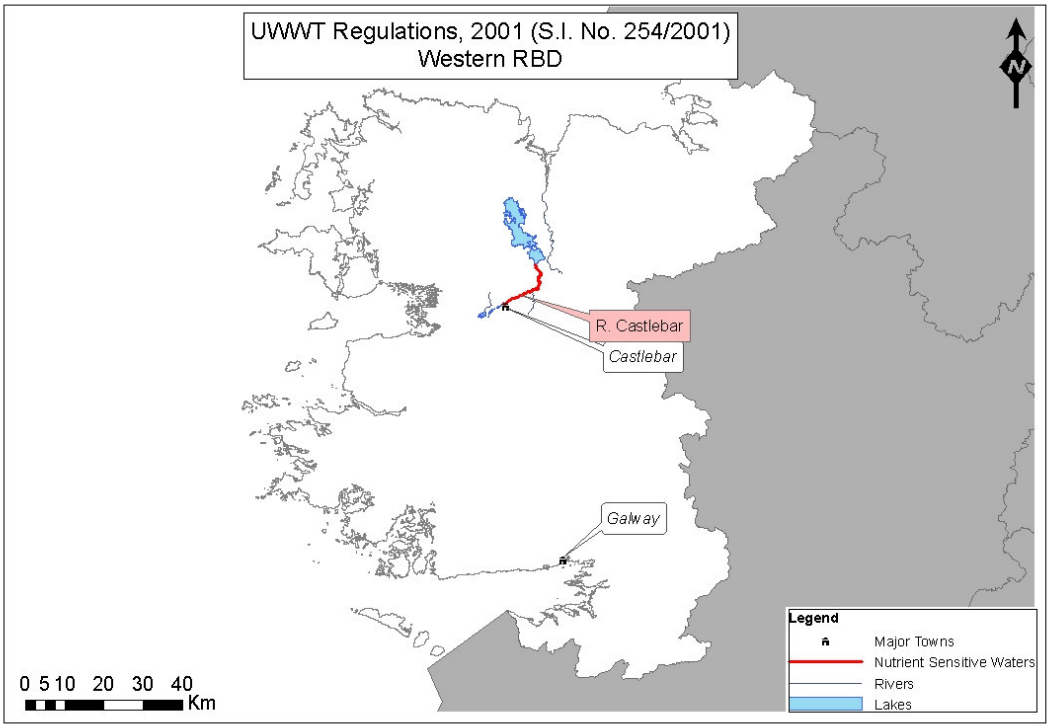
Nutrient Sensitive Waters – South Eastern RBD



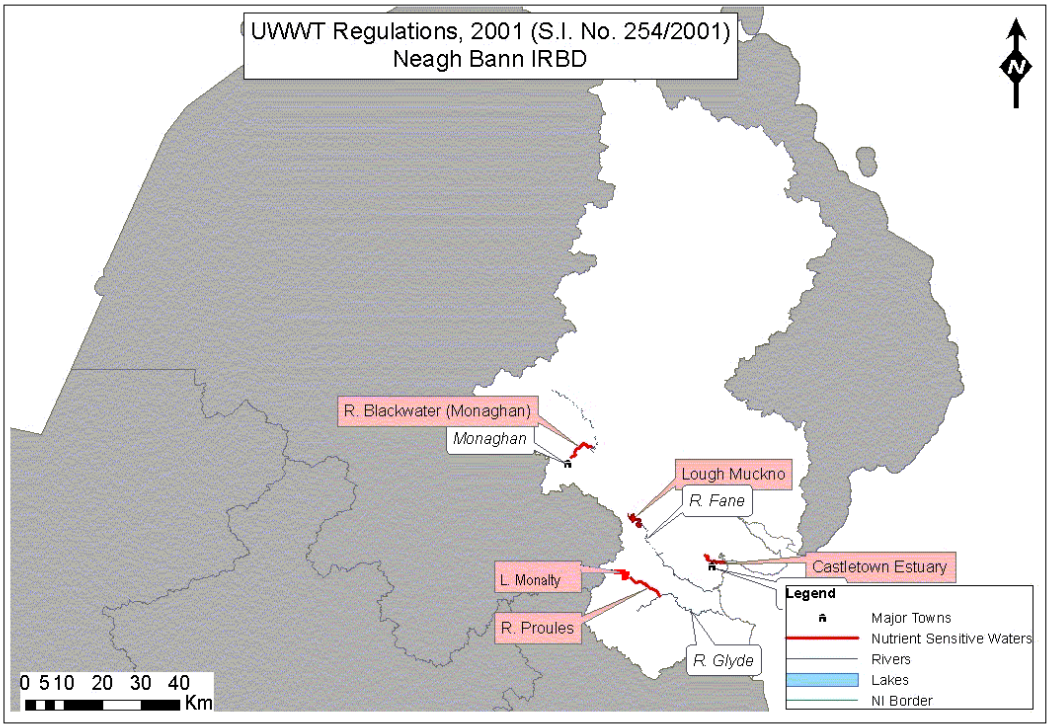
Nutrient Sensitive Waters – South Western RBD



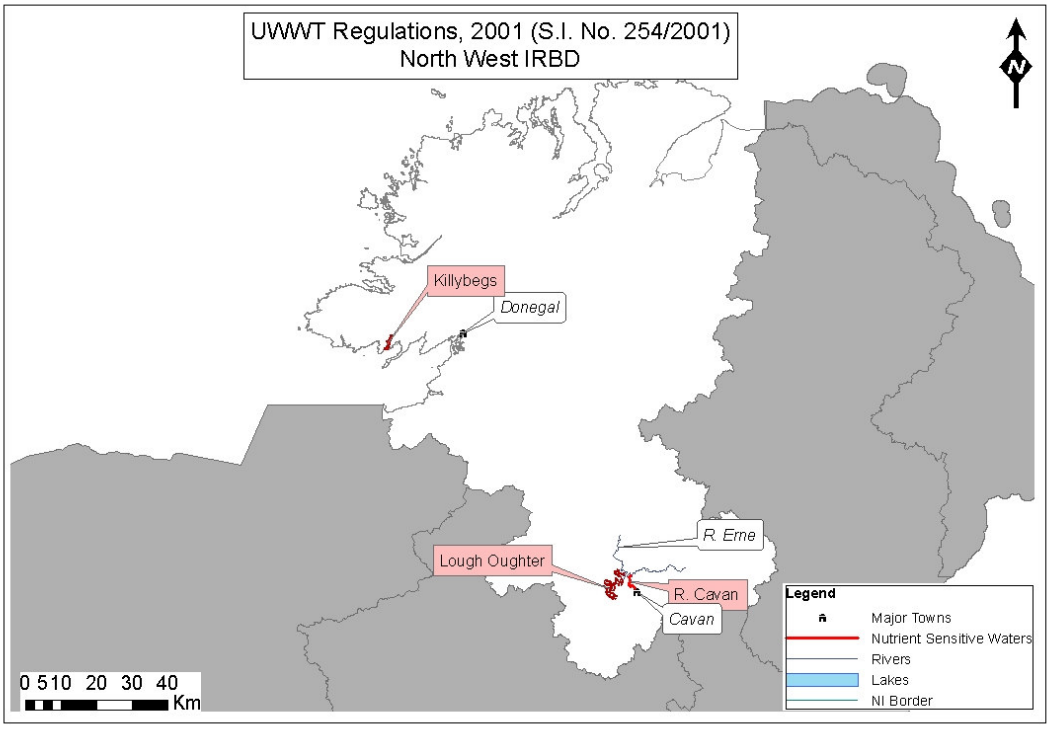
Nutrient Sensitive Waters – Western RBD



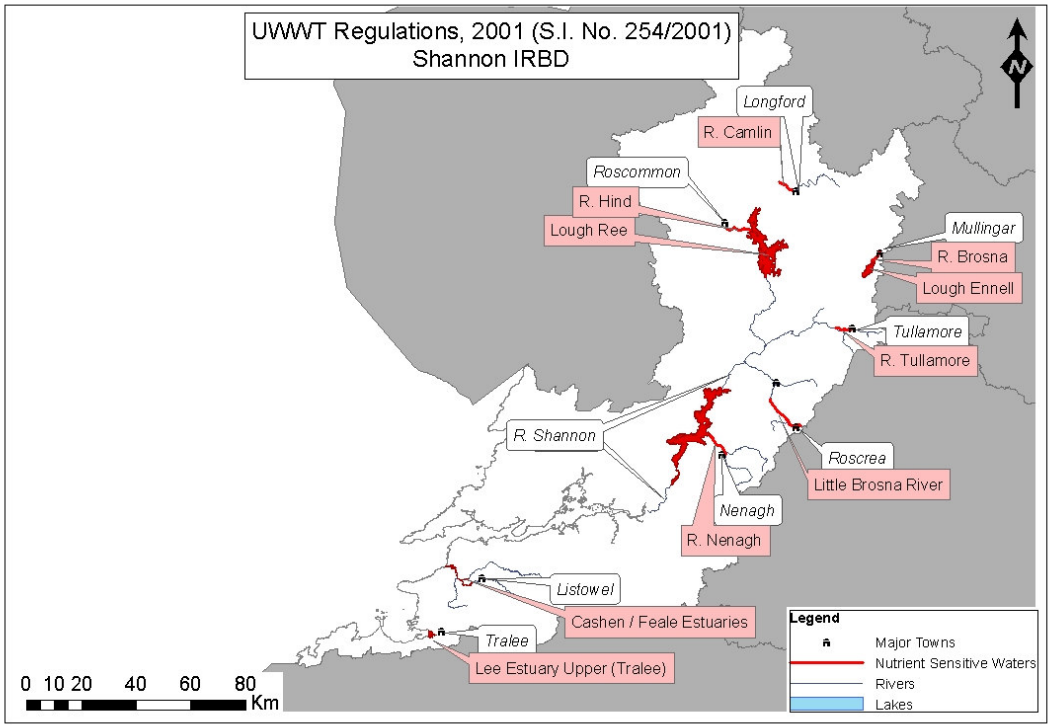
Nutrient Sensitive Waters – Nenagh Bann IRBD



Nutrient Sensitive Waters – North West IRBD



Nutrient Sensitive Waters – Shannon IRBD



Appendix D: Monitoring Requirements

The parameters and concentration limits with which waste water treatment plant discharges are required to comply are set out below. Although concentration limits are the recommended method to be used for calculating compliance, minimum percentage reductions in parametric values are also permitted as an alternative. The approach adopted in Ireland has been based on the use of the concentration limits for determination of compliance.

Emission Limit Values for Discharges to Non-Sensitive Waters.

Parameter	Concentration limit	Minimum percentage reduction
BOD_5	25 mg/l O_2	70-90%
COD	125 mg/l O_2	75%
Total suspended solids	35 mg/l	90%

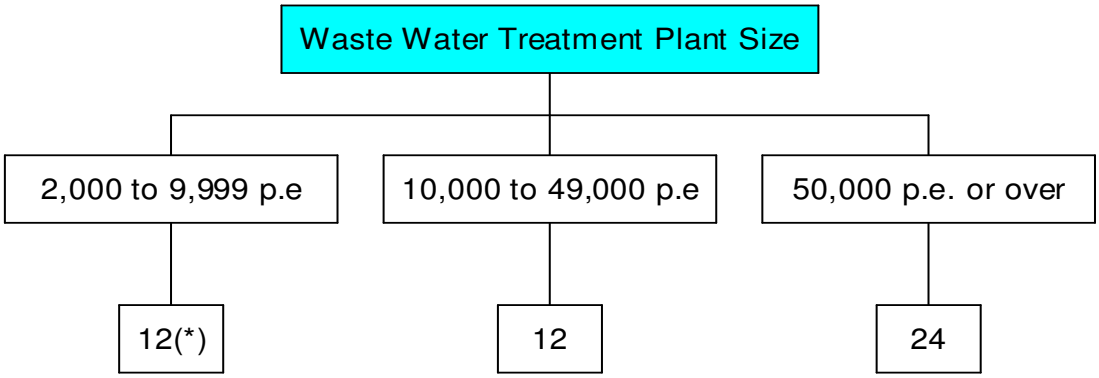
For discharges to sensitive waters a further two parameters are introduced, one or both of which may apply depending on conditions locally. These are outlined below, giving a value for concentration or for the percentage of reduction which applies.

Emission Limit Values for Discharges to Sensitive Waters.

Parameter	Concentration limit (annual mean)	Minimum percentage reduction
Total phosphorus	2 mg/l P (10,000 - 100,000 p.e.) 1 mg/l P (more than 100,000 p.e.)	80%
Total nitrogen	15 mg/l N (10,000 - 100,000 p.e.) 10 mg/l N (more than 100,000 p.e.)	70-80%

The annual sampling frequency is dependent on the size of the treatment plant and the historical compliance record of the treatment plant (for plants between 2,000 and 9,999 p.e). In the 2000/01 report, the Agency recommended that a minimum of 6 samples per year should be taken at all treatment plants whose population equivalent exceeded 500. In addition all treatment plants which serve smaller communities under the responsibility of the local authority either directly or under licence should be included in the annual sampling schedule. The sampling schedule should be designed to monitor the performance of the treatment plant and where necessary, appropriate action should be taken where poor effluent quality is produced, particularly if it affects the quality of the receiving waters.

The Regulations are specific about the type of sampling and analytical technique required to establish compliance for secondary treatment plants and those treatment plants which require nutrient reduction in addition to secondary treatment. Flow proportional or time-based 24-hour samples are required, grab samples are not sufficient to establish compliance. The minimum sampling frequencies are set out in the diagram below.



Mandatory Sampling Frequencies

*4 samples in subsequent years (EPA recommends 6 samples), if it can be shown that the waste water discharged during the first year complies with the provisions of the Regulations; if one of the four fails, 12 samples must be taken in the year that follows.

Article 5 of The Regulations also require local authorities to monitor surface waters which receive discharges from urban waste water treatment plants where it is anticipated that the receiving waters will be significantly affected, with implications for compliance with other Directives.

The Environmental Protection Agency Act, 1992, (Urban Waste Water Treatment) Regulations, 1994: A Handbook on Implementation for Sanitary Authorities provides advice on the monitoring requirements of the 1994 Regulations and can be adopted for use with the 2001 Regulations. This handbook includes analytical recommendations in respect of discharges to both sensitive and non-sensitive areas, the latter being sub-divided into riverine and lake discharges.

In addition to the standards prescribed in the Regulations, sanitary authorities must also have regard to the standards (objectives) outlined in:

- Any relevant Water Quality Management plan;
- Managing Ireland's Rivers and Lakes - A Catchment Based Strategy Against Eutrophication;
- Measures Reports for Phosphorus Regulations, 1998 (S.I. No. 258 of 1998); and,
- Memorandum No.1: Technical Committee on Effluent and Water Quality Standards.

Relevant Directives and National Regulations, which should be consulted to assess the impact of a discharge on the receiving water, are summarised below.

Relevant Directives and National Regulations

Directive	Statutory Instrument
Freshwater Fish Directive (78/659/EEC)	European Communities (Quality of Salmonid Waters) Regulations, 1998.
Shellfish Directive (79/923/EEC)	Quality of Shellfish Waters Regulations, 1994. and Quality of Shellfish Waters (Amendment) Regulations, 2001.
Bathing Water Directive (76/160/EEC)	Quality of Bathing Waters Regulations, 1992, and Quality of Bathing Waters Regulations (Amendment), 1996.
Surface Water Directive (75/440/EEC)	European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water Regulations, 1989.
Dangerous Substances Directive (76/464/EEC)	Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998. and Water Quality (Dangerous Substances) Regulations, 2001.
Nitrates Directive (91/676/EEC)	European Communities(Good Agricultural Practice for Protection of Waters) Regulations, 2006.
*Water Framework Directive (2000/60/EC)	European Communities (Water Policy) Regulations 2003.
Groundwater Directive (80/68/EEC)	Local Government (Water Pollution) (Amendment) Regulations, 1999.

* *The Water Framework Directive represents a major revision of EU water policy and establishes a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. One of the main requirements of the Water Framework Directive is the development of "River Basin Management Plans".*

Appendix E: European Communities (Waste Water Treatment) (Prevention of Odours and Noise) Regulations, 2005.

SCHEDULE

Operation of Waste Water Treatment Plants to avoid causing nuisance through noise or odours

1. A local authority shall maintain a record of all mandatory environmental standards, including those relating to odours and noise, that apply to each waste water treatment plant provided for under any enactment, permission or order.

2. A local authority or its agent shall record all environmental complaints related to the operation of waste water treatment plants.

3. Records shall include:

   - the complainant's name and address,
   - the date of the complaint,
   - the reported date, time, nature and duration of the incident to which the complaint refers,
   - the date of acknowledgement by the authority to the complainant and author,
   - the action taken on foot of the complaint and the results of any such action,
   - the cause of the complaint as determined,
   - details of any response made to the complainant.

4. On request from the Agency, a local authority shall forward copies of all complaint records to the Agency, in a format specified by the Agency, for any specific plant over any specified period.

Appendix F: Part I - V from Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998

Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998, S.I. NO 148 of 1998

SCHEDULE

Part I

Maximum Values for Concentration of Heavy Metals in Soil

Parameters	Maximum Values*	Expression of Results
Cadmium	1	mg/kg of dry matter in a representative sample as defined in Part III of this schedule of soil with a pH of 5-7
Copper	50	
Nickel	30	
Lead	50	
Zinc	150	
Mercury	1	

*Where the pH of the soil is consistently higher than 7, the values may be exceeded by not more than 50%, provided that there is no resulting hazard to human health, the environment, or in particular, ground water.

Part II

Limit Values for Amounts of Heavy Metals Which May be Added Annually to Agricultural Land, Based on a Ten Year Average.

Heavy Metal	Limit Value (kilograms per Hectare per year)
Cadmium	0.05
Copper	7.50
Nickel	3.00
Lead	4.00
Zinc	7.5
Mercury	0.10
Chromium	3.50

Part III

Conditions Applying to soil sampling and analysis

1. A soil analysis shall cover:-

(a) the parameters included in part 1 of the schedule to this schedule, and

(b) pH.

2. Samples taken for analysis shall be representative of the soil on the site and shall be made up by mixing together twenty five core samples taken over each area of five hectares or less used for the same agricultural purpose.

3. (a) Except where sludge is used on grassland, samples shall be taken to a depth of twenty five centimetres or the depth of the surface soil if less, provided that such lesser sampling depth is at least ten centimetres.

(b) where sludge is used on grassland, samples shall be taken to a depth of not more than six centimetres.

4. Where sludge is regularly used in agriculture soil shall be analysed at a minimum frequency of once in ten years.

Part IV

Conditions Applying to Sludge Sampling and Analysis

1. A sludge analysis shall cover:-

(a) the parameters included in part II of this Schedule, and

The following parameters: dry matter, organic matter, pH, nitrogen and phosphorus.

2. Samples of sludge for analysis shall be representative of the sludge production and shall be taken before to the user.

3. Subject to sub-paragraph (a) and (b), sludge other than sludge referred to in paragraph 6 shall be analysed at least once every six months

(a) The frequency of sludge analyses may be reduced to once a year where the results of analyses do not vary significantly over a full year.

(b) The frequency of sludge analyses shall be increased where changes occur in the characteristics of the waste water being treated.

4. Where it is evident, on the basis of analyses, that copper and zinc are either not present or are present only in negligible quantities in the waste water treated by the sewage treatment plant, the frequency of analyses for those parameters may be reduced to once in three years.

5. A person, other than a local authority, producing sludge for use in agriculture shall not reduce the frequency of analyses under conditions 3 or 4 without the prior approval of the local authority in whose functional area the sludge is produced.

6. In the case of sludge from a septic tank or sewage treatment plant referred to in article 9:-

a) a sludge analysis shall be carried out within six months after the commencement of the use of such sludge in agriculture,

b) the frequency of the sludge analyses may be reduced to not less than once in five years provided that, in the initial analysis, the values for the concentrations of heavy metals are lower than the values shown in Part II of this schedule, and there is no change in the characteristics of the waste water being treated.

Part V

Methods of Analysis

Analysis for heavy metals shall be carried out following strong acid digestion.

The reference method of analysis shall be atomic absorption spectrometry.

The limit of detection for each metal shall be no greater than 10 % of the maximum value for that metal.

Appendix G: The Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations, 1994: A Handbook on Implementation for Local authorities

Recommended Analyses: Non-sensitive Areas

Parameter	Influent	Effluent	RWUS	RWDS	Note(s)
BOD_5	Yes	Yes	Yes	Yes	-
COD	Yes	Yes	No	[Yes]	a
Total S Solids	[No]	Yes	Yes	[Yes]	b,c

ABBREVIATIONS

RWUS Receiving water above [US] discharge point,

RWDS Receiving water below [DS] discharge point, clear of the mixing zone.

KEY

* With inhibition of nitrification during analysis

[ ] Denotes a qualified "Yes" or "No".

NOTES

a The COD test is not suited to very clean waters and is not usually carried out on such samples. However, a provision is made in the table for the carrying out of the test on down-stream receiving waters visibly affected by discharge(s).

b In view of the often unpleasant nature of influent samples it is considered that suspended solids measurement need not be mandatory on such samples.

c The measurement of suspended solids in waters of apparent clarity is of little practical value, and it is proposed that their determination be confined to those down-stream samples of receiving water on which it is considered the COD should be determined (see a above).

Recommended Analyses: Sensitive Areas - Rivers

Parameter	Influent	Effluent	RWUS	RWDS	Note(s)
BOD_5	Yes	Yes	Yes	Yes	-
COD	Yes	Yes	No	[Yes]	a
Total S Solids	[No]	Yes	Yes	[Yes]	
Total Phosphorus	Yes	Yes	Yes	Yes	b,c
Total oxidised Nitrogen	No	Yes	Yes	Yes	d
Total Kjeldhal Nitrogen	Yes	Yes	No	No	d,e
Ammonia	No	No	Yes	Yes	e

ABBREVIATIONS

RWUS Receiving water above [US] discharge point,

RWDS Receiving water below [DS] discharge point, clear of the mixing zone.

KEY

***** With inhibition of nitrification during analysis

[ ] Denotes a qualified "Yes" or "No".

NOTES

a The COD test is not suited to very clean waters and is not usually carried out on such samples. However, a provision is made in the table for the carrying out of the test on down-stream receiving waters visibly affected by discharge(s).

b In view of the often unpleasant nature of influent samples it is considered that suspended solids measurement need not be mandatory on such samples.

c The measurement of suspended solids in waters of apparent clarity is of little practical value, and it is proposed that their determination be confined to those down-stream samples of receiving water on which it is considered the COD should be determined (see a above).

d The measurement of nutrients is essential in sensitive areas. Although phosphorus is the key element concerning the eutrophication of fresh waters, nitrogen is very often determined

routinely on such waters, hence its recommended inclusion in programmes.

e Total Oxidised Nitrogen comprises nitrate and nitrite. The Total Kjeldahl Nitrogen [TKN] determination includes the measurement of ammonia. The measurement of TKN is not particularly suited to unpolluted (or mildly polluted) receiving waters and, accordingly, it is considered that the determination of ammonia instead of TKN on such waters is more practicable.

Recommended Analyses: Sensitive Areas - Lakes

Parameter	Influent	**Effluent**	**LWGA**	**LWLB**	**Note(s)**
BOD_5	Yes	Yes	No	No	a
COD	Yes	Yes	No	No	b
Total S Solids	[No]	Yes	No	No	c
Total Phosphorus	Yes	Yes	Yes	Yes	d
Total oxidised Nitrogen	Yes	Yes	Yes	Yes	d
Total Kjeldhal Nitrogen	Yes	Yes	Yes	Yes	d

ABBREVIATIONS

LWGA Lake water in the general area of the discharge

LWLB Lake water in the general body of the lake, in representative area(s) away from immediate influence of discharge.

KEY

*With inhibition of nitrification during analysis

[ ]Denotes a qualified "Yes" or "No".

NOTES

a The BOD test is not a routine determination on lake waters.

b The COD test is rarely if ever carried out on lake water samples.

c The test for Suspended Solids would be relevant only in cases of significant algal presence, for which the determination of chlorophyll is a more meaningful routine test.

d These are the key tests on lake water

Appendix H: Sewage Sludge Produced (County)

Local Authority	2004	2005
	tds/year	tds/year
Carlow County Council	492	492
Cavan County Council	241	331
Clare County Council	368	369
Cork City	0	2522
Cork County North	559	559
Cork County South	927	927
Cork County West	189	189
Donegal County Council	915	736
Dublin City Council	20633	20514
Fingal County Council	5600	4642
Dun Laoghaire-Rathdown CountyCouncil	31	31
Galway County Council	1247	1055
Galway City Council	6464	1523
Kerry County Council	1519	1458
Kildare County Council	3039	3970
Kilkenny County Council	2322	2322
Laois County Council	368	599
Leitrim County Council	134	130
Limerick City Council	0	1600
Limerick County Council	684	684
Longford County Council	741	794
Louth County Council	2358	2358
Mayo County Council	2209	1223
Meath County Council	1552	1250
Monaghan County Council	901	901
Offaly County Council	3619	3837
Roscommon County Council	453	453
Sligo County Council	31	31
Tipperary N.R. Co. Co.	1276	1276
Tipperary S.R. Co. Co.	513	513
Waterford County Council	6	6
Westmeath County Council	1213	1213
Wexford County Council	888	888
Wicklow County Council	431	431
Total	61923	59827

Reference List

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