



COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMISSION REPORT

**Implementation of Council Directive 91/271/EEC of 21 May 1991 concerning
urban waste water treatment, as amended by Commission Directive 98/15/EC of
27 February 1998**

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Summary report on
The identification of sensitive areas by the Member States
The measures implemented by the Member States with the
view of the deadline 31.12.1998
Waste water treatment in major cities
Verification of the identification of sensitive areas by the
Commission

1. INTRODUCTION

In January 1999, the European Commission published its first report¹ on the implementation of Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment,² as amended by Commission Directive 98/15/EC of 27 February 1998³. The Directive is one of the cornerstones of Community water policy and its aim is to protect the environment from the adverse effects of urban waste water discharges.

The first Commission report gave details of pollution caused by urban waste water, presented an initial progress report on the implementation of the Directive by the Member States, and summarised their implementation programmes. It emphasised, in particular, the major efforts which had been made by Member States, the considerable cost likely to be involved in implementing the Directive (EUR 130 billion for the 14 Member States excluding Italy) and the worrying delays announced for the cities of Brussels and Milan.

Under the Urban Waste Water Treatment Directive, December 1998 was a key milestone. By this date Member States were required to ensure *inter alia*, that waste water treatment facilities were available for all agglomerations with a population equivalent above 10,000 where the effluent was being discharged into a sensitive area (see below for further details). While Member States were not formally required to submit reports specifically in relation to the December 1998 deadline, the Commission, on its own initiative decided to request Member States to provide information. Accordingly formal requests were sent to Member States in April 1999. Reminders were sent in March 2000. In addition to the issue of waste water treatment in sensitive areas, Member States were also requested to provide information on waste water treatment in major agglomerations, even if not discharging into sensitive areas.

¹ COM(1998) 775 final, 15.1.1999.

² OJ L 135, 30.5.1991, p. 40.

³ OJ L 67, 7.3.1998, p. 29.

The present report is based on the replies submitted by the Member States and a study⁴ prepared by the Commission services in relation to sensitive areas. Only 13 of the Member States provided all the information requested by the Commission in relation to waste water treatment in sensitive areas.

Given the delays encountered in collecting information from the Member States, it is clear that the situation as presented in the report will have evolved in the intervening 2 years since the initial requests were made. A first draft report was sent to the Member States in December 2000 for a final comment. Inputs from Member States received until the 15 of February 2001 were taken into account in the text.

The Commission continues to follow the implementation process in all the Member States.

The report also presents the Commission's projects for the years ahead. The Commission plans in particular to continue the process of verifying conformity with the Directive and to provide assistance for achieving conformity. It will in particular increase its support to small and medium-sized agglomerations in the Member States affected by the deadline of 31 December 2005 and to candidate countries for accession to the European Union to help them achieve conformity with the Directive.

⁴ ERM-Study: "Verification of Vulnerable Zones under the Nitrates Directive and Sensitive Areas under the Urban Waste Water Treatment Directive", Environmental Resource Management.

2. THE MAIN OBLIGATIONS IMPOSED BY THE DIRECTIVE AND THE DEADLINES

The principal obligation imposed by the Directive is that waste water collecting and treatment systems must be provided by the following deadlines:

- **31 December 1998:** the deadline by which a stringent collecting and treatment system (secondary⁵ + tertiary⁶ treatment) must be provided in all agglomerations with a population equivalent⁷ (p.e.) of more than 10 000 which discharge their effluent into a sensitive area, as identified by the Member State, or its catchment area. The results of the Commission's verification of conformity with this deadline are set out below in this report.
- **31 December 2000:** the deadline by which a secondary treatment⁸ and collecting system must be provided in all agglomerations of more than 15 000 p.e. which do not discharge their effluent into a sensitive area or its catchment area. This deadline also applies to biodegradable industrial waste water from plants in the food-processing sectors listed in the Directive which is discharged directly into receiving waters. The Commission has started to verify conformity with this deadline and will present the results in a third report on the implementation of the Directive.

⁵ Secondary treatment means treatment by a process generally involving biological treatment with a secondary settlement or an equivalent process.

⁶ Tertiary treatment means treatment, supplementary to the secondary treatment, of the nitrogen (nitrification-denitrification) and/or phosphorus and/or any other pollutant which affects the quality or a specific use of the water: microbiological pollution, colour, etc. Paragraphs 3 and 4 of Article 5, and table 2 of Annex I (amended by the Directive 98/15/EC), describe the waste water treatment criteria for the discharges into sensitive areas as a minimum percentage reduction in the load for total phosphorus and total nitrogen and define concentration standards for these parameters.

⁷ Population equivalent (p.e.) is a unit of measurement of biodegradable organic pollution representing the average load of such pollution produced per person per day. It is specified in the Directive as 60 g BOD₅ (biochemical oxygen demand in five days) per day. The size of the agglomeration, expressed in p.e., corresponds to the organic load produced in the agglomeration during an average day during the week of the year with maximum production. It is calculated from the sum of the organic load produced during that day by permanent and seasonal residential establishments and services and the organic load produced on the same day by the industrial waste water which must be collected by a collecting system.

⁸ The treatment may be less stringent than secondary treatment, where there are certain derogation conditions, with the agreement of the Commission and the Council, in the case of discharges to coastal waters or estuaries identified by the Member States as less sensitive.

- **31 December 2005:** the deadline by which a collecting and treatment system must be provided in all agglomerations of between 2000 and 10 000 p.e. which discharge their effluent into a sensitive area or its catchment area, with secondary treatment or appropriate treatment⁹ depending on whether the discharge is to freshwaters, estuaries or coastal waters, and in agglomerations between 2 000 and 15 000 p.e. which do not discharge their effluent into such an area. Smaller agglomerations which already have a collecting system must also have an appropriate treatment system in place by the same date.

The other main deadlines and obligations imposed by the Directive are as follows:

- **30 June 1993:** the Directive had to be transposed into national law. By that date Member States had to have adopted the laws, regulations and administrative provisions necessary to comply with the Directive. The first Commission report indicated that many of the Member States were late in transposing the Directive. To date, all the Member States have transposed it, the last being Italy in 1999.
- **31 December 1993:** the discharge of industrial waste water into collecting systems and urban waste water treatment plants and the discharge of certain biodegradable industrial waste water into receiving waters had to be subject to prior regulations and/or specific authorisations. The Member States have adopted all the measures needed to meet these obligations.
- **31 December 1993:** the Member States had to draw up a programme for the implementation of the Directive. They have all communicated such a programme to the Commission, after delays of varying length. Several Member States have also sent the Commission updates on the information contained in these programmes. In the case of Belgium and Italy, these programmes are not in conformity with the provisions of the Directive or the required model for presentation.
- **31 December 1993:** the Member States were required to identify sensitive areas. Further details about this fundamental point, which determines the type of urban waste water treatment to be provided and the deadline for the treatment, are given below.

⁹ 'Appropriate treatment' means any process and/or system of disposal which enables the waters receiving the discharges to meet the specified quality objectives and to comply with the relevant provisions of Directive 91/271/EEC and any other Community Directives.

- **30 June 1995, for the first time and every two years thereafter:** the authorities and bodies responsible for implementation in the Member States are required to publish a situation report on the disposal of urban waste water and sludge in their sector. The Member States must send these reports to the Commission as soon as they have been published. In 1999, a working party consisting of representatives of the Member States and the Commission drafted a specimen situation report to assist the authorities preparing the report and to harmonise the information given. Up to now, the Commission has not received situation reports from Greece or Italy. Furthermore, it has received a report from Germany for only several regions of the territory. Lastly, most of the Member States have not complied with the two-year period for publication of the report and its transmission to the Commission, as required under the Directive.
- **31 December 1998:** the disposal of sludge from urban waste water treatment plants was required to be subject to general rules, registration or authorisation. The checks carried out by the Commission show that all Member States have introduced such measures for the disposal of sludge. In addition, the disposal of sludge to surface waters by dumping from ships, by discharge from pipelines or by other means was to be phased out by the same date. Only Spain, Ireland and the United Kingdom regularly use this practice. The United Kingdom banned the practice after 1998 in its transposing legislation. Ireland has informed the Commission that the disposal of sludge at sea was allowed under national legislation until 31 December 1998, after which it became an offence. However, Ireland has admitted that the disposal of sludge at sea did not cease until September 1999. In addition, Ireland believed it was not necessary to prohibit the disposal of sludge to surface waters other than the sea since this method of disposal was not used. Spain has not notified the Commission of any measures taken to prohibit the disposal of sludge to surface waters.
- Lastly, it should be recalled that the Directive stipulates that discharges of waste water from urban waste water treatment plants must be the subject of prior regulations and/or specific authorisations and that such discharges must also be monitored in accordance with the specific provisions of the Directive. The above mentioned working party has drawn up a computerised questionnaire to gather information about the monitoring of discharges. The Commission sent this questionnaire to all Member States in September 2000 asking them to use it to gather information about the monitoring carried out in 1999 for the agglomerations affected by the deadline of 31 December 1998. The Member States must send this information to the Commission by the end of June 2001. The Commission will summarise the results in its third report on implementation.

3. IDENTIFICATION OF SENSITIVE AREAS

In accordance with Article 5 of the Directive, the Member States were required to identify sensitive areas at the latest by 31 December 1993 by reference to the identification criteria given in Annex II.

These criteria refer to three groups of sensitive areas:

- freshwater bodies, estuaries and coastal waters which are eutrophic¹⁰ or which may become eutrophic if protective action is not taken;
- surface freshwaters intended for the abstraction of drinking water which contain or are likely to contain more than 50 mg/l of nitrates;
- areas where further treatment is necessary to comply with other Council Directives, such as the Directives on fish waters, on bathing waters, on shellfish waters, on the conservation of wild birds and natural habitats, etc.

If a water body falls into one of these three groups, this is enough for it to be designated as sensitive.

The identification of a water body as a sensitive area was an essential prerequisite for the practical application of the Directive. In areas identified as sensitive, collecting systems and treatment systems with more stringent than secondary treatment had to be operational by 31 December 1998 at the latest for all agglomerations of more than 10 000 p.e. which discharge into the sensitive area and into the catchment areas which contribute to pollution of the area. These treatment requirements do not apply in sensitive areas where it can be shown that the minimum percentage of reduction of the overall nitrogen and phosphorus load is at least 75% for each of the two parameters.

In accordance with Article 5(8), a Member State does not have to identify sensitive areas if it applies stringent (tertiary) treatment over all its territory. Five Member States have decided to apply stringent treatment in this way: Denmark, Luxembourg, the Netherlands, Finland and Sweden.

Nine other Member States - Belgium, Germany, Spain, France, Greece, Ireland, Italy, Portugal and the United Kingdom - have identified certain water bodies in their territory as sensitive areas. These areas were identified, with a greater or lesser degree of delay, between 1994 and 1999. Austria considered that no water body in its territory met the criteria for the identification of sensitive areas.¹¹ Austrian authorities have stated that their measures even go beyond those required by the Directive by requiring tertiary treatment for treatment plants with less than 10.000 p.e.

¹⁰ Subject to eutrophication: eutrophication means the enrichment of water by nutrients, especially compounds of nitrogen and/or phosphorus, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned.

¹¹ The maps attached show, in dark green, the water bodies identified by Member States as sensitive and, in lighter green, the catchment areas or parts of catchment areas in which the Member States have decided to apply the provisions of the Directive relating to the protection of sensitive areas.

Some Member States, such as Belgium, Spain, France and Italy, did not believe that agglomerations situated on certain parts of the catchment areas of sensitive areas should be the subject of stringent (tertiary) treatment¹². On this point, the Commission believes that nitrogen and phosphorus, the pollutants in urban waste water which cause the types of pollution corresponding to the first two criteria for the identification of sensitive areas, are highly persistent. A substantial part of the nitrogen and phosphorus from agglomerations of more than 10 000 p.e. located in the catchment areas of water bodies identified as sensitive, enter these water bodies. The Commission believes that, failure to provide tertiary treatment in certain agglomerations of more than 10 000 p.e. situated in the catchment area of a sensitive area to reduce the nutrients responsible for polluting the area, constitutes a failure to comply with the Directive. This failure is particularly marked in the following countries: Spain, which has not provided for any advanced treatment in the catchment areas of rivers identified as sensitive in their downstream section, such as the Ebro or the Guadalquivir; Italy, in particular for the catchment area of the Po, the delta and - highly eutrophicated - adjacent coastal waters of which have been identified as sensitive; and Belgium, for discharges in the Walloon Region, which contribute to the pollution of freshwaters in Flanders and the coastal waters of the North Sea, both of which are designated as sensitive.

The above ten Member States, which have decided not to introduce an advanced standard of treatment throughout their territory, must make sure that their list of sensitive areas is revised at least every four years. The list should therefore have been revised by 31 December 1997, must be revised again by 31 December 2001, and so on. Only France and the United Kingdom have revised their initial list of sensitive areas, in 1999 and 1998 respectively. Austria has announced that its revision procedure has not shown any water bodies which should be designated as sensitive.

Between 1998 and 2000, the Commission employed a consultant to verify the sensitive areas identified by the above ten Member States.¹³ This study reveals shortcomings in the sensitive areas identified by them,¹⁴ identifying other areas which were potentially sensitive because of eutrophication, and the high concentration of nitrates in surface waters intended for drinking water supply. The study highlighted the fact that a large number of Member States had not taken sufficient account of the degree of eutrophication of their waters. The areas concerned are the North Sea (from the coastal waters of northern France to Sweden), the Baltic and the Adriatic; all of

¹² The parts of catchment areas not taken into account by these Member States are shown on the maps in pink without cross-hatching. The pink areas without cross-hatching in Germany represent the territory of the regions of Saxony and Saxony-Anhalt. However, these two regions decided, in July 2000, to introduce tertiary treatment of nitrogen and phosphorus throughout their territory in order to combat eutrophication of the coastal waters of the North Sea and the Baltic.

¹³ Verification of vulnerable areas identified pursuant to the Nitrates Directive and sensitive areas identified pursuant to the Directive on urban waste water - ERM reports between March 1999 and June 2000.

¹⁴ The water bodies which, in the view of the Commission, should have been identified as sensitive are shown in dark pink on the maps. The corresponding catchment areas, in which advanced (tertiary) treatment of urban discharges should have been provided, are shown crosshatched in pink.

them have extensive eutrophication problems. The Commission believes that Belgium, France, Italy, Finland, Sweden and the United Kingdom have not taken all the measures needed to reduce the nutrients (nitrogen and phosphorus) in waste water to remedy the situation. In addition, Spain, Greece, France, Ireland, Italy, Portugal and the United Kingdom have, in the Commission's view, also not taken all the measures needed for discharges of urban waste water, which contribute to more localised eutrophication along the coasts of the Atlantic, the English Channel, the North Sea, the Irish Sea and the Mediterranean.

On the subject of eutrophication, the Commission has also had two reports drawn up which describe the methods used by the Member States to identify eutrophic, or potentially eutrophic bodies of water, and propose recommendations for harmonising them in the light of current scientific knowledge. One report is on coastal waters,¹⁵ the other on freshwaters.¹⁶

The Commission is also aware of shortcomings on the part of some Member States with regard to the third criterion for the identification of sensitive areas. In particular, tertiary treatment is needed for the protection of numerous bathing waters and shellfish waters to reduce the microbiological pollutants in urban discharges which may affect them. However, only Spain, France, Portugal and Italy have taken account of this criterion for the protection of bathing waters and shellfish waters when identifying their sensitive areas and only for some of their coastal waters.

4. SITUATION ON 31 DECEMBER 1998 IN AGGLOMERATIONS AFFECTED BY SENSITIVE AREAS¹⁷

The Member States have reported on the situation in the agglomerations they believe to be affected by the sensitive areas, they have identified, as requested by the Commission by letter on 23 April 1999. The situation report below therefore does not take account of agglomerations situated in the parts of catchment areas of sensitive areas not considered by the Member States (pink areas on the maps) or in the catchment areas of areas considered to be potentially sensitive by the Commission (cross-hatched pink areas).

The first part of the table below shows the number and the organic load of the agglomerations with a population equivalent of more than 10 000 which, according to the Member States, should be provided with stringent (tertiary) treatment to protect sensitive areas. Each load clearly represents a high percentage of the Member State's total organic load in the case of those which have decided to introduce stringent

¹⁵ Criteria used for the definition of eutrophication in coastal/marine waters - ERM - April 2000

¹⁶ Criteria for the identification of freshwaters subject to eutrophication - European Commission - Joint Research Centre - January 2001

¹⁷ For the purpose of this report agglomerations affected by sensitive areas means agglomerations which are situated in the relevant catchment areas of sensitive areas and which contribute to the pollution of these areas (see Article 5 of Council Directive 91/271/EEC). The term agglomeration has to be interpreted in the sense of the Directive 91/271/EEC, Article 2.4.

treatment throughout their territory¹⁸ (Denmark, Luxembourg, the Netherlands, Finland and Sweden) or over a large part of it (Germany). Conversely, other Member States (Greece, Spain, Ireland, Italy, Austria, Portugal) believe that stringent treatment to protect sensitive areas is needed for less than 10% of the Member State's total organic load, and therefore for only a small number of agglomerations. The figures for France and the United Kingdom are slightly higher, with 25% and 18%, respectively, of each Member State's organic load requiring stringent treatment.

The evaluation of the degree of conformity of the 3 247 agglomerations considered out of a total of some 20 000 agglomerations covered by the Directive, looks at the collecting systems as well as the treatment plants. With regard to the type of tertiary treatment required to reduce or prevent the eutrophication of receiving waters, the Commission believes that discharges of both nitrogen and phosphorus cause eutrophication, whether in freshwaters, marine water or estuaries. It has been scientifically established that the main causes in general of eutrophication are nitrogen in the case of coastal waters and phosphorus in the case of freshwaters. For the evaluation of treatment-conformity, the Commission therefore considers that unless scientific proof to the contrary can be put forward for certain bodies of water, at least phosphorus should be treated to combat the eutrophication of freshwaters and nitrogen to combat the eutrophication of coastal waters and estuaries. The most recent studies, however, show that, in freshwaters as well as marine water, nitrogen and phosphorus can both be limiting factors, either together or in turn, depending on the algae species and the time of year, and that it is often necessary to reduce both nutrients.

In addition to measures, in relation to individual treatment works, a number of Member States have taken measures to reduce phosphorus in detergents. These measures have undoubtedly a significant contribution to reduce loading.

France and Germany have not provided the information requested by the Commission regarding the conformity of agglomerations affected by sensitive areas.

Luxembourg and the Netherlands have pointed out that they have not checked the conformity of the treatment of waste water in each agglomeration concerned, but, as allowed under Article 5(4) of the Directive, have considered the total percentage of reduction of the nitrogen and phosphorus load throughout their territory. However, these two Member States indicate that, on 31 December 1998, they had not attained the 75% reduction in nitrogen and phosphorus required by the Directive. Germany also notified the Commission, in January 2001, that it intended to make use of the option of an overall assessment of the level of reduction of nitrogen and phosphorus for all German agglomerations in sensitive areas. Of the 13 Member States which have provided sufficient information about the agglomerations which they consider to be affected by sensitive areas, only Denmark and Austria seem, in the Commission's view, to be almost in conformity with the Directive. In the case of Denmark, only two agglomerations were not in conformity with the provisions of the Directive on 31 December 1998. In the case of Austria, a single agglomeration was not in conformity. All other Member States clearly seem to be not in conformity with this deadline. Most of the Member States plan to achieve conformity between 1999 and 2005.

¹⁸ It was also considered that Belgium should provide for tertiary treatment in all agglomerations of more than 10 000 p.e., although the Walloon Region has not officially decided to do this.

Agglomerations of more than 10 000 p.e. affected by a sensitive area (SA) and organic loads - Situation on 31/12/1998

Member States		<u>AGGLOMERATIONS CONCERNED</u>				<u>IN CONFORMITY</u>				<u>NOT IN CONFORMITY</u>			
		Number Of agglom.	SA load (p.e.)	Total load (p.e.)	% ¹	Number of agglom.	%	Load (p.e.)	%	Number of agglom.	%	Load (p.e.)	%
BELGIUM	B	189	7 801 350	9 164 000	85.1%	12	6.3%	468 081	6.0%	177	93.7%	7 333 268	94.0%
DENMARK	DK	125	6 876 605	8 393 000	81.9%	123	98.4%	6 848 167	99.6%	2	1.6%	28 439	0.4%
GERMANY	D	1685	109 831 358	141 458 400	77.6%								
GREECE ²	GR	33	881 400	10 811 000	8.2%	4	12.1%	123 396	14.0%	29	87.9%	758 004	86.0%
GREECE ³	GR	16	646 000	10 811 000	6.0%	4	25.0%	122 740	19.0%	12	75.0%	523 260	81.0%
SPAIN	E	120	5 973 306	74 439 000	8.0%	35	29.2%	1 433 593	24.0%	85	70.8%	4 539 713	76.0%
FRANCE	F	267	17 868 530	70 510 000	25.3%								
IRELAND	IRL	11	237 000	3 918 000	6.0%	7	63.6%	135 000	57.0%	4	36.4%	102 000	43.0%
ITALY	I	51	3 211 968	95 460 196	3.4%	16	31.4%	1 316 907	41.0%	35	68.6%	1 895 061	59.0%
LUXEMBOURG ⁴	L	11	764 500	914 000	83.6%	-	-	-	-	-	-	-	-
NETHERLANDS ⁴	NL	263	15 473 498	17 218 000	89.9%	-	-	-	-	-	-	-	-

Member States		<u>AGGLOMERATIONS CONCERNED</u>				<u>IN CONFORMITY</u>				<u>NOT IN CONFORMITY</u>			
		Number Of agglom.	SA load (p.e.)	Total load (p.e.)	% ¹	Number of agglom.	%	Load (p.e.)	%	Number of agglom.	%	Load (p.e.)	%
AUSTRIA	O	25	1 871 885	18 569 000	10.0%	24	96.0%	1 791 885	95.7%	1	4.0%	80 000	4.3%
PORTUGAL	P	27	1 333 517	16 742 000	8.0%	5	18.5%	256 000	19.2%	22	81.5%	1 077 517	80.8%
FINLAND	FI	85	4 352 317	4 550 000	95.7%	11	12.9%	478 360	11.0%	74	87.1%	3 873 957	89.0%
SWEDEN	S	144	7 263 240	7 496 000	96.9%	34	23.6%	2 451 910	33.8%	110	76.4%	4 811 330	66.2%
UNITED KINGDOM	UK	212	13 386 805	76 528 000	17.6%	19	9.0%	1 536 902	11.5%	150	70.7%	10 180 629	76.0%
TOTAL		3 247	197 127 279	556 170 596	35.4%								

(1) Percentage in relation to the total organic load of the Member State

(2) First version

(3) Second version

(4) Luxembourg and the Netherlands applied to Article 5.4 of the Directive, which relieves from the provisions for individual treatment plants with more than 10.000 p.e. according to Article 5.2 and 5.3, if it can be shown, that the minimum percentage of reduction of the overall load entering a treatment plant in that area is at least 75% for total phosphorus and 75% for total nitrogen.

5. LESS SENSITIVE AREAS

While Member States are obliged by the Directive to identify sensitive areas, the identification of less sensitive areas is an option open to them for certain coastal waters and estuaries which, because of their morphology, hydrology or specific hydraulic conditions, are able to receive urban waste water discharges which have undergone less stringent treatment than secondary treatment without the environment being adversely affected.

Spain, Portugal and the United Kingdom have identified such less sensitive areas. The Commission would point out that sensitive or potentially sensitive areas of coastal waters and estuaries and bodies of water adjacent to them do not fulfil the conditions for identification as less sensitive if these areas may be affected by discharges. In particular, bathing waters and shellfish waters, which are particularly fragile and sensitive to waste water discharges, and bodies of water situated in their immediate vicinity which may be affected by discharges may not be identified as less sensitive. The Commission therefore challenges certain less sensitive areas identified in Northern Ireland, on the western coast of Portugal, in Madeira, the Azores and the Canary Islands and on the coast of Andalusia. With regard to Andalusia, the Commission also believes that, in particular, because of the very limited tides, the waters of the Mediterranean do not comply with the hydrology criteria or the hydraulic conditions required for identification as less sensitive.

It is important to remember that every case of treatment less stringent than secondary treatment before discharge to a less sensitive area must be the subject of a request for a derogation: the Member States must present comprehensive studies to the Commission showing that such discharges will not adversely affect the environment (Article 6(2)) and, in exceptional circumstances for agglomerations of more than 150 000 p.e., that more advanced treatment will not produce any environmental benefits (Article 8(5)). The Commission must examine these studies and take the appropriate measures after submitting the project to the Committee provided for in Article 18 and, if necessary, to the Council.

In 1999, Portugal requested a derogation for the agglomeration of the Estoril Coast (720 000 p.e.) near Lisbon. This case must be decided in 2001. In December 2000, the United Kingdom sent the Commission studies as required under Article 6(2) concerning the Scottish agglomerations of Stornoway (53 000 p.e.) and Lerwick (30 000 p.e.). Spain has not requested any derogation. In these circumstances, the Commission believes that, apart from these three agglomerations, all EU agglomerations of more than 15 000 p.e. must have at least secondary treatment since 31 December 2000, including those which discharge their effluent into waters identified as less sensitive.

6. TREATMENT SITUATION ON 31 DECEMBER 1998 IN EU CITIES

Apart from evaluating the situation with regard to conformity on 31 December 1998, the Commission wished to provide EU citizens with a “snapshot” of the level of treatment of urban waste water in all major European cities on that date for information and to ensure transparency.

The Commission requested this information by letter of 22 March 2000. The maps below show the information received from the Member States. Only Germany and France¹⁹ have not responded to the Commission's request. Each major urban centre is described in terms of a single overall level of treatment, even if the urban centre consists of several agglomerations²⁰ within the meaning of the Directive. The Commission has provided the information in this way for ease of understanding by the citizen. Only Italy has provided names which in many cases do not correspond to the name of the main city concerned.

The situation for 527 cities with a population equivalent of more than 150 000 on 31 December 1998²¹ was as follows:

- 78 had secondary + full tertiary treatment (blue dots on the maps);
- 221 had full secondary treatment, or full secondary + incomplete tertiary treatment (green dots);
- 57 had incomplete secondary treatment, or primary treatment for all or part of their effluent (yellow dots);
- 37 had no treatment at all (red dots);
- for 134, the Commission has not received full information (orange dots).

It is important to point out that most of the 37 cities which had no treatment at all on 31 December 1998 and the 57 others which had incomplete treatment have made plans for the necessary investments to remedy this unsatisfactory situation. In February 2001, some of this work was already completed, however in many of the major cities there will be delays between 5 and 10 years.

7. SITUATION IN EACH MEMBER STATE

7.1. Belgium

In Belgium, the implementation of the Directive is the responsibility of the three Regions: Flanders, Wallonia, and Region of Brussels-Capital.

7.1.1. Identification of sensitive areas

In 1992 and 1995, Flanders identified all of its waters, including its coastal waters, as sensitive. In 1994, the Region of Brussels-Capital also identified the Senne River, which flows through it, as sensitive. In 1995, Wallonia identified certain stretches of its rivers as sensitive, mainly to provide protection for the abstraction of drinking water. In doing so, Wallonia has not taken account of the fact that its waters pass into Flanders, whose waters have been identified as sensitive, and then reach the North Sea, the coastal waters of which are

¹⁹ For France, the Commission used the data published by the *Réseau National de Données sur l'Eau* - (RNDE), which present the situation in 1996, together with updated data for a number of cities.

²⁰ An agglomeration, as defined in the Directive, means an area where the population and/or economic activities are sufficiently concentrated for urban wastewater to be collected and conducted to an urban wastewater treatment plant or to a final discharge point.

²¹ Situation in 1996 in the case of France, 2000 in the case of Spain.

also designated as sensitive. In June 2000, the Walloon authorities announced their intention to consider all of their territory as sensitive for the above reasons. However, the Commission had not received formal notification of this identification by the date of 15 February 2001.

7.1.2. Agglomerations affected by sensitive areas.

The conformity of agglomerations in sensitive areas has been evaluated by taking into account the 189 Belgian agglomerations with a population equivalent of more than 10 000, including those in the Walloon Region for which the obligation of stringent treatment has not yet passed into law. The results, summarised in the table below, show that on 31 December 1998, only 6% of agglomerations complied with the obligations of the Directive. The Flemish Region and the Region of Brussels-Capital plan to be in conformity in 2004-2005. The delay is likely to be longer in the Walloon Region because of the volume of investment needed.

<i>B</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	189		7.801.350	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	12	6.3%	468 081	6.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	177	93.7%	7 333 268	94.0%

7.1.3. Treatment in cities

On 31 December 1998, the cities in Flanders had secondary-level treatment, but they should have tertiary treatment. The situation is different in Wallonia: while Mons has tertiary treatment, Charleroi and Liège do not have any treatment at all for a large part of their population. On 31 December 1998, the City of Brussels did not have any waste water treatment at all. The first treatment plant to be constructed has been treating one third of waste water at secondary level since the autumn 2000, i.e. below the level required by the Directive. The second treatment plant in Brussels is at the planning stage and will not be operational before 2004-2005.

7.2. Denmark

7.2.1. Identification of sensitive areas

Denmark has decided, as allowed under Article 5(8) of the Directive, to apply stringent treatment (tertiary treatment of nitrogen and phosphorus) over all of its territory. It is therefore not required to identify sensitive areas for the purposes of the Directive.

7.2.2. *Agglomerations of more than 10 000 p.e.*

Denmark has 125 agglomerations with a population equivalent of more than 10 000. The Danish authorities have notified the Commission that 123 of them had a stringent collecting and treatment system (secondary treatment + tertiary treatment of nitrogen and phosphorus) on 31 December 1998. Only the agglomerations of Aså and Tange were not in conformity with the Directive on that date. Denmark is the Member State with the best performance in this area and is very close to full conformity for all agglomerations of more than 10 000 p.e. in its territory.

DK	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS OF MORE THAN 10.000 p.e.	125		6 876 605	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	123	98.4%	6 848 167	99.6%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	2	1.6%	28 439	0.4%

7.2.3. *Treatment in cities*

Five Danish towns and cities have a population equivalent of more than 150 000. These are: Aalborg, Aarhus, Fredericia, Copenhagen and Odense. As stated above, these five towns and cities have full tertiary treatment of nitrogen and phosphorus.

7.3. **Germany**

7.3.1. *Identification of sensitive areas*

In Germany, there are sixteen regions responsible for implementing the Directive and they have had to identify their sensitive areas. The identification shows that the regions have decided to provide agglomerations situated on the catchment areas of the North Sea and the Baltic with rigorous (tertiary) treatment.²² Bavaria and Baden-Württemberg have taken the same decision for agglomerations situated in the catchment areas of Lake Constance, some of the Bavarian lakes and the Upper Danube. Only the main part of the Danube river basin situated in Germany is not considered to be a catchment area of a sensitive area.

²² None of the territory of Saxony and Saxony-Anhalt is shown as a catchment area of a sensitive area on the maps because the decision taken in these two regions was late (July 2000).

7.3.2. Agglomerations affected by sensitive areas.

The German authorities have provided a list of 1 685 agglomerations with a population equivalent of more than 10 000 situated in the catchment areas of sensitive areas, representing a population equivalent of 110 million and 78% of the population equivalent covered by the Directive in Germany.²³ They have also stated that all these agglomerations had a collecting system conforming to the provisions of the Directive on 31 December 1998. However, they have not provided any information about the conformity of treatment on that date. The Commission therefore does not have any information to assess the level of treatment or Germany's conformity with the deadline of 31 December 1998. In a letter to the Commission in January 2001, the German authorities stated that they had finally decided to assess conformity not by individual agglomeration, but, as provided for in Article 5(4) of the Directive, by taking account of the total percentage of reduction of the nitrogen and phosphorus load in all catchment areas of sensitive areas.

7.3.3. Treatment in cities

Germany has not sent the Commission a situation report on treatment in cities. In a letter to the Commission in January 2001, Germany merely described the situation for about 10 out of nearly 129 cities with a population equivalent of more than 150 000 in the country.

7.4. Greece

7.4.1. Identification of sensitive areas

Greece was very late in identifying its sensitive areas in August 1999, five and a half years after the deadline in the Directive, and after the deadline of 31 December 1998 for implementing the measures needed for their protection. 34 lakes, rivers, estuaries and coastal bodies of water have thus been designated as sensitive on the basis of eutrophication. The consultant who carried out the verification study for the Commission in 2000 concluded that 16 other bodies of water (coastal, lakes and rivers) should also have been identified as sensitive on the basis of eutrophication and the protection of water intended for drinking water supply. In particular, the study shows that the lower part of the Saronic Gulf, which receives the effluent from Athens, and the Gulf of Thessaloniki, which receives Thessaloniki's effluent, should have been identified as sensitive in terms of eutrophication. The identification of sensitive areas in Greece will be subject to further discussion with the Greek authorities and the Commission.

7.4.2. Agglomerations affected by sensitive areas.

According to the first letter from the Greek authorities in June 2000, 33 agglomerations with a population equivalent of more than 10 000 are situated in the catchment area of a sensitive area and required tertiary treatment on 31 December 1998. In a second letter dated January 2001, the authorities specified that there are, in fact only 16 agglomerations to be taken into account since the size of the agglomerations initially listed had been overestimated following local government reorganisation. In both cases, it seems that the Greek agglomerations requiring tertiary treatment account, in terms of organic load, for only 6 to 8% of the Greek agglomerations covered by the Directive. The level of conformity on

²³ These figures do not include any of the territory of Saxony and Saxony-Anhalt.

31 December 1998 was also low since, according to the Commission's evaluation, only 4 out of the 16 (or 33) agglomerations were in conformity, these being Livadia, Karpenisi, Komotoni and Arta.

7.4.2.1. First version

GR	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	33		881 400	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	4	12.1%	123 396	14.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	29	87.9%	758 004	86.0%

7.4.2.2.. Second version

GR	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	16		646 000	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	4	25.0%	122 740	19.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	12	75.0%	523 260	81.0%

Furthermore, the Greek authorities provided information about the same agglomerations affected by sensitive areas on 31 December 2000. The situation has progressed satisfactorily since ten agglomerations were considered to be in conformity on that date.

7.4.3. Treatment in cities.

Greece has six cities with a population equivalent of more than 150 000: Athens, Thessaloniki, Iraklion, Elefsina Aspropyrgos, Metamorphosis and Patra. Athens and Thessaloniki themselves have a population equivalent of more than four million, nearly half the Greek population.

On 31 December 1998, Iraklion and Metamorphosis had secondary treatment, Athens primary treatment, Thessaloniki incomplete secondary treatment and Patra and Elefsina Aspropyrgos no treatment at all. By 31 December 2000, the situation had improved in Thessaloniki, which brought in full secondary treatment followed by treatment of nitrogen at the end of that year. Projects are in progress in Patra, Elefsina Aspropyrgos and Athens. The Patra treatment plant is expected to be operational in 2001. For the agglomeration of Athens, it was decided in 2000 to construct a secondary treatment plant with nitrogen treatment.

7.5. Spain

7.5.1. *Identification of sensitive areas*

In Spain, the list of sensitive areas corresponding to “inter-community” bodies of water, i.e. those where several regions are affected, was drawn up for the whole country by Regulation of 25 May 1998. Furthermore, the identification of sensitive areas within a region, known as “intra-community” sensitive areas, is the responsibility of the regional authorities. The documents from Spain therefore refer to the identification of sensitive areas by some regional authorities, in particular in Catalonia, Galicia and the Balearic Islands, but the specific areas have not been officially notified to the Commission Only Andalusia has officially identified sensitive areas and less sensitive areas, by Decree in March 1999, but Spain included only two of the sensitive areas identified by Andalusia in 1999 in the documents it sent in November 2000. Spain has applied the three criteria in the Directive for the identification of sensitive areas: combating eutrophication, the protection of waters intended for the production of drinking water and the protection of bathing waters.

The January 2000 report which verifies the sensitive areas identified in Spain shows there are 44 additional bodies of water which should have been identified as sensitive in terms of eutrophication. These are essentially freshwater catchments as well as coastal waters and estuaries in Andalusia, Asturia, the Balearic Islands, Cantabria, Galicia and the Basque country.

7.5.2. *Agglomerations affected by sensitive areas.*

The documents sent to the Commission by the Spanish authorities showed that 120 Spanish agglomerations felt they required tertiary treatment for the protection of sensitive areas. These agglomerations represent only 8% of the pollution load affected by the Directive in Spain.

The list did not include agglomeration discharges into the 44 above mentioned potentially sensitive water bodies. In addition, the list did not include many agglomerations situated in the catchment areas of potentially sensitive areas. For example, the downstream part of the Ebro in Catalonia is listed as sensitive in the documents from Spain, but agglomerations in the other regions situated upstream in the river basin do not have tertiary treatment. The same is true of the catchment areas of the rivers Guadalquivir, Guadiana and Júcar, Tagus and Douro. The Commission therefore believes that, given the numbers of water bodies needing protection and their catchment areas, a large number of Spanish agglomerations should be provided with tertiary treatment.

The type of tertiary treatment required by the Spanish authorities for the 120 agglomerations listed is treatment of nitrogen, phosphorus and microbiological pollution or a combination of these. 35 of the 120 agglomerations are considered to be in conformity with the provisions of the Directive on 31 December 1998.

<i>E</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	120		5 973 306	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	35	29,2%	1 433 593	24.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	85	70,8%	4 539 713	76.0%

7.5.3. *Treatment in cities*

In November 2000, Spain described the situation in its cities in 2000, but not on the date of 31 December 1998.

In 2000, the situation in the 72 Spanish cities with a population equivalent of more than 150 000 is as follows:

- 8 have tertiary treatment: Almería, Bilbao, Calvia, Oviedo, Valladolid, Vitoria-Gasteiz, Xirivella and Zaragossa.
- 39 have full secondary treatment, including Madrid, Seville and Valencia.
- 18 have incomplete secondary treatment or primary treatment. These include Barcelona, where the situation is highly unsatisfactory. Half the city, a population equivalent of almost 1.7 million, has primary treatment and the other half discharges its effluent into the sea completely untreated.
- 7 do not treat their waste water at all: La Coruña, Alginet, Cadiz, Donostia-San Sebastian, Gijon, Logroño and Tui.

The Spanish authorities have indicated that construction work is in progress for most of the cities without treatment or where treatment is inadequate, such as Alginet, San Sebastian, Logroño and Barcelona, and that these cities should be in conformity in two or three years' time. In the case of other cities without treatment or with inadequate treatment, the treatment plants are either planned or contracts for their construction are being awarded.

7.5.4. *Less sensitive areas*

Spain is one of three Member States, together with Portugal and the United Kingdom, which have identified coastal waters as less sensitive. Spain believes that discharges of waste water treated at primary level only into these less sensitive areas will not adversely affect the environment. In Spain, the regions are responsible for the identification of less sensitive areas. Since 1997, Spain has been identifying such less sensitive areas along the coasts of the Mediterranean and the Atlantic and in the Canary Islands. However, only the region of Andalusia has officially identified less sensitive areas along the whole of its coastline by Decree of March 1999²⁴. In November 2000, the Spanish national authorities notified the Commission that, after consultations with the regions, only the Canary Islands have other less sensitive areas, which are themselves being examined. However, the Commission has not been informed that Article 3(2) of the Decree issued by the region of Andalusia in March 1999 and identifying less sensitive areas has been revoked.

As indicated in Chapter 5 of this report, the Commission challenges a large number of the less sensitive areas identified in the Canary Islands and Andalusia since it believes that discharges treated at primary level only may affect the quality of numerous bodies of bathing waters in these two regions. In addition, the Commission believes that, when identifying its less sensitive areas, Andalusia did not take account of the fact that discharges may affect nearby bodies of water designated as sensitive in Andalusia itself as well as in the Algarve in Portugal. In general terms, the Commission is of the view, as stated in Chapter 5, that the waters of the Mediterranean do not meet the criteria laid down in the Directive for less sensitive areas due to their hydrodynamic features.

Spain has not sent any request to the Commission for a derogation for treatment less stringent than secondary treatment before discharge into a less sensitive area. The Commission therefore believes that all Spanish agglomerations with a population equivalent of more than 15 000 must have at least secondary treatment since 31 December 2000, including those which discharge their effluent into areas identified as less sensitive by the Spanish authorities.

7.6. **France**

7.6.1. *Identification of sensitive areas*

France officially drew up its first list of sensitive areas in November 1994 using the three criteria given in the Directive. It reviewed the list in August 1999, adding a number of other sensitive areas. The map below takes account of this revision. The French authorities have not indicated, as requested by the Commission, the criterion or criteria used for the identification of each body of water as sensitive.

²⁴ The less sensitive areas identified by the Andalusian authorities by Decree of 2 March 1999 are the following:

- from the mouth of the Guadiana to the Cape of Trafalgar, the fringe between the outer territorial sea limit and the line half a nautical mile from the low line.
- from the Cap of Trafalgar until the limit of the independent Community of Murcia, the boarder between the external limit of the territorial sea and the line, situated half a nautical mile from the low line.

They have also not made any distinction between bodies of water which are polluted or likely to be polluted and the catchment areas of these bodies of water, where protection measures must also be taken. They have designated the two types of areas as "sensitive". Consequently, the Commission concludes France's aims as regards the protection of sensitive areas are difficult to understand.

Furthermore, the study carried out by the Commission in 1999 to check the information submitted shows additional bodies of water which should have been identified as sensitive in terms of eutrophication. These are the freshwater and coastal water bodies of the Artois-Picardy basin, the Bay of the Seine and its downstream section, rivers and coastal waters in Brittany, streams in the Vendée, the river Vistre and the lagoon Etang de Thau.

7.6.2. Agglomerations affected by sensitive areas

The French authorities have not provided the information requested by the Commission by letter of 23 April 1999 and 22 March 2000. They only sent, in December 2000, a map of the sensitive areas identified in 1994, indicating 281 agglomerations located in those areas. An attached list shows that 151 agglomerations were and 130 were not in conformity with the provisions of the Directive on 31 December 1998. In a memo accompanying the list, the French authorities specify that these agglomerations should achieve conformity in two to three years' time.

According to an evaluation made by the Commission using data of the *Réseau National de Données sur l'Eau* (RNDE), the agglomerations affected by sensitive areas represent 25% of the total load of the French agglomerations covered by the Directive. Most French cities are outside the sensitive areas identified by France.

However, on the basis of the verification referred to above to check the sensitive areas, the Commission believes that cities such as Lille and Paris should have tertiary treatment of nitrogen and phosphorus to reduce the eutrophication of the freshwaters and marine waters situated downstream of their discharges.

In a circular published in a French magazine in April 1999, the French Minister for the Environment and Regional Planning stated that only 38% of the agglomerations affected by sensitive areas would meet the deadline of 31 December 1998, 27% would be one to three years behind and 35% more than four years late.

7.6.3. Treatment in cities.

France has not replied to the Commission's request about the situation in cities with a population equivalent of more than 150 000.

According to the RNDE and other information gathered by the Commission, France has 61 cities with more than 150 000 p.e. Cities such as Angers, Besancon, Cholet, Colmar, Douai, Metz, Nantes and Royan have tertiary treatment. Many others have full secondary treatment. However, some large cities such as Lille, Marseille and Bordeaux have very inadequate treatment (primary or very incomplete secondary treatment).

7.7. Ireland

7.7.1. Identification of sensitive areas

In 1994, Ireland identified four lakes as sensitive in terms of eutrophication: Lough Derg, Lough Leane, Lough Oughter and Lough Ree, and six river sections: River Boyne, River Camlin, River Castlebar, River Liffey, River Nenagh and River Tullamore.

The Commission's study carried out in 1999 shows that the Irish authorities have not identified any estuaries or coastal water bodies as sensitive. It also shows that 14 coastal areas and estuaries, including Dublin Bay, and the estuaries and port area of Cork suffer from problems of eutrophication and should have been identified as sensitive. The study also includes six rivers (Proules, Dodder, Tolka, Cavan, Brosna and Blackwater) and three lakes (Muckno, Monalty and Ennell) which should have been identified as sensitive.

Ireland has not revised the list of sensitive areas as required by the Directive.

7.7.2. Agglomerations affected by sensitive areas

The Irish authorities have introduced tertiary treatment for the reduction of phosphorus in 11 agglomerations affected by identified sensitive areas. These 11 agglomerations represent only 6% of the organic load of the Irish agglomerations affected by the Directive.

The Commission believes that tertiary treatment should be much more extensive in Ireland, in particular the tertiary treatment of nitrogen and in some cases of phosphorus in cities such as Dublin or Cork to combat the eutrophication of coastal waters and estuaries.

Of the 11 agglomerations considered by Ireland to be provided with tertiary treatment of phosphorus:

- 7 are regarded as in conformity with the provisions of the Directive on 31 December 1998: Athlone, Castlebar, Killarney, Mullingar, Nenagh, Roscrea and Tullamore.

- the remaining 4 - Cavan, Longford, Navan and Osberstwon - were not in conformity on 31 December 1998, but the Irish authorities have indicated that they would be in conformity at the latest in 2001.

<i>IRL</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	11		237 000	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	7	63.6%	130 000	57.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	4	36.4%	102 000	43.0%

7.7.3. *Treatment in cities*

Ireland has three cities with a population equivalent of more than 150 000.

- Dundalk (180 000 p.e.) did not have any treatment on 31 December 1998, but a secondary treatment plant was expected to become operational at the end of 2000.

- Cork (302 000 p.e.) also did not have any treatment plant for waste water on 31 December 1998. Secondary treatment is planned for the end of 2003. In view of the eutrophication of the coastal waters and estuaries in this location, the Commission believes that the city of Cork should introduce tertiary treatment of nitrogen and phosphorus.

- Dublin (1 437 000 p.e.) had only primary treatment for 1 000 000 p.e. on 31 December 1998. Secondary treatment is planned for 2002. The Commission believes there should also be tertiary treatment, at least of nitrogen, to combat eutrophication in Dublin Bay.

7.8. **Italy**

7.8.1. *Identification of sensitive areas*

In May 1999, Italy identified a number of sensitive areas in its Legislative Decree transposing the Directive into national law. Lakes at less than 1 000 metres above sea level and the related rivers over a distance of 10 km from the coastline have thus been identified. The map and tables enclosed with the information sent by Italy to the Commission in January 2000 show seven lakes as sensitive: Iseo, Garlate Olginate, Como, Lugano, Maggiore, Trasimeno and San Giovanni-Fiume Naro. The lagoon area of Ortobello, on the Mediterranean coast, has also been identified, as have the following areas of the Adriatic coast: the coastal area of the north-western Adriatic, from the mouth of the Adige to Pesaro, and the related rivers over a distance of 10 km from the coastline, the lagoon areas of Ravenna and Piailassa-Baiona, the Venice lagoon, the Po delta, as well as the Commaccio valleys and the brackish lakes. The wetlands identified in the Ramsar Convention²⁵ have also been identified as sensitive. The criteria used are the three given in the Directive.

In January 2001, the Italian authorities sent the Commission a new list of 187 sensitive areas, stating that no agglomeration of more than 10 000 p.e. was affected by them. The Commission would point out that the agglomerations of more than 10 000 p.e. affected by sensitive areas are not only those which discharge their effluent directly into these sensitive areas, but also those which are situated in their catchment areas and contribute to the pollution of these areas. The Commission would also point out that there is no point in identifying sensitive areas under the Directive if no agglomeration of more than 10 000 p.e. is affected.

In 2000, the Commission had the sensitive areas identified by Italy in May 1999 checked. The check covered the combating of eutrophication and the protection of waters for the abstraction of drinking water against nitrates. According to this check, the following areas should have been identified as sensitive by the Italian authorities: Lakes Garda and Idro,²⁶ the following tributaries of the Po: Sarca-Minco, Oglio, Adda, Lambro-Olona-Meridion and Ticino, the River Arno downstream of Florence and its tributary the Greve, the Gulf of Castelmarre in Sicily and the coastal waters of the northern Adriatic.

²⁵ International Convention on Wetlands.

²⁶ These two lakes appear in the list of 187 sensitive areas sent by the Italian authorities in January 2001.

7.8.2. *Agglomerations affected by sensitive areas*

According to the information sent by the Italian authorities in January 2000, only 51 agglomerations with a population equivalent of more than 10 000 require tertiary treatment of effluent to protect sensitive areas. These represent only 3% of the organic load of all the Italian agglomerations covered by the Directive.

The Commission believes that the Italian authorities have failed to take proper account of the requirement of stringent (tertiary) treatment for agglomerations of more than 10 000 p.e. which are situated in the relevant catchment areas of sensitive areas and which contribute to the pollution of those areas. This shortcoming is particularly serious for the protection of lakes and the protection of the Po delta and the adjacent coastal waters, which have been identified as sensitive. For the protection of these waters, Italy has not taken account of discharges more than 10 km from the coastline. According to the Commission, the agglomerations situated in all the catchment areas which contribute to the pollution of these waters, such as the agglomerations of Milan and Turin in the catchment areas of the Po, which contribute to the pollution of the Po delta and the adjacent coastal waters, should be provided with adequate tertiary treatment.

Furthermore, the agglomerations affected by the potentially sensitive areas listed in the Commission's study, such as the city of Florence, should also be provided with stringent (tertiary) treatment.

With regard to the 51 agglomerations which are affected by sensitive areas according to the Italian authorities, the information sent by these authorities in January 2000 and January 2001 is not enough to evaluate conformity on 31 December 1998. In particular, the dates on which conformity was achieved are not stated for a large number of these agglomerations. On the basis of the information given, the Commission has calculated that 16 agglomerations were in conformity with the provisions of the Directive on 31 December 1998. In their letter of 5 January 2001, the Italian authorities put the number at 43.

<i>I</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	51		3 211 968	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	16	31.4%	1 316 907	41.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98²⁷	35	68.6%	1 895 061	59.0%

²⁷

Or insufficient information provided.

7.8.3. *Treatment in cities*

Italy has 72 cities with a population equivalent of more than 150 000. According to the information sent by the Italian authorities in January 2001, the situation with regard to the treatment of waste water from these cities on 31 December 1998 was as follows:

- 30 cities, including Bari, Bergamo, Brescia, Livorno, Messina, Palermo, Parma, Ravenna, Rome and Verona, had tertiary treatment.
- 29, including Bologna, Cagliari, Catania, Genoa, Modena, Monza, Naples, Padua, Rimini, Turin and Venice, had full secondary treatment. In the case of Turin, tertiary treatment of nitrogen is planned for 2001. Adequate tertiary treatment is not planned for cities such as Padua or Venice, which do contribute to the pollution of sensitive areas.
- 3 cities, Florence, Reggio Calabria and Trieste, had no treatment for part of their effluent. In Florence, it is planned to have full secondary treatment by the end of 2001, but not tertiary treatment for the reduction of nitrogen, which the Commission believes is necessary to protect the River Arno. In Reggio Calabria, full secondary treatment was achieved by the end of 2000. There is a tertiary treatment project for Trieste, but the operational date has not yet been stated.
- 7 cities, Foce Sarno, Imperia Foce Impero, Medio Sarno, Merano, Milan, Misterbianco and Taranto, had no treatment plants on 31 December 1998. Taranto and Merano introduced full tertiary treatment in 2000 and, according to the information provided, the others should achieve conformity by 2004 at the latest.
- the information provided is insufficient in the case of Como, Salerno and Rosolina-Donada-Cantarina.

7.9. **Luxembourg**

7.9.1. *Identification of sensitive areas*

Luxembourg has decided to implement stringent treatment (tertiary treatment of nitrogen and phosphorus) over all its territory in accordance with Article 5(8) of the Directive. It is therefore not required to identify sensitive areas for the purposes of the Directive.

7.9.2. *Agglomerations*

Luxembourg has 11 agglomerations with a population equivalent of more than 10 000. On 31 December 1998 the situation as regards the conformity of these agglomerations with the provisions of the Directive was as follows:

- 3 agglomerations were in conformity: Mamer, Pétange and Uebersyren. These 3 agglomerations represent 15% of the organic load of Luxembourg agglomerations with more than 10 000 p.e.
- 8 agglomerations were therefore not in conformity: Bettembourg, Blesbruck, Differdange, Echternach, Esch-Schifflange, Luxembourg-Beggen, Luxembourg-Bonnevoie and Mersch. They all had secondary treatment on that date, but no treatment of nitrogen, three of them had no treatment of phosphorus.

Luxembourg proposes to achieve conformity for all of these agglomerations by 2005 at the latest.

Luxembourg has also decided to apply, for the time being, the option provided for in Article 5(4) of the Directive of not verifying the conformity of treatment for each agglomeration, but of considering the percentage reduction of the load entering all treatment plants. The percentage of reduction must in overall terms be at least 75% for total nitrogen and for total phosphorus, taking account of all agglomerations which must have treatment plants and not only those with more than 10 000 p.e. This percentage has not yet been achieved, at least not in the case of nitrogen.

Luxembourg has stated that, since it has taken this option, the requirements for discharges during the construction or any substantial modification of a new treatment plant are at the moment the values specified in the Directive, but that when the percentage of 75% is achieved for nitrogen and phosphorus, less stringent values may be laid down.

7.9.3. Treatment in cities

Only the city of Luxembourg (360 000 p.e.) exceeds 150 000 p.e. It has secondary treatment followed by tertiary treatment of phosphorus. The tertiary treatment of nitrogen and phosphorus, as required by the Directive, is planned for 2005.

7.10. The Netherlands

7.10.1. Identification of sensitive areas

The Netherlands has decided to implement stringent treatments (tertiary treatment of nitrogen and phosphorus) over all its territory in accordance with Article 5(8) of the Directive. The Netherlands is therefore not required to identify sensitive areas for the purposes of the Directive.

7.10.2. Agglomerations

The Netherlands has decided to apply Article 5(4) of the Directive. Consequently, the requirements of the Directive that each treatment plant must be provided with tertiary treatment do not apply to the Netherlands. The Dutch authorities must show that the minimum percentage of reduction of the overall load entering all the country's treatment plants, and not only those for more than 10 000 p.e., is at least 75% for total phosphorus and at least 75% for total nitrogen. In the information sent to the Commission, the Dutch authorities state that, on 31 December 1998, the minimum rate of 75% had been achieved for phosphorus, but not for nitrogen. The rate of reduction of nitrogen on that date was 60%.

The Netherlands points out on the subject that, of the 27 "competent water authorities", 7 which account for 54 treatment plants of more than 10 000 p.e., were in compliance on 31 December 1998 with the minimum 75% reduction in nitrogen and phosphorus, but that the 20 other water authorities, which account for 209 treatment stations, were in compliance with this figure for phosphorus but not for nitrogen.

Conformity with the provisions of Article 5(4) of the Directive must be considered in overall terms, and not by regional water authority. The Commission therefore believes that, on 31 December 1998, discharges of urban wastewater in the Netherlands were not in conformity with the Directive.

According to the information supplied by the Dutch authorities, these discharges should achieve conformity in 2005.

7.10.3. Treatment in cities

The Netherlands has 23 cities with a population equivalent of more than 150 000. On 31 December 1998, only the city of Haarlem had secondary treatment followed by full tertiary treatment of nitrogen and phosphorus. The 22 others, including Amsterdam, Eindhoven, The Hague and Rotterdam, had secondary treatment followed by tertiary treatment of phosphorus. Of these 22, only Arnhem and Rotterdam also had partial treatment of nitrogen on that date.

As stated above, the Netherlands plan to achieve conformity with the Directive in 2005.

7.11. Austria

7.11.1. Identification of sensitive areas

Austria did not believe that any water body in its territory corresponded to the criteria for the identification of sensitive areas. It confirmed this position in 1998, informing the Commission that the revision procedure required by the Directive had not resulted in the identification of any water body with the characteristics of a sensitive area.

The study carried out at the Commission's instigation in 1999 has revealed three rivers which should have been identified as sensitive due to the risk of eutrophication. These are the rivers March, Antiesen and Donaukanal. In January and February 2001, the Austrian authorities sent the Commission additional information on the monitoring of the quality of these rivers and the criteria used in Austria to evaluate eutrophication. These documents are being examined by the Commission.

7.11.2. Agglomerations affected by sensitive areas

13 Austrian agglomerations with a population equivalent of more than 10 000 are situated in the Austrian part of the catchment area of the Rhine and one agglomeration of more than 10 000 p.e. (Elbe catchment area) in the Austrian part of the catchment area of the Elbe. These two rivers flow into the coastal waters of the North Sea and the Baltic, which are eutrophicated and identified as sensitive. In addition, 11 Austrian agglomerations are situated in the catchment areas, which feed German lakes, which are also identified as sensitive.

The Austrian authorities have called for the introduction of adequate tertiary treatment in 24 of these 25 agglomerations, even if, in its memorandum to the Commission in January 2001, Austria does not accept that its agglomerations contribute the pollution of the coastal waters of the North Sea and the Baltic.

Only the agglomeration of Bregenz-Kennelbach, in the catchment area of the Rhine, is not considered by the Commission to be in conformity with the provisions of the Directive on the protection of sensitive areas. This agglomeration did not have tertiary treatment of nitrogen on 31 December 1998. According to the information provided by the Austrian authorities, the relevant work is in progress.

O	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	25		1 871 885	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	24	96%	1 791 885	96%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	1	4%	80 000	4%

7.11.3. Treatment in cities

Austria has 20 cities with a population equivalent of more than 150 000.

- 10 of them, Bregenz, Dornbirn, Feldkirch, Hohenems, Innsbruck, Lenzing, Salzburg, Schwaz, St Pölten and Steyermühl, already had stringent (tertiary) treatment on 31 December 1998.

- The ten others, Graz, Klagenfurt, Krems, Linz, Pöls, Raum Gratkorn, Villach, Welser Heide, Vienna and Vienna Neustadt, had full secondary treatment on that date. In a memorandum to the Commission in January 2001, the Austrian authorities indicated that tertiary treatment of nitrogen and phosphorus was planned for these cities, although there is no obligation to do so under the Directive.

7.12. Portugal

7.12.1. Identification of sensitive areas

In June 1997, Portugal officially identified 41 water bodies as sensitive. The criteria applied were the combating of eutrophication and the need for tertiary treatment of microbiological pollution, in particular for the protection of bathing waters.

The study to check the sensitive areas identified, which was carried out in 1999-2000 at the Commission's instigation, shows that four additional water bodies should have been identified as sensitive. Because of eutrophication, these are the part of the Tagus estuary known as Cala do Norte and the Miranda dam in the catchment area of the Douro, near the Spanish frontier. To protect these two areas, which are identified in the study as potentially sensitive, the Commission believes that adequate stringent (tertiary) treatment measures should be taken over all of the catchment area of the Tagus and its estuary, in particular in Lisbon, and in the catchment area of the Douro. The other two water bodies referred to in this study, in connection with the protection of waters intended for the abstraction of drinking water, are at Marachão, on the Cávado river and Ponte Canas, near Lisbon. The measures which their protection would involve are geographically much more limited.

7.12.2. Agglomerations affected by sensitive areas

In October 1999, the Portuguese authorities sent the Commission a list of 27 agglomerations of more than 10.000 p.e. situated in the catchment areas of the sensitive areas identified by Portugal.²⁸ These agglomerations represent only 8% of the total load of the Portuguese agglomerations affected by the Directive. The tertiary treatment required is the treatment of nitrogen, phosphorus, microbiological pollution or a combination thereof. It should be noted that the tertiary treatment provided (treatment of nitrogen and/or phosphorus) in some of these agglomerations to combat eutrophication does not correspond to the Commission's interpretation, as explained in the third paragraph of Chapter 4 of this report. It should also be pointed out that Portugal has provided tertiary treatment of microbiological pollution in 24 of the 27 agglomerations affected by sensitive areas, treatment of nitrogen in 17 of them and treatment of phosphorus in 4.

On 31 December 1998, five of the 27 agglomerations were in conformity with the provisions of the Directive. These are: Faro, Olhão Nascente, Olhão Poente, Tavira and Amarante. The Portuguese authorities propose to achieve conformity for the other agglomerations in 2003 at the latest.

<i>P</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	27		1 333 517	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	5	18.5%	256 000	19.2%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	22	81.5%	1 077 517	80.8%

7.12.3. Treatment in cities

Portugal has 14 cities with a population equivalent of more than 150 000.

On 31 December 1998, the situation with regard to the treatment of waste water in these cities was as follows:

- Faro, Sistema de Alcanena and Vilamoura had tertiary treatment;
- Loures/Frielas and São João de Talha had secondary treatment;
- Aveiro and Lisbon had incomplete secondary treatment;

²⁸ For several of the sensitive areas in Portugal, there is no agglomeration of more than 10 000 p.e. in the corresponding catchment areas. The Commission would point out that there is no point in identifying areas as sensitive if no stringent treatment measure is to be taken, under Article 5 of the Directive, in the relevant catchment areas.

- Barreiro, Costa do Estoril, Cova da Beira, Matosinhos, Porto, Setúbal and Vila Nova de Gaia had no treatment at all.

Projects or work are in progress in ten of these fourteen cities. Portugal has announced that the planned treatment plants will be operational in 2005 at the latest.

7.12.4. Less sensitive areas

In 1997, the Portuguese national authorities identified all of their coastal waters, except the waters of the Algarve, as less sensitive. The regional authorities of the Azores and Madeira consider all their coastal waters to be less sensitive.²⁹

As stated in Chapter 5 of this report, the Commission believes that some of the areas identified by the Portuguese authorities do not fulfil the criteria set out in the Directive, in particular in view of the risk of contamination of a large number of bathing waters and shellfish waters.

In 1999, Portugal requested a derogation for the agglomeration of Costa do Estoril (720 000 p.e.) near Lisbon. This will be the subject of a Commission decision in 2001.

Apart from this agglomeration, the Commission believes that all Portuguese agglomerations of more than 15 000 p.e. should have at least secondary treatment on 31 December 2000, including those which discharge into the less sensitive areas identified by the Portuguese authorities.

7.13. Finland

7.13.1. Identification of sensitive areas

Finland has decided to implement stringent (tertiary) treatment over all its territory pursuant to Article 5(8) of the Directive. It is therefore not required to identify sensitive areas for the purposes of the Directive.

7.13.2. Agglomerations of more than 10 000 p.e.

According to the information sent to the Commission, the Finnish authorities have required the tertiary treatment of phosphorus for all agglomerations of more than 10 000 p.e., but not tertiary treatment of nitrogen. In a memorandum to the Commission in February 2001, the Finnish authorities justified this approach by saying that, when the Directive was transposed into Finnish law in 1994, scientists were unanimous in considering phosphorus to be the main cause of the eutrophication of Finnish freshwaters and the coastal waters of the Baltic.

²⁹ In January 1996, the Portuguese authorities sent the decisions of the autonomous regions of the Azores and Madeira to the Commission, to consider all their coastal waters as less sensitive.

The Commission challenges this interpretation. Scientific documents published in 1995 and 1996,³⁰ which refer to earlier observations and articles, show, even then, the importance of both nitrogen and phosphorus discharges as regards eutrophication of the Baltic and state that, depending on local conditions, phosphorus seems to be the cause of eutrophication in some parts of the sea and nitrogen in others. In a memorandum to the Commission in February 2001, the Finnish authorities also point out that, after 1995-1996, it became clear that, apart from phosphorus, nitrogen could also be causing the eutrophication of certain parts of the Baltic.

It is also important to note that discharges to one part of the Baltic will be carried to other parts of the sea where they are likely to have an adverse effect on the environment. Given this situation, the Commission believes that tertiary treatment of both nitrogen and phosphorus is essential under the Directive in all agglomerations of more than 10 000 p.e. situated in the catchment areas which flow in the Baltic. It also believes that the Finnish authorities have failed to show that the elimination of nitrogen will not have any impact on the level of eutrophication in the Baltic.

On this basis, the evaluation carried out by the Commission shows that only 11 of the 85 agglomerations of more than 10 000 p.e. in Finland complied with the provisions of the Directive on 31 December 1998.

The Finnish authorities have announced their intention to improve the treatment of effluent from these agglomerations in the next few years, in particular by considering the tertiary treatment of nitrogen.

<i>FI</i>	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	85		4 352 317	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	11	12.9%	478 360	11.0%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	74	87.1%	3 873 957	89.0%

³⁰ Nitrogen and phosphorus as production limiting factors in the estuarine waters of the eastern Gulf of Finland, in Marine Ecology Progress Series, vol 129: 283-294, 1995.
Third Periodic Assessment of the State of the Marine Environment of the Baltic, 1989-1993, Executive Summary, Baltic Environment Proceedings No 64 A, Helsinki Commission, Baltic Marine Environment Protection Commission, 1996.

7.13.3. Treatment in cities

Finland has six cities with a population equivalent of more than 150 000. These are: Espoo, Helsinki, Jyväskylä, Lahti, Tampere and Turku. At the end of 1998, all of them were provided with secondary treatment and tertiary treatment of phosphorus. However, the Commission believes the tertiary treatment of nitrogen is lacking in the six cities situated in the catchment area of the Baltic.

7.14. Sweden

7.14.1. Identification of sensitive areas

In 1994, Sweden identified all of its waters as sensitive areas. In June 1998, Sweden confirmed this identification to the Commission, indicating that the criterion applied was eutrophication and that the type of tertiary treatment required depends on the water bodies concerned.

7.14.2 Agglomerations of more than 10 000 p.e.

Sweden believes that tertiary treatment of phosphorus is necessary in all its agglomerations of more than 10 000 p.e. to combat eutrophication and the risk of the eutrophication of these freshwaters, estuaries and coastal waters.

Sweden has also indicated that the coastal waters of the North Sea and the Baltic, from the Norwegian border to the municipality of Norrtälje, including the coastal waters to the east of the island of Öland and around the island of Gotland, were sensitive to discharges of nitrogen.

The Swedish authorities therefore believe that discharges from agglomerations of more than 10 000 p.e. which reach the Baltic to the north of the municipality of Norrtälje do not require tertiary treatment of nitrogen. They also believe that discharges of nitrogen from other agglomerations of more than 10 000 p.e. in the central part of the country, to the south, do not contribute to the eutrophication of coastal waters as there is sufficient natural retention of nitrogen during the transfer to the catchment area between the point of emission of the pollutant load and the sea.

For the reasons explained in the Chapter on Finland, the Commission does not agree with Sweden that certain discharges of nitrogen do not contribute to eutrophication. It believes that, since discharges of nitrogen and phosphorus are both responsible for the appearance of marine eutrophication and discharges to a coastal area are carried to other adjacent coastal areas, all Swedish agglomerations of more than 10 000 p.e. should have been provided with treatment of nitrogen by 31 December 1998. In addition, the Commission believes that, for the agglomerations situated in the south, central part, discharges of nitrogen contribute to the pollution of the sensitive areas, even allowing for the partial natural retention of nitrogen in the catchment areas.

The Commission therefore believes that, out of 144 Swedish agglomerations of more than 10 000 p.e., only 34 which had installed secondary treatment followed by full tertiary treatment of nitrogen and phosphorus by 31 December 1998 are in conformity with the Directive. These 34 agglomerations which are in conformity represent 34% of the load of Swedish agglomerations of more than 10 000 p.e.

S	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	144		7 263 240	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	34	23.6%	2 451 910	33.8%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	110	76.4%	4 811 330	66.2%

7.14.3 *Treatment in cities*

Sweden has seven cities with a population equivalent of more than 150 000.

- Four of them, Stockholm, Kristianstad, Malmö and Helsingborg, had secondary treatment followed by tertiary treatment of nitrogen and phosphorus on 31 December 1998 (1 September 1999 in the case of Malmö).

- The three others, Gothenburg, Lidingö and Linköping, had secondary treatment and tertiary treatment of phosphorus on that date. The latter three have planned to add the treatment of nitrogen.

7.15. **United Kingdom**

7.15.1. *Identification of sensitive areas*

The United Kingdom carried out an initial identification of sensitive areas in 1994 and 1995 based on eutrophication. In this way, 33 freshwater bodies were identified in England and Wales, three in Scotland and two in Northern Ireland. In 1998, again with reference to eutrophication, 47 further water bodies were identified in England and Wales and three extensions to previously identified water bodies. The Scottish authorities in 2000 announced the identification of the Ythan estuary as a sensitive area in terms of eutrophication. Lastly, in February 1997, three English rivers were identified as sensitive with regard to protection against nitrates in waters intended for the abstraction of drinking water.

The sensitive areas identified in Northern Ireland have not yet been reviewed.

The verification study carried out in 1999 at the Commission's request shows a certain number of additional water bodies which should have been identified as sensitive. It shows that a number of estuaries and coastal waters, in particular the estuaries of the Thames, the Wash, the Humber, the Deben and Colne, the waters of Southampton and the coastal waters of North Wales, north-western England and south-western Scotland do not meet the criteria of the Directive with regard to the risk of eutrophication.

Another verification study carried out in 2000 for Northern Ireland shows the following coastal waters which also should have been identified as sensitive. Bann Estuary, Carlingford Lough, Belfast Lough and Lough Foyle.

Furthermore, the Commission believes that the United Kingdom should also have identified bathing waters and shellfish waters as sensitive given the fact that some of these waters are known to be polluted by discharges of urban waste waters and the need for the tertiary treatment of the microbiological pollution contained in these discharges in order to comply with Community legislation.

7.15.2. Agglomerations affected by sensitive areas

According to the information supplied by the UK authorities, 207 agglomerations of more than 10 000 p.e. are affected by the sensitive areas which have been identified by the United Kingdom and should therefore be provided with tertiary treatment. These represent an organic load of 13 386 805 p.e.

For the purposes of evaluating the conformity of these agglomerations, the Commission believes that only 19 were in conformity with the provisions of the Directive on 31 December 1998. This evaluation has, in particular, taken account of the fact that a large number of these agglomerations are not only situated in the catchment areas of freshwater bodies which have been identified as sensitive in terms of eutrophication and which, according to the UK authorities, require tertiary treatment of phosphorus, but also in the catchment areas of coastal waters and estuaries which the Commission believes should have been identified as sensitive. The Commission therefore considers that these agglomerations require additional tertiary treatment of nitrogen to protect estuaries and coastal waters.

A total of 150 agglomerations are therefore not in conformity with the provisions of the Directive according to the Commission.

Furthermore, the Commission considers that 43 agglomerations have up to 2004 to achieve conformity with the Directive. These are the agglomerations affected by the sensitive areas identified by the United Kingdom during the 1998 revision, which could not be identified initially.

Lastly, it should be pointed out that this evaluation of agglomerations affected by sensitive areas identified by the United Kingdom does not take account of all the agglomerations situated in the catchment areas of water bodies which the Commission believes should have been identified as sensitive. The Commission therefore considers that agglomerations such as London, Leeds, Hull and Southampton should have been provided with tertiary treatment by 31 December 1998. These agglomerations are not included in the evaluation summarised in the following table.

UK	NUMBER	%	LOAD (p.e.)	%
AGGLOMERATIONS AFFECTED BY SA	212		13 386 805	
AGGLOMERATIONS IN CONFORMITY ON 31.12.98	19	9.0%	1 536 902	11.5%
AGGLOMERATIONS NOT IN CONFORMITY ON 31.12.98	150	70.7%	10 180 629	76.0%

7.15.3. Treatment in cities

According to the information supplied by the UK authorities in January 2001 and the Commission's estimate, the UK has 97 towns and cities with a population equivalent of more than 150 000.

On 31 December 1998, the situation with regard to the treatment of waste water in these towns and cities was as follows:

- 2 had secondary treatment following by full tertiary treatment: Milton Keynes and Coventry.
- 61 had full secondary treatment or partial tertiary treatment. As stated above, the Commission believes that many of these towns and cities, such as London, should have tertiary treatment to combat the eutrophication of coastal waters and estuaries.
- 12 had incomplete secondary treatment or primary treatment (Aberdeen, Glasgow, Edinburgh, Newcastle upon Tyne, Liverpool, Great Yarmouth, Cardiff, Bristol, Sandown, Worthing, Gillingham, Eastbourne).
- 11 did not treat their effluent (Dundee, Sunderland/Whitburn, Middlesbrough, Hull, Bedington, Port Talbot, Torbay, Portsmouth, Brighton, Hastings, Dover/Folkestone).
- The information is incomplete for the 11 other towns and cities.

7.15.4. Less sensitive areas

Initially, in 1994 and 1995, the United Kingdom identified 49 coastal water bodies and estuaries as less sensitive in England, 9 in Wales, 24 in Scotland and 3 in Northern Ireland, for the purpose of discharging urban waste water with less than secondary treatment. After several decisions on the part of the UK authorities, in 1998 and 2000, to withdraw a large number of the less sensitive areas, there are now, in February 2001, five less sensitive areas in the UK: three in Scotland, Lerwick, Strang (Kirkwall) and the Minch (Stornoway), and two in Northern Ireland, Bangor and Portrush/Portstewart.

As stated in Chapter 5 of this report, in December 2000 the Commission received studies on the discharges from the Scottish agglomerations of Stornoway and Lerwick into two less sensitive areas. These studies are being evaluated.

The Commission believes that other agglomerations of more than 15 000 p.e. which discharge their effluent into less sensitive areas should have had secondary treatment since 31 December 2000.

8. INFRINGEMENT PROCEDURES

Pursuant to Article 226 of the consolidated version of the Treaty establishing the European Community, the Commission may open an infringement procedure against Member States which have failed to meet their obligations under the Directive.

At present (June 2001) nine Member States have an ongoing infringement procedure. In sum there are 14 ongoing infringement procedures in the field of the Urban Waste Water Treatment Directive and further procedures are being prepared. In the case of Belgium, France, Germany, Greece, Ireland, Spain, and United Kingdom a reasoned opinion has already been sent to Member States.

In particular, in the case of Belgium (C-236/99) judgement has already taken place on the 6.7.2000, as Brussels is still missing a treatment plant for two thirds of its waste water load. With regard to Italy/Milan (C-396/00) - Milan counting about 2 700 000 inhabitants, has no treatment plant at all - the case is pending before court.

The reasons for non-compliance on the above cases are as follows:

Belgium:

Infringement of Article 3, 5 and 17 for too late identification of sensitive areas and therefore non-compliance with the provisions for sensitive areas / incomplete implementation program.

France:

Infringement of Article 5 for failing to identify sensitive areas and therefore non-compliance with the provisions for sensitive areas.

Germany:

Infringement of Article 5 and 15 for incomplete identification of sensitive areas and legislation not being in conformity with the Directive.

Greece:

Infringement of Article 3 and 5 for no, respectively, insufficient treatment in sensitive areas in the region of Thriassion and Athens.

Ireland:

Infringement of Article 3, 5, 14, and 19 for failing to identify sensitive areas and not carrying out a review of sensitive areas / for failing to adopt legislation.

Italy (Milan):

Infringement of Article 5 for failing to identify sensitive areas and non-compliance with the provisions in sensitive areas.

Spain:

Infringement of Article 5 for failing to identify sensitive areas and therefore non-compliance with the provisions in sensitive areas.

United Kingdom:

Infringement of Article 5 and 6 for failing to identify sensitive areas, and in particular according to the criteria of Annex IIA / for failing to identify less sensitive areas in accordance to Annex IIB / for not carrying out a review of identification of those areas.

9. FORTHCOMING TASKS FOR THE COMMISSION

At the beginning of 2001, the Commission started the process of verifying compliance with the provisions of the Directive as regards the deadline of 31 December 2000. By that date, agglomerations of more than 15 000 p.e. which do not discharge their effluent into sensitive areas or their catchment areas should have been provided with a collecting system and secondary treatment. Furthermore, biodegradable industrial waste water from plants in the food-processing sectors listed in the Directive producing a pollution load of more than 4 000 p.e. and discharged directly into receiving waters should have complied with the discharge requirements laid down in the prior regulations or specific authorities.

The Commission has also started verifying the results of the monitoring of discharges from the agglomerations affected by the deadline of 31 December 1998.

It will present the results of these checks in the next report on the implementation of the Directive.

In addition, the Commission is concerned about the implementation situation as described in this report and would encourage Member States to speed up the investment needed to comply with the Directive.

Infringement procedures, financial aid and bringing pressure to bear on decision-makers by increasing public awareness are the means by which the Commission will continue to encourage progress.

- The situation will be monitored and infringement procedures will be opened in respect of any failure to comply with the requirements of the Directive. This will be done if the Member States do not provide the Commission with the information it needs to verify compliance with the deadlines and if they do not provide the general public with the information provided in the Directive to ensure transparency, in particular the situation reports provided for in Article 16 of the Directive.
- The authorisation and payment of Community aid under the Structural Funds and the Cohesion Fund are dependent on strict compliance with the requirements of the Directive, in particular as regards the level of treatment of waste water and the operation of plants once work has been completed.

- Greater attention must be focused on decision-makers and on local and regional authorities and organisations in order to raise awareness and to encourage them to act in a manner which will enhance compliance with the Directive at their level. This can be done by increasing public awareness, by acting through the communication networks between decision-makers in towns and cities and by means of bilateral meetings between the Member States and the Commission to which regional and local representatives are invited.

The Fifth Framework Programme for Research, Technological Development and Demonstration (1998-2002) has promoted research on the subject of urban waste water treatment within the activity of the Key Action “Sustainable management and quality of water“. In particular, research projects have been launched - among others - on sewage sludge minimisation, on new processes for nitrogen removal, on simplified processes (constructed wetlands) for small/medium communities and for tourist areas, on the online control systems for optimising waste water treatment. Information on the on-going research projects can be obtained from the Commission - DG Research - Unit I/3 eesd@cec.eu.int, and directly from the web site <http://www.cordis.lu/eesd/kal/home.html>.

It is also essential for technical assistance to be given to small and medium-sized agglomerations to help them achieve compliance with the Directive by the deadline of 2005. The municipalities and local authorities involved, which are responsible for making the investment needed, are often less well structured, organised and equipped than cities when it comes to choosing the sewage treatment plants which meet their requirements and to having them built. The Commission wishes to increase the support it gives for the development of treatment technology suitable for small and medium-sized agglomerations, in particular by providing financial assistance through LIFE-Environment for innovative and demonstration activities and by publishing a thematic guide on the subject in 2001 and organising a programme of conferences targeted at those who decide on investments.

Lastly, more help needs to be given to the candidate countries for accession to the EU to achieve compliance with the Directive. This is justified since the current standard of collecting and waste water treatment systems in these countries is generally very poor. The Commission is obviously aware of the considerable cost which complying with the Directive means for these countries. This cost is increased by the fact that discharges from agglomerations in most of these countries will require very stringent treatment since they will reach seas which are very sensitive to eutrophication: the North Sea, the Baltic, the Adriatic and the Black Sea. The candidate countries have all asked for a transitional period for the implementation of the Directive. In the coming years, the Commission must continue to support technical assistance schemes, in particular twinning schemes between the Member States and the candidate countries in order to provide them with the technical and administrative assistance they need to adopt Community rules. Community assistance will also continue to be provided, in particular through ISPA, for the investment needed.

10. CONCLUSION

The information provided by the Member States for the Commission’s verification of the situation on 31 December 1998 confirms that considerable efforts have been made to achieve compliance with the Directive. These efforts have already led to significant improvements in the quality of a large number of European rivers and lakes.

The Council Directive concerning urban waste water treatment is a key piece on legislation affecting the quality of water in the European Union. Its provisions requiring major infrastructure measures, therefore cause significant investments for Member States.

Member States obligations/deadlines in terms of treatment works became effective as from 1998 with important implementation deadlines in 2000 and 2005.

DG Environment is working closely with EEA to obtain monitoring information, to follow trends on water quality and to assess environmental impact of the Directive. EEA reports indicate that where efforts have been made to implement the directive the result was a significant improvement of water quality of many European rivers and lakes. It is expected that the Directive will have further significant impact upon water quality in the EU.

However, the verification has revealed major shortcomings in most of the Member States as regards compliance with the obligations of the Directive, chiefly in two respects:

- For a large number of agglomerations, sometimes very large ones such as London and Paris, the level of treatment required for waste water has been underestimated. Many of the Member States have not recognised the sensitive nature of the aquatic environments which receive waste water. Apart from a failure to identify properly the sensitive nature of waters close to the point at which effluent is discharged, some of the Member States have ignored the fact that the pollutants contained in waste water which has not been properly treated could migrate via the river basin into the marine environment. They have therefore not provided for the necessary treatment measures to tackle the problem of the pollution of estuaries or downstream stretches of rivers caused by cities often situated far upstream in the river basin or to reduce the overall problems of marine eutrophication which are increased by all discharges from river basins which flow directly or indirectly into marine waters. The North Sea, the Baltic and the Adriatic are therefore severely eutrophicated, but some of the Member States have not taken all necessary measures to reduce the pollution.
- Major delays in implementing the Directive have been found in most of the Member States. Taking the 3 247 agglomerations in which Member States have decided to provide tertiary treatment out of a total of some 20 000 agglomerations affected by the Directive, only Denmark and Austria were in a situation very close to conformity on 31 December 1998. However, it is important to note that the situation can change very quickly and that most of the Member States have plans to achieve conformity in these agglomerations over the next few years.

Furthermore, verification of the situation on 31 December 1998 shows that a large number of the 527 cities with a population equivalent of more than 150 000 did have a sufficient standard of treatment on that date to meet the protection objectives laid down by the Directive. However, 37 of them, including Brighton, Brussels, Cork, Milan, Porto and its environs and San Sebastian were discharging all of their waste water untreated into the natural environment on that date. 57 others, including Aberdeen, Athens, Barcelona, Dublin, Florence, Liège and Marseille were also discharging a large part of their effluent untreated on that date or had a very clearly insufficient level of treatment in place. Here too, the situation is changing rapidly and some of these cities made the necessary investments in 1999 and 2000, or plan to complete work soon.

Many of the Member States seemed reluctant to provide the information requested by the Commission. The information requested in April 1999 and March 2000 arrived very late, in some cases more than a year late. Moreover, Germany and France have not provided any information about the situation with regard to the treatment of urban wastewater on 31 December 1998.

The Commission is still verifying conformity with the obligations imposed by the Directive, in particular as regards the second deadline of 31 December 2000. This further verification should confirm that substantial progress has been made by the Member States in complying with the Directive.

It is important to remember that Community aid under the Structural Funds and the Cohesion Fund may be allocated for the investment required to comply with the Directive.

The Commission also intends to increase its support to small and medium-sized agglomerations affected by the deadline of 31 December 2005 as well as to the candidate countries, for which the implementation of the Directive represents a major challenge.