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STATUTORY RULES OF NORTHERN IRELAND

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**1998 No. 397**

**WATER AND SEWERAGE**

**Surface Waters (Dangerous Substances)  
(Classification) Regulations (Northern Ireland) 1998**

*Made* - - - - *16th November 1998*

*Coming into operation* *1st February 1999*

The Department of the Environment, in exercise of the powers conferred by section 4B(1) and (2) of the Water Act (Northern Ireland) 1972(1) and now vested in it(2), and by Article 56B(1) and (2) of the Water and Sewerage Services (Northern Ireland) Order 1973(3), and of every other power enabling it in that behalf, hereby makes the following Regulations:

**Citation and commencement**

1. These Regulations may be cited as the Surface Waters (Dangerous Substances) (Classification) Regulations (Northern Ireland) 1998 and shall come into operation on 1st February 1999.

**Interpretation**

2.—(1) In these Regulations—

“coastal waters” means any tidal waters which are within the area which extends landward from the baselines from which the breadth of the territorial sea adjacent to Northern Ireland is measured as far as the fresh-water limit of any waterway;

“inland freshwaters” means that part of any waterway above the freshwater limit; and

“relevant territorial waters” means the waters which extend seaward for 3 miles from the baselines from which the breadth of the territorial sea adjacent to Northern Ireland is measured.

**Classification of waters**

3.—(1) The classification DS1 and the criteria for that classification set out in Schedule 1 shall apply for classifying inland freshwaters.

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(1) 1972 c. 5 (N.I.) as amended by the Water and Sewerage Services (Amendment) (Northern Ireland) Order 1993 S.I. 1993/3165 (N.I. 16) Art. 16  
(2) S.R. & O. (N.I.) 1973 No. 504 Art. 4  
(3) S.I. 1973/70 (N.I. 2) as amended by S.I. 1993/3165 (N.I. 16) Art. 12

(2) The classification DS2 and the criteria for that classification set out in Schedule 2 shall apply for classifying coastal waters and relevant territorial waters.

(3) The classification DS3 and the criteria for that classification set out in Schedule 3 shall apply for classifying relevant territorial waters, coastal waters and inland freshwaters.

(4) The classification DS4 and the criteria for that classification set out in Schedule 4 shall apply for classifying inland freshwaters with a view to reducing the pollution of those waters by the substances listed in that Schedule.

(5) The classification DS5 and the criteria for that classification set out in Schedule 5 shall apply for classifying coastal waters and relevant territorial waters with a view to reducing the pollution of those waters by the substances listed in that Schedule.

(6) The classification DS6 and the criteria for that classification set out in Schedule 6 shall apply for classifying inland freshwaters with a view to reducing the pollution of those waters by the substances listed in that Schedule.

(7) The classification DS7 and the criteria for that classification set out in Schedule 7 shall apply for classifying coastal waters and relevant territorial waters with a view to reducing the pollution of those waters by the substances listed in that Schedule.

### **Sampling and analysis**

4.—(1) The provisions of this regulation apply as respects the taking of samples of inland freshwaters, coastal waters and relevant territorial waters in relation to their classification in accordance with regulation 3.

(2) Samples shall be taken under this regulation at a frequency sufficient to show any changes in the aquatic environment, having regard in particular to natural variations in hydrological conditions.

(3) Where a discharge containing any substance listed in column (1) of any of the Schedules is made to waters mentioned in paragraph (1), samples shall be taken at a point sufficiently close to the discharge point to be representative of the quality of the aquatic environment in the area affected by the discharge,

(4) Samples taken under this regulation in relation to relevant territorial waters, coastal waters or inland freshwaters to which the classification DS1, DS2 or DS3 is for the time being applied shall be analysed using the relevant reference method of measurement respectively specified in column (3) of Schedule 1, 2 or 3 or other methods which have limits of detection, precision and accuracy at least as good.

### **Modification of Section 4C of the Water Act (Northern Ireland) 1972**

5. Section 4C of the Water Act (Northern Ireland) 1972(4) shall have effect as if—

(a) it imposed a duty on the Department to exercise the powers conferred on it by that section to apply the classification—

- (i) DS1 to all inland freshwaters;
- (ii) DS2 to all coastal waters and relevant territorial waters;
- (iii) DS3 to all relevant territorial waters, coastal waters and inland freshwaters;
- (iv) DS4 to all inland freshwaters;
- (v) DS5 to all coastal waters and relevant territorial waters;
- (vi) DS6 to all inland freshwaters;
- (vii) DS7 to all coastal waters and relevant territorial waters; and

(b) in relation to the establishment of water quality objectives in pursuance of that duty, subsections (3) to (7) of that section were omitted.

**Revocations**

6. The Pollution of Waters by Dangerous Substances Regulations (Northern Ireland) 1990<sup>(5)</sup> and the Pollution of Waters by Dangerous Substances (Amendment) Regulations (Northern Ireland) 1992<sup>(6)</sup> are hereby revoked.

Sealed with the Official Seal of the Department of the Environment on

L.S.

16th November 1998.

*R. W. Rogers*  
Assistant Secretary

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<sup>(5)</sup> S.R. 1990 No. 38  
<sup>(6)</sup> S.R. 1992 No. 401

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## SCHEDULE 1

regulations 3(1) and 4(4)

**Criteria for Classification DS1**

The criteria for the classification DS1 are that the annual mean concentration of each substance listed in column (1) of Table 1 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit specified in column (2) of that Table.

**TABLE 1**

(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
Aldrin	0.01	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent with a limit of determination of 2.5 ng/l <sup>(1)</sup> .
Dieldrin	0.01	
Endrin	0.005	
Isodrin	0.005	
Cadmium and its compounds	5 (total cadmium: both soluble and insoluble forms)	Atomic absorption spectrophotometry after preservation and suitable treatment of the sample. The limit of determination is .25 µg/litre <sup>(2)</sup> .
Carbon tetrachloride	12	Gas chromatography. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
Chloroform	12	Gas chromatography. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
DDT (all isomers)	0.025	Gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination for total DDT is approximately 4 ng/l, depending on the number of
(1)	The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.	
(2)	The accuracy and precision of the method must be plus or minus 30%.	

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(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
para-para-DDT	0.01	extraneous substances present in the sample <sup>(1)</sup> . Gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination for total DDT is approximately 4 ng/l, depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Hexachlorobenzene	0.03	Gas chromatography with electron capture after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Hexachlorobutadiene	0.1	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l, depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Hexachlorocyclohexane (all isomers)	0.1	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l depending on the number of
<p>(1) The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.</p> <p>(2) The accuracy and precision of the method must be plus or minus 30%.</p>		

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(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
Mercury and its compounds	1 (total mercury: both soluble and insoluble forms)	extraneous substances present in the sample <sup>(1)</sup> . Flameless atomic absorption spectrophotometry after suitable pre-treatment of the sample which takes account in particular of pre-oxidation of the mercury and of successive reduction of the mercury ions Hg(II). The limit of detection must be 0.1 µg/litre <sup>(2)</sup> .
Pentachlorophenol and its compounds	2	High pressure liquid chromatography or gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
<p>(1) The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.</p> <p>(2) The accuracy and precision of the method must be plus or minus 30%.</p>		

## SCHEDULE 2

regulations 3(2) and 4(4)

### Criteria for Classification DS2

The criteria for the classification DS2 are that the annual mean concentration of each substance listed in column (1) of Table 2 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit specified in column (2) of that Table.

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TABLE 2

(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
Aldrin	0.01	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent with a limit of determination of 2.5 ng/l <sup>(1)</sup> .
Dieldrin	0.01	
Endrin	0.005	
Isodrin	0.005	
Cadmium and its compounds	2.5 (dissolved cadmium)	
Carbon tetrachloride	12	Gas chromatography. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
Chloroform	12	Gas chromatography. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
DDT (all isomers)	0.025	Gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination for total DDT is approximately 4 ng/l, depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
para-para-DDT	0.01	Gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination for total DDT is approximately 4 ng/

(1) The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.

(2) The accuracy and precision of the method must be plus or minus 30%.

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(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
Hexachlorobenzene	0.03	1, depending on the number of extraneous substances present in the sample <sup>(1)</sup> .  Gas chromatography with electron capture after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Hexachlorobutadiene	0.1	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l, depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Hexachlorocyclohexane (all isomers)	0.02	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination shall be within the range 1 to 10 ng/l depending on the number of extraneous substances present in the sample <sup>(1)</sup> .
Mercury and its compounds	0.3 (dissolved mercury)	Flameless atomic absorption spectrophotometry after suitable pre-treatment of the sample which takes account in particular of pre-oxidation of the mercury and of successive reduction of the mercury ions
<p>(1) The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.</p> <p>(2) The accuracy and precision of the method must be plus or minus 30%.</p>		



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(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
Pentachlorophenol and its compounds	2	Hg(II). The limit of detection must be .03 µg/litre <sup>(2)</sup> . High pressure liquid chromatography or gas chromatography with electron capture detection after extraction by means of a suitable solvent. The limit of determination is 0.1 µg/litre <sup>(1)</sup> .
(1) The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination. (2) The accuracy and precision of the method must be plus or minus 30%.		

## SCHEDULE 3

regulations 3(3) and 4(4)

**Criteria for Classification DS3**

The criteria for the classification DS3 are that the annual mean concentration of each substance listed in column (1) of Table 3 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit specified in column (2) of that Table.

**TABLE 3**

(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
1,2-Dichloroethane	10	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent or gas chromatography following isolation by means of the “purge and trap” process and trapping by

*Note*

The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.

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(1) <i>Substance</i>	(2) <i>Concentration in microgrammes per litre (annual mean)</i>	(3) <i>Reference method of measurement</i>
		using a cryogenically cooled capillary trap. The limit of determination is 1 µg/litre. ( <i>see Note</i> )
Trichloroethylene	10	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination is 0.1 µg/litre. ( <i>see Note</i> )
Perchloroethylene	10	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination is 0.1 µg/litre. ( <i>see Note</i> )
Trichlorobenzene	0.4 (but there must be no significant increase over time in the concentration of trichlorobenzene in sediments and/or molluscs and/or shellfish and/or fish)	Gas chromatography with electron capture detection after extraction by means of an appropriate solvent or, when used to determine the concentration in sediments and organisms, after appropriate preparation of the sample. The limit of determination for each isomer separately is 10 ng/l for the water environment and 1 µg/kg of dry matter for sediments and organisms. ( <i>see Note</i> )

*Note*

The accuracy and precision of the method must be plus or minus 50% at a concentration which represents twice the value of the limit of determination.

SCHEDULE 4

regulation 3(4)

**Criteria for Classification DS4**

1. Subject to paragraph 2, the criteria for the classification DS4 are that—
  - (a) the annual mean concentration of each substance listed in column (1) of Table 4 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit shown in column (2) of that Table; and
  - (b) the concentration of each substance listed in column (1) of Table 5 in each sample so taken does not exceed the relevant limit shown in column (2) of that Table.
2. Where samples are taken in accordance with regulation 4 from more than one sampling point in relation to the waters in question, the criterion in paragraph 1(a) shall be satisfied in relation to the samples from each sampling point.

**TABLE 4**

(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre) (annual mean)</i>
Arsenic	50
Atrazine and Simazine	2 (for the two substances in total)
Azinphos-methyl	0.01
Dichlorvos	0.001
Endosulphan	0.003
Fenitrothion	0.01
Malathion	0.01
Trifluralin	0.1

**TABLE 5**

(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre)</i>
Triphenyltin and its derivatives	0.02
Tributyltin	0.02

**SCHEDULE 5**

regulation 3(5)

**Criteria for Classification DS5**

1. Subject to paragraph 2, the criteria for the classification DS5 are that—
  - (a) the annual mean concentration of each substance listed in column (1) of Table 6 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit shown in column (2) of that Table; and
  - (b) subject to paragraph 3, the concentration of each substance listed in column (1) of Table 7 in each sample so taken does not exceed the relevant limit shown in column (2) of that Table.
2. Where samples are taken in accordance with regulation 4 from more than one sampling point in relation to the waters in question, the criterion in paragraph 1(a) shall be satisfied in relation to the samples from each sampling point.
3. In relation to dichlorvos used as a treatment for sea-lice infestation, compliance with the relevant limit in column (2) of Table 7 shall be determined by reference only to samples taken as nearly as may be after 24 hours have elapsed since it was so used.

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**TABLE 6**

(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre) (annual mean)</i>
Arsenic	25
Atrazine and Simazine	2 (for the two substances in total)
Azinphos-methyl	0.01
Dichlorvos	0.04
Endosulphan	0.003
Fenitrothion	0.01
Malathion	0.02
Trifluralin	0.1

**TABLE 7**

(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre)</i>
Dichlorvos	0.6
Tributyltin	0.002
Triphenyltin and its derivatives	0.008

**SCHEDULE 6**

regulation 3(6)

**Criteria for Classification DS6**

1. Subject to paragraph 2, the criteria for the classification DS6 are that—
  - (a) the annual mean concentration of each substance listed in column (1) of Table 8 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant concentration specified in column (2) of that Table; and
  - (b) the concentration of mevinphos in each sample so taken does not exceed 0.02 microgrammes per litre.
2. Where samples are taken in accordance with regulation 4 from more than one sampling point in relation to the waters in question, the criterion in paragraph 1(a) shall be satisfied in relation to the samples from each sampling point.

**TABLE 8**

(1) <i>Substance</i>	(2) <i>Annual mean concentration in microgrammes per litre</i>
4-Chloro-3-methyl-phenol	40
2-Chlorophenol	50

(1) <i>Substance</i>	(2) <i>Annual mean concentration in microgrammes per litre</i>
2,4-Dichlorophenol	20
2,4-D (ester)	1
(non-ester)	40
1,1,1-Trichloroethane	100
1,1,2-Trichloroethane	400
Bentazone	500
Benzene	30
Biphenyl	25
Chloronitrotoluenes	10
Demeton	0.5
Dimethoate	1
Linuron	2
Mecoprop	20
Naphthalene	10
Omethoate	0.01
Toluene	50
Triazaphos	0.005
Xylene	30

## SCHEDULE 7

regulation 3(7)

**Criteria for Classification DS7**

1. Subject to paragraph 2, the criteria for the classification DS7 are that the annual mean concentration of each substance listed in column (1) of Table 9 in samples taken from the sampling point for the waters in question in accordance with regulation 4 does not exceed the relevant limit shown in column (2) of that Table.

2. Where samples are taken in accordance with regulation 4 from more than one sampling point in relation to the waters in question, the criterion in paragraph 1 shall be satisfied in relation to the samples from each sampling point.

**TABLE 9**

(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre) (annual mean)</i>
4-Chloro-3-methyl-phenol	40

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(1) <i>Substance</i>	(2) <i>Limit (in microgrammes per litre) (annual mean)</i>
2-Chlorophenol	50
2,4-Dichlorophenol	20
2,4-D (ester)	1
(non-ester)	40
1,1,1-Trichloroethane	100
1,1,2-Trichloroethane	300
Bentazone	500
Benzene	30
Biphenyl	25
Chloronitrotoluenes	10
Demeton	0.5
Dimethoate	1
Linuron	2
Mecoprop	20
Naphthalene	5
Toluene	40
Triazaphos	0.005
Xylene	30

### EXPLANATORY NOTE

*(This note is not part of the Regulations.)*

These Regulations prescribe a system of classifying the quality of inland freshwaters, coastal waters and relevant territorial waters (as defined in regulation 2).

Regulation 3 and Schedules 1 to 7 create a system for classifying waters according to the presence in them of concentrations of the dangerous substances listed in the Schedules.

Sampling requirements are prescribed in regulation 4.

Regulation 5, by modifying section 4C of the Water Act (Northern Ireland) 1972, requires (and enables) the Department of the Environment to establish water quality objectives for those dangerous substances by applying the classifications prescribed in the Regulations. The Regulations, in requiring the establishment of water quality objectives for the dangerous substances listed in the Schedules, fulfil the requirements of Articles 3 and 7 of Council Directive [76/464/EEC](#) in relation to the families and groups of substances within List I and List II respectively of that Directive.

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Regulation 6 revokes the Pollution of Waters by Dangerous Substances Regulations (Northern Ireland) 1990 and the Pollution of Waters by Dangerous Substances (Amendment) Regulations (Northern Ireland) 1992, which formerly imposed controls on discharges of substances within List I of that Directive.