

HILLMAN

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PROPOSAL FOR A COUNCIL DIRECTIVE
ON THE LIMIT VALUES FOR DISCHARGES OF ALDRIN,
DIELDRIN AND ENDRIN INTO THE AQUATIC ENVIRONMENT

PROPOSAL FOR A COUNCIL DIRECTIVE
ON THE QUALITY OBJECTIVES REQUIRED FOR THE AQUATIC
ENVIRONMENT INTO WHICH ALDRIN, DIELDRIN AND ENDRIN ARE DISCHARGED

(presented by the Commission to the Council)

EXPLANATORY MEMORANDUM

1. Introduction

In adopting on 4 May 1976 a Directive on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (76/464/EEC)¹ the Council's purpose was to eliminate pollution caused by the substances included in the families and groups in List I in the Annex to the Directive.

The main task of the Commission's departments was therefore to choose the first series of substances from List I on the basis of their toxicity, persistence and bio-accumulation.

After consulting a group of national experts, it was decided to select three pesticides from the list: aldrin, dieldrin and endrin.

With regard to the substances given in List I, Article 6 of the Directive of 4 May 1976 lays down that the Commission shall put forward proposals on the limit values pertaining to the emission standards for the effluent and the quality objectives for the receiving water. Furthermore, Article 6 also makes it clear that the Member States are obliged to apply the limit values pertaining to the emission standards for effluent, except in cases where a Member State can prove that the quality objectives established are being met throughout the area which might be affected by the discharges.

These proposals concern the limit values pertaining to the emission standards and the quality objectives for the aquatic environment in respect of these three pesticides.

¹ O.J. No. L 129 of 18.05.1976, p.23.

2. The purpose of the Directives

2.1. The proposal for a Directive on limit values concerns:

- the limit values for emission standards for aldrin, dieldrin and endrin wastes discharged into surface waters;
- the time limits by when these values must be observed;
- the minimum frequency of sampling required in order to monitor the quality of effluent;
- the procedure for authorizing discharges of waste water which may possibly contain one or more of the following substances: aldrin, dieldrin, endrin;
- the reference method of analysis used to determine the concentration of these substances in discharges.

2.2. The proposal for a Directive on quality objectives concerns:

- the quality objective for the surface waters into which aldrin, dieldrin and endrin are discharged;
- the deadlines by when the quality objectives must be applied;
- the monitoring procedure in accordance with which the Member State must prove to the Commission that the quality objective established is being met and continuously maintained throughout the area which might be affected by the discharges;
- the authorization procedure for waste waters which might contain at least one of these substances: aldrin, dieldrin, endrin.

2.3. Scope

These proposals concern the same waters as in Directive 76/464/EEC, with the exception of ground water which will be protected by a separate Directive in accordance with Article 4 (4) of the above-mentioned Directive.

The waters covered by this proposal are as follows:

- inland surface water,
- (offshore) territorial waters,
- internal coastal waters.

The definitions of these waters contained in Article 1 (2) of Directive 76/464/EEC shall also apply with regard to this proposal.

3. Remarks on the preparation of the proposals

3.1. General remarks

Consultants were given three preliminary studies on these substances by the Commission's departments, namely:

- an ecotoxicological study of the toxicity, persistence and bio-accumulation of the substances, which would look into the ecological consequences of their presence in the aquatic environment;
- a technological study of the quantities of waste, of the possible ways of reducing their concentration in the effluent depending on the nature of the industrial source and of the cost of the measures required for so doing;

- an economic study of the effect of likely measures concerning investment and the cost price of the products in the industries concerned.

This proposal for a Directive was drawn up by the Commission's departments on the basis of these studies and after consultations with a group of national experts that met on three occasions.

3.2. Selecting industries where these substances occur in waste form

There are six industries where aldrin, dieldrin or endrin are likely to occur in plant waste.

These are indicated in the table below.

Industry	Quantity of aldrin, dieldrin or endrin handled per year	Number of factories in the Community	Quantity of aldrin, dieldrin or endrin discharged per year into water
Production of aldrin, dieldrin or endrin	5.100 t	1	360 kg
Mothproofing of wool and wool products	6 t	20	210 kg
Treating wood against termites	95 t	361	26 kg
Formulation ¹	517 t	17	1 kg
Treatment of electric cables against termites	26 t	2	Negligible quantity
Manufacture of varnish for protecting wood against termites	4,5 t	2	Negligible quantity

The above data refer to 1976-77.

As can be seen from the table, 95% of the aldrin, dieldrin or endrin discharged occurs in the production of the substances and in the mothproofing of wool and wool products. Experts therefore thought that only these two industries should be covered by the Community measures.

¹ The pure substance cannot be used as such.

It must be processed into a mixture which is suitable for use and which is obtained by crushing the substance and mixing it with solvents or other substances.

This process is called formulation.

4. Limit values

4.1. Limit values and time limits applying to the industrial production of aldrin, dieldrin or endrin

The only factory in the world which manufactures aldrin and dieldrin is to be found in the European Community.

Endrin is also manufactured by this plant and in the United States as well.

The total Community output of the three substances is roughly 5 000 tonnes per year while production capacity is put at 12 000 tonnes per year.

The concentration of the three substances which are discharged in waste water by the Community plant is 40 µg/l. An outflow of 750 000 m³ of waste water per month will mean 30 kg of these substances discharged each month into the aquatic environment.

Of the 750 000 m³ only the most polluted part, roughly 15 000 m³, is treated in a purification plant. The plant reduces the initial aldrin, dieldrin and endrin load by 6 000 kg to 1.5 kg per month.

The purification of 750 000 m³ of waste water per month is technically not possible, because this quantity is too large and the concentration of aldrin, dieldrin or endrin is too low. The further reduction of these pollutants in waste water is possible, if other waters which contain more of them than the average level of 40 µg/l mentioned above are duly identified and treated.

The poor state of the downstream drainage system which collects the effluent from different production units, together with rain water makes it difficult to identify the sources of pollution and prevents any significant reduction of the load of aldrin, dieldrin or endrin discharged.

However, by purifying a further part of the most polluted waters and/or by trying to reduce the pollution caused by the production process, it is estimated that aldrin, dieldrin or endrin emissions can be reduced by a factor of 2 and, in a few years time, by a factor of 10.

It is therefore proposed to adopt a progressive approach:

By 1 January 1982 the concentration in waste waters should be reduced to 20 $\mu\text{g}/\text{l}$.

By 1 January 1986 a further reduction down to 4 $\mu\text{g}/\text{l}$ should have been achieved.

It is not possible at the moment, however, to predict with any certainty that the reduction to 4 $\mu\text{g}/\text{l}$ can be reached within the proposed time limit.

If this does turn out to be the case, the Member State concerned may extend the time limit, with the Commission's agreement, provided that the manufacturer can prove at least nine months before the original deadline expires, i.e., before 1 April 1985 for the first occasion, that the abovementioned limit value cannot be achieved by using the best technical means available.

Where new plant is concerned, it is important to avoid creating new emissions which will pollute the environment; zero-rate is therefore proposed. On the other hand, given the present state of knowledge, it is by no means certain that a new plant could fulfil such a zero requirement.

This could either create a monopoly for the existing manufacturer or prevent him from building a new less polluting facility because the latter would be considered as a new plant and would have to have a zero emission level.

That is why the Member States are allowed to grant exceptions with the Commission's agreement. Nevertheless, the concentration level to be fixed must take into account those production processes which cause least pollution and the best technical means available for purifying effluent.

4.2. Determining the limit value and the application deadline for industries mothproofing wool and wool products

There are currently about twenty plants in the Community which mothproof wool and wool products. The annual quantity of pure substance used is roughly six tonnes.

Waste waters are discharged untreated, after being diluted in local purifying plants, or sometimes directly into the sea.

The mean concentration in these waste waters is 600 µg/l and the average amount of waste water is 175 m³ for each kg of dieldrin used. This corresponds to a load of 105 g of discharged dieldrin per kg used.

Activated carbon treatment is the only effective and economically viable method of purifying the waste water or recovering aldrin, dieldrin or endrin. A concentration of 60 µg/l in the waste water can easily be attained by using this technique. This would mean a reduction factor of 10 compared with present levels of concentration.

In order to allow sufficient time for the factories concerned to build treatment plant, it is proposed that this value should become binding from 1 January 1986.

With regard to new mothproofing units, the same arguments apply as for new production plant, and therefore it is proposed that the emission level should be zero.

4.3. Reference analysis method

Gas chromatography with electron capture detection is used almost exclusively by laboratories for analysing aldrin, dieldrin and endrin in the water.

This method has therefore been chosen as the reference method for this Directive.

A Member State may authorize another method to be used, if there is sufficient reason: the right laboratory equipment required for the reference method may not be available, for instance.

In this case the method employed must fulfil certain requirements with regard to detection limits, accuracy and precision. These requirements are defined in the proposal for a Council Directive on the methods of measurement and frequencies of sampling and analysis of the parameters for the quality required of surface water intended for the abstraction of drinking water in the Member States¹.

5. Quality objective

5.1. Determining the quality objective and the application deadline

The ecotoxicological study mentioned in 3.1 was taken as the scientific basis for determining the quality objective. The authors of the study, Professor Koeman and his assistant, Mr. Butijn, from the Agricultural University at Wageningen (Netherlands), reached the following conclusions:

¹ O.J. No. C 208 of 1 September 1978.

- (i) Despite the paucity of data available on the effects of these substances on the natural ecosystem it seems that a total concentration of 5 ng/l for aldrin, dieldrin and endrin taken together does not induce any harmful biological effects on the aquatic environment. This concentration can therefore be considered as the zero-impact level for the aquatic environment.
- (ii) However, under certain local conditions or when an additional safety margin is required, a safety factor may be added to this value.
- (iii) On the other hand, it may be possible to authorize a higher concentration in a limited area provided that the value of 5 ng/l is generally observed outside that area.

In view of these results, and after consulting the group of national experts, the Commission proposes that the value of 5 ng/l should be taken as the quality objective for the sum of the substances aldrin, dieldrin and endrin.

Nevertheless, in accordance with the study's conclusions, the Member State, with the Commission's agreement, may choose a less stringent quality objective in a limited geographical zone.

Owing to the danger which a high concentration of the substances represents for the aquatic environment, the deadline by when this quality objective should be achieved is fixed as 1 January 1982.

5.2. Monitoring procedure

Article 6 of Directive 76/464/EEC of 4 May 1976 lays down that the Council, acting on a proposal from the Commission, shall draw up a monitoring procedure whereby a Member State wishing to apply the quality objective method must prove to the Commission that the objective set has been met and continuously maintained throughout the area which might be affected by the discharges.

Given the current state of scientific knowledge, the only way of providing effective control is to analyse samples of the water to be taken from a specified area around the discharge outlet and downstream thereof. It is pointless to take samples right next to the discharge outlet before there is any chance of the waste being diluted in the recipient body, since the results of such measurements are not significant. The monitoring zone must lie between the area immediately next to the discharge outlet and the area where dilution has been so great that the aquatic ecosystem is no longer affected.

Within this zone, a network of sampling points should be established on a case-by-case basis in such a way that it is properly representative of the water quality.

The frequency with which samples are taken must make it possible to monitor the evolution of water quality continuously. The water samples shall be analysed using the method set out in Annex II.

The method of analysis to be employed shall be gas chromatography with electron capture detection, this being the method most frequently used.

6. Consultation of Parliament and the Economic and Social Committee

These proposals for Directives are based on Article 6 of Directive 76/464/EEC, which does not in fact lay down that Parliament and the Economic and Social Committee have to be consulted. Nevertheless, the Commission believes that, given their importance, these proposals should be sent to the above institutions for opinion.

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**Proposal for a Council Directive on the limit values
for discharges of aldrin, dieldrin and endrin into
the aquatic environment**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community¹, and in particular Article 6 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas Article 6 of Directive 76/464/EEC provides for limit values to be laid down for the emission standards relating to discharges of the substances in List I of the Annex to that Directive;

Whereas aldrin, dieldrin and endrin are halogenated organic compounds; whereas they are included in List I by virtue of their toxicity, persistence and bioaccumulation;

Whereas since that same Directive also provides for quality objectives to be laid down, the latter are defined in Council Directive²;

Whereas, since the water pollution caused by the discharge of these substances emanates almost entirely from plants which produce them and from the mothproofing of wool and wool products, limit values should be fixed for these two industrial activities and discharges should be made subject to a system of prior authorization;

¹OJ No L 129, 18 May 1976, p. 23

²

Whereas it should be laid down that Member States should fix the emission standards and time limits in compliance with the limits determined by the Council;

Whereas provision should be made for the authorization of discharges of substitute products in order to avoid a new danger to the Community aquatic environment;

Whereas ground water is to be covered by a special Directive and is not therefore included in the scope of this Directive,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive fixes limit values for emission standards and the time limits applicable to discharges into the aquatic environment from:
 - aldrin, dieldrin and endrin emanating from plants which produce them;
 - the use of dieldrin in the mothproofing of wool and wool products.
2. This Directive shall apply to the water defined in Article 1 of Directive 76/464/EEC, with the exception of ground water.

Article 2

For the purposes of this Directive:

- (a) "aldrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 1,4,4a,5,8,8a - hexahydro - 1,4 - endo - 5,8 - exo - dimethano-naphthalene (Chemical Abstract No. 309-00-2)¹;
- (b) "dieldrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 6,7 - epoxy - 1,4,4a,5,6,7,8,8a - octahydro - 1,4 - endo - 5,8 - exo - dimethano-naphthalene (Chemical Abstract No. 60-57-1)¹;
- (c) "endrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 6,7 - epoxy - 1,4,4a,5,6,7,8,8a - octahydro - 1,4 - endo - 5,8 - endo - dimethano-naphthalene (Chemical Abstract No. 72-20-8)¹;

¹ O.J. No. L 360, 30 December 1976, p. 206 et seq.

- (d) "limit value" means the maximum concentration of the substances in question which is permissible in the discharges;
- (e) "discharge" means the introduction into the waters referred to in Article 1(2) of aldrin, dieldrin or endrin;
- (f) "industrial plant" means a plant which is used for manufacturing aldrin, dieldrin or endrin and for moth-proofing wool and wool products with dieldrin;
- (g) "existing plant" means an industrial plant which is operational on the date of notification of this Directive;
- (h) "new plant" means an industrial plant which has become operational after the date of notification of this Directive.

Any extensions which have been made to existing plant and which result in an increase in the annual production on that site of aldrin, dieldrin or endrin of more than 50% compared with the mean output for 1975-78 shall be treated as new plant.

Article 3

The emission standards, time limits and sampling frequencies contained in the authorization referred to in Article 3 of Directive 76/464/EEC must maintain the limit values given in Annex 3 to this Directive.

The methods of analysis contained in the authorization must comply with the reference method given in Annex II to this Directive. When it is permissible to use other methods of analysis, these must adhere to the detection limit, accuracy and precision given in Annex II. The authorization referred to in Article 3 of the Directive referred to above may not be granted for a period exceeding five years.

Article 4

Where another product is substituted for aldrin, dieldrin or endrin, any discharge likely to contain such substitute product into the waters referred to in Article 1(2) by an industrial plant shall require prior authorization by the competent authority in the Member State concerned.

Article 5

1. Member States shall bring into force the measures necessary to comply with this Directive within two years of its notification. They shall forthwith inform the Commission thereof.
2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt in the field governed by this Directive.

Article 6

This Directive is addressed to the Member States.

Done at

For the Council

The President

ANNEX I

The limit values which the emission standards must not exceed, the time limits and sampling frequencies to be applied to aldrin, dieldrin and endrin used in industrial plants.

1. Existing plants which manufacture aldrin, dieldrin and/or endrin

The limit value for the monthly overall concentration of aldrin, dieldrin and endrin¹ discharges in an outflow of 750 000 m³ of waste water per month shall be fixed as follows:

- from 1 January 1982, 20 ug/l for a monthly load of 15 kg;
- from 1 January 1986, 4 ug/l for a monthly load of 3 kg.

In order to verify that the limit values are being observed, measurements are to be taken at least once a day from samples which are statistically representative of the discharges.

The monthly concentration is to be calculated by taking the arithmetical mean of the daily mean values or, if this is not possible, of the available values. No value measured must be more than five times as high as the mean monthly value.

¹ If the effluent resulting from the production of endrin also contains isodrin, the limit values laid down above shall also apply to the total discharges of aldrin, dieldrin, endrin and isodrin.
Isodrin is the chemical compound 1,2,3,4,10,10 - hexachlor - 1,4,4a, 5,8,8a - hexahydro - 1,4 - endo - 5,8 - endo - dimethano-naphthalene (Chemical Abstract No. 465-73-6; see O.J. No. L 360, 30 December 1976, p. 207)

If the outflow is greater or less than 750 000 m³ per month, the limit values for the concentrations shall be adjusted by means of the following formula:

$$L = l \cdot \frac{Q_0}{Q}$$

L = adjusted limit value expressed in ug/l

l = 20 ug/l from 1 January 1982
4 ug/l from 1 January 1986

Q₀ = 750 000 m³ per month

Q = current outflow expressed in m³ per month

With regard to the prescribed values which shall apply from 1 January 1986, if a manufacturer can prove at least nine months before the time limit expires, i.e. in the first instance before 1 April 1985, that the limit values referred to cannot be achieved by using the best technical means available, the Member State concerned may extend the above time limit with the prior agreement of the Commission.

2. Existing plants for mothproofing wool and wool products

The limit value for the monthly concentration of dieldrin in the discharges shall be fixed from 1 January 1986 by the following formula:

$$L = l \cdot \frac{Q_0}{Q}$$

L = limit value expressed in ug/l

l = 60 ug/l

Q₀ = 175 m³ per kg of pure dieldrin employed

Q = quantity of water expressed in m³ per kg of pure dieldrin employed

In order to verify that the limit values are observed, measurements are to be taken at least once a week from samples which are statistically representative of the discharges.

The monthly concentration must be calculated by taking the mean of the daily mean values or, if this is not possible, of the values available. No measured value must be more than five times as high as the mean monthly values.

3. New plant manufacturing aldrin, dieldrin and/or endrin and using dieldrin to mothproof wool and wool products

The concentration in the discharges of aldrin, dieldrin and endrin¹ taken together shall be zero from the date when the plant starts operating.

For the purposes of this Directive "zero concentration" means a concentration of aldrin, dieldrin or endrin which cannot be detected by the analytical method described in Annex II or by a similar method.

With the Commission's prior agreement, Member States may grant an exemption based on the production technique involving the lowest emission and the best technical means available for purifying the effluent.

¹ If the effluent resulting from the production of endrin also contains isodrin, the limit values laid down above shall also apply to the total discharges of aldrin, dieldrin, endrin and isodrin. Isodrin is the chemical compound 1,2,3,4,10,10 - hexachlor - 1,4,4a, 5,8,8a - hexahydro - 1,4 - endo - 5,8 - endo - dimethano-naphthalene (Chemical Abstract No. 465-73-6; see O J No. L 360, 30 December 1976, p. 207).

ANNEX II

Reference method of analysis to be used to determine the concentration of aldrin, dieldrin and endrin in waste.

Gas chromatography with electron capture detection after extraction with the appropriate solvents and purification.

Limit of detection¹: the minimum limit shall be 10 times lower than the monthly concentration required at the sampling point.

Where the emission standard is set at zero, the detection limit must be 10 ng/l.

- accuracy¹: \pm 50%

- precision¹: \pm 30%

¹ See the definitions contained in the proposal for a Council Directive on the methods of measurement and frequencies of sampling and analysis of the parameters for the quality required of surface water intended for the abstraction of drinking water in the Member States (O J No. C 208, 1 September 1978).

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Proposal for a Council Directive on the quality objectives required for the aquatic environment into which aldrin, dieldrin and endrin are discharged

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community¹, and in particular Article 6 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas Article 6 of Directive 76/464/EEC provides for limit values to be laid down for the emission standards relating to discharges of the substances in List I of the Annex to that Directive, and for quality objectives to be laid down for the aquatic environment affected by the substances;

Whereas aldrin, dieldrin and endrin are halogenated organic compounds; whereas they are included in List I by virtue of their toxicity, persistence and bioaccumulation;

Whereas Council Directive ² lays down the limit values for discharges of aldrin, dieldrin and endrin into the aquatic environment;

Whereas a monitoring procedure should be laid down so that Member States can establish that the quality objectives are met;

Whereas, since the water pollution caused by the discharge of these substances emanates almost entirely from plants which produce them and from the mothproofing of wool and wool products, discharges should be subject to a system of prior authorization;

Whereas, in order to achieve the quality objectives, Member States will have to lay down emission standards in the authorizations which they issue;

¹ OJ No 129, 18 May 1976, p. 23

²

Whereas provision should be made for the authorization of discharges of substitute products in order to avoid a new danger of polluting the aquatic environment of the Community;

Whereas ground water is to be covered by a special directive and is not therefore included in the scope of this Directive,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive fixes quality objectives for the aquatic environment with regard to aldrin, dieldrin and endrin, and the monitoring procedure to be adopted.
2. This Directive shall apply to the waters referred to in Article 1 of Directive 76/464/EEC, with the exception of ground water.

Article 2

For the purposes of this Directive:

- (a) "aldrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 1,4,4a,5,8,8a - hexahydro - 1,4 - endo - 5,8 - exo - dimethano-naphthalene (Chemical Abstract No. 309-00-2)¹;
- (b) "dieldrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 6,7 - epoxy - 1,4,4a,5,6,7,8, 8a - octahydro - 1,4 - endo - 5,8 - exo - dimethano-naphthalene (Chemical Abstract No. 60-57-1)¹;
- (c) "endrin" means the chemical compound 1,2,3,4,10,10 - hexachloro - 6,7 - epoxy - 1,4,4a,5,6,7,8, 8a - octahydro - 1,4 - endo - 5,8 - endo - dimethano-naphthalene (Chemical Abstract No. 72-20-8)¹

¹ O J No. L 360, 30 December 1976, p. 206 et seq.

- (d) "quality objective" means the maximum concentration of the substances referred to which is permissible in the aquatic environment concerned;
- (e) "discharge" means the introduction into the waters referred to in Article 1(2) of aldrin, dieldrin or endrin;
- (f) "industrial plant" means a new or existing plant which is used for manufacturing aldrin, dieldrin or endrin and for mothproofing wool and wool products with dieldrin.

Article 3

Where another product is substituted for aldrin, dieldrin or endrin, any discharge likely to contain such substitute product into the waters referred to in Article 1(2) by an industrial plant shall require prior authorization by the competent authority in the Member State concerned.

Article 4

Where the region which might be affected by the discharges is a cross-frontier region, the Member States concerned shall consult each other on the consequences of applying this Directive, and shall forthwith inform the Commission thereof.

Article 5

1. Member States shall bring into force the measures necessary to comply with this Directive within two years of its notification. They shall forthwith inform the Commission thereof.
2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt in the field governed by this Directive.

Article 6

This Directive is addressed to the Member States.

Done at

For the Council

The President

ANNEX I

Quality objective for aldrin, dieldrin and endrin

1. The sum of these three substances must not exceed 5 ng/l (five nanograms per litre) in fresh or sea water.

The quality objective must be achieved by 1 January 1982.

2. With the Commission's agreement, a Member State may set a less stringent quality objective than that mentioned above for a limited area, provided that the quality objective of 5 ng/l is generally met in the waters outside that area.

ANNEX II

Monitoring procedure

1. Three zones must be determined for each area affected by the discharges:
 - A. The immediate mixing zone next to the outlet, where hardly any dilution occurs.
 - B. The dispersion zone, further away from the outlet, which is characterized by greater diffusion and dilution of the discharges.
 - C. The unaffected zone, where the discharges produce no measurable effect.
2. A network of sampling points must be established in zone B, in such a way that the water samples are properly representative of the water quality for the entire zone.

The frequency with which samples are taken must be sufficiently high to show changes in the state of the aquatic environment in zone B; in any case, samples should be taken at least once a week.
3. The analytical method for determining the concentration of aldrin, dieldrin and endrin in the water samples shall be as follows:

Gas chromatography with electron capture detection after extraction with the appropriate solvent and purification:

- detection limit¹ : at least twice as low as the quality objective
- accuracy¹ : \pm 50%
- precision¹ : \pm 30%

¹ See the definitions given in the proposal for a Council Directive on the methods of measurement and frequency of sampling and analysis of the parameters for the quality required of surface water intended for the abstraction of drinking water in the Member States (O J No. C 208, 1 September 1978).