Summary Report on Environmental Developments - 3

June 1989 to March 1990

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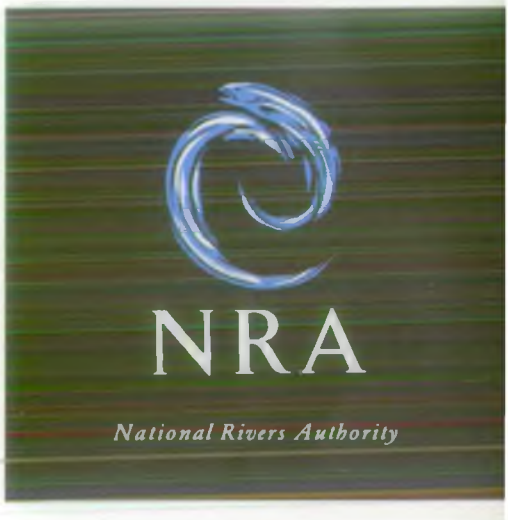

SUMMARY REPORT ON EUROPEAN DEVELOPMENTS JUNE 1989 - MARCH 1990

Report No: PRS 2490-M

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SUMMARY REPORT ON EUROPEAN DEVELOPMENTS
JUNE 1989 - MARCH 1990

D G Miller, T F Zabel and P J Newman

SUMMARY

The report is the latest in a series which summarise recent developments in Europe relating to environmental legislation and pollution control measures. The period covered is June 1989 - March 1990.

During the period the measures with significant implications for the water industry in the UK are contained in proposed directives and the Declaration from the Third Ministerial Conference on the Protection of the North Sea rather than in directives adopted.

Concerning drinking water quality the proposals for a Regulatory Committee to adapt the directive to technical progress and the implementation of the drinking water regulations in England and Wales, and shortly in Scotland, are the major developments. Cryptosporidium and pesticides are also live issues.

Further substances have been proposed for List I control under the dangerous substances directive but the suggestion that substances should be controlled both by emission standards and quality objectives has not been taken up so far.

Present thinking on the ecological quality directive for surface waters is summarised and this could have a significant impact on pollution control measures. Of more immediate impact are the pollution control measures agreed at the North Sea Conference and the proposed Municipal Waste Water Treatment Directive.

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SECTION 1 - INTRODUCTION

This paper is the latest in a series of occasional reports prepared by the Drinking Water and Environmental Standards Division of WRc summarising recent developments in environmental legislation and European practice. It covers the period from June 1989 to March 1990 during which time almost as many developments have taken place in the UK as within the European Community.

A list of the most relevant proposed and adopted directives is included together with comments on those likely to impact the water industry.

In a number of cases information updates that given in the previous report in the series published in June 1989 as a Foundation for Water Research paper No FR 0003 and NRA report PRU 2205-M.

SECTION 2 - EC DIRECTIVES

During the period under review a number of Directives have been adopted which have particular relevance to the Water Industry. Furthermore the European Commission has announced many more proposals for future directives, which once adopted, will be significant to the industry.

Lists of the adopted and proposed Directives announced since June 1989 are given in Tables 1 and 2, respectively.

Where an item is particularly important further details are given in this report. Additional information on any of the topics listed can be obtained on request from the authors.

Table 1 - Directives adopted during the period July 1989 - March 1990 which have particular relevance to the Water Industry

Official Journal Reference	Directive Number	Title
L163 (1989)	89/369/EEC	Prevention of air pollution from new municipal waste incineration plants.
L203	89/429/EEC	Reduction of air pollution from existing municipal waste incineration plants.
L183	89/391/EEC	Introduction of measures to encourage improvements in the safety and health of workers at work.
L393	89/654/EEC	Minimum safety and health requirements for the work place.
	89/655/EEC	-ditto- for the use of work equipment by workers at work.
	89/656/EEC	-ditto- for the use by workers of personal protective equipment at the workplace.
L201	89/427/EEC	Amending Directive 80/779/EEC on air quality limits and guide values for sulphur dioxide and suspended solids.
	89/428/EEC	Procedures for harmonising the programmes for the reduction and eventual elimination of pollution caused by vaste from the titanium industry.
L210	89/440/EEC	Amending Directive 71/305/EEC concerning co-ordination of procedures for the award of public works contracts.
L395	89/665/EEC	Co-ordination of the laws, regulations and administrative provisions relating the application of review procedures to the award of public supply and public works contracts.
L315	89/569/EEC	Acceptance by the EEC of an OECD decision/recommendation on compliance with principles of good laboratory practice.

Table 1 continued

Official Journal Reference	Directive Number	Title
L11 (1990)	90/18/EEC	Adapting to technical progress the Annex to Directive 88/320/EEC on the inspection and verification of good laboratory practice (GLP).
L398 (1989)	89/677/EEC	Amending for the eighth time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations.
	89/678/EEC	Amending Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations.
L44 (1990)	90/67/EEC	Setting up an Advisory Committee on the Protection of Animals Used for Experimental and Other Scientific Purposes.

Table 2 - Proposed Directives announced during the period July 1989 - March 1990 which have particular relevance to the Water Industry

Official Journal Reference	Proposal Number	Title
C172 (1989)	COM(89)281	Re-examined proposals for a Directive with a view to the introduction of measures to encourage improvements in the safety and health of workers at work.
C200	COM(89)302	Protection of vertebrate animals used for experimental and other scientific purposes.
C217	COM(89)303	Establishment of the European Environment Agency and the European Environment Monitoring and Information Network (see section 11).
C218	COM(89)404	Amended proposal on the protection from risks related to exposure to biological agents at work.
C229	COM(89)405	-ditto- to carcinogens at work.
C231	COM(89)209	Modules for the various phases of the conformity assessment procedures which are intended to be used in the technical harmonisation directives.
C243	COM(89)397	Framework programme of Community activities in the field of research and technological development (1990-94).
C246	COM(89)408	Modified proposal on the deliberate release to the environment of genetically modified organisms.
	COM(89)409	Modified proposals on the contained use of genetically modified micro-organisms.
C251	COM(89)282	Civil liability for damage caused by waste.

Table 2 continued

Official Journal Reference	Proposal Number	Title
C264	COM(89)380	Amended proposal on procurement procedures for entities operating in the water, energy, transportation and telecommunications sectors.
C267	COM(89)209	Global approach to certification and testing. Quality measures for industrial products.
C269	COM(89)542	Amending Council Decision 85/338/EEC in order to provide for the continuation of the Commission work programme concerning an experimental project for gathering, co-ordinating and ensuring the consistency of information on the state of the environment and natural resources in the Community.
(C273	89/C273/01	Resolution on guidelines to reduce technological and natural hazard).
C300 (see also C1/1990)	COM(89)518	Municipal waste water treatment (see section 6).
	COM(89)478	Amended proposal for a Council Directive amending Directives 80/778/EEC on drinking water, 76/160/EEC on bathing water, 75/440/EEC on surface water and 79/869/EEC on methods of measurements and frequencies of analysis of surface water.
C326	COM(89)560	Amended proposal amending Directive 75/442/EEC on waste. Amended proposal for a Directive on hazardous waste - further amended C42/1990 (see section 8).
C327	COM(89)502	Financial measure for the evadication of infectious haemopoietic necrosis of salmonids in the Community.

Table 2 continued

Official Journal Reference	Proposal Number	Title
C8 (1990)	COM(89)548	Amending for the 10th time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations.
(C10	90/C01/01	Resolution on a global approach to conformity assessment).
C11	COM(89)454	Amended proposal on batteries and accumulators containing dangerous substances.
C30	COM(89)606	Re-examined proposal for a Council Directive amending Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations.
C33	COM(89)575	Amending for the seventh time Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.
C51	COM(89)544	Amendment to the proposal for a Council Directive concerning the protection of fresh, coastal and marine waters against pollution caused by nitrates from diffuse sources (see section 7).
C55	COM(90)9	Proposal for a Council Directive amending Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (see section 3.2).

SECTION 3 - DRINKING WATER

3.1 UK REGULATIONS

With the full implementation of the Water Supply (Water Quality) Regulations 1989 in January this year, which will be followed by implementation in Scotland in May, the UK water industry is working under a much more detailed framework of controls in order to bring into force formally the EC drinking water directive plus certain other measures. The principal provisions define wholesomeness in terms of meeting prescribed concentration limits and absence of detrimental effects on health, specify conditions for relaxations and lay down rules for monitoring including conditions for sampling and analysis. Additionally requirements are laid down for the treatment required for different classes of surface water to comply with the EC surface water directive, approval of products and processes, the keeping of records, the provision of information to the public and local authorities and the publication of an annual report. The duties of local authorities are also specified.

Clause 60 of the Water Act 1989 includes the appointment of technical assessors by the Secretary of State to act on his behalf on some matters and to advise on others. A Drinking Water Inspectorate has been set up at the Department of the Environment to carry out this function for England and Wales. The Chief Inspector is Mr M G Healey who before 1 January 1990 was Head of the Drinking Water Division at DoE and his deputy is Mr O Hydes who was also formerly a member of that Division. A team of Inspectors will now be recruited to ensure that the requirements of the Water Act and the Regulations are being implemented.

3.2 MODIFICATIONS TO THE DIRECTIVE

With the Regulations in place attention is now turning to the possibility of the directive being modified under the Council's proposal of 22 December 1988 COM (88) 752 final which allows for the adaptation of four directives. The proposal in effect would put into place new

mechanisms for amending parameters and their values, patterns and frequencies of analysis and reference methods of analysis. The procedure will involve setting up a Regulatory Committee with representatives of Member States as members and a Commission official as Chairman. An important aspect is that matters can only be referred to the Committee by the Chairman and not at the request of a representative of a Member State. This was an amendment proposed in November 1989. The other important point is that the Committee will proceed by qualified majority voting. If the Committee disagree with the proposals from the Commission the matter is referred to the Council who will also act by qualified majority. If the Council fail to respond within three months the Commission will adopt the proposal. If the Committee agree with the measures by a qualified majority the Commission may adopt the proposals without reference to the Council. The workings of this Committee are therefore very important in relation to possible changes to parameters. The UK Water Industry has acted through the WSA to propose changes in the compliance rules in the directive. It has been suggested to the Commission that, at least for aesthetic or 'comfort' parameters, pass or failure should be based on percentile rather than absolute compliance.

As far as changes to parameter values are concerned the Commission asked ISPRA, its own research organisation, to look in detail at the standards currently applied in Member States and those of a wide selection of other countries plus WHO. The report, prepared by Dr Premazzi of ISPRA together with two Italian colleagues, contains a section which reviews on a parameter-by-parameter basis the significance of the parameter and rationales used in a number of countries including the USA, Canada, WHO and in a few cases other countries as well. The discussions are particularly detailed on three parameters; No 32 (organochlorine compounds other than pesticides), No 55 (pesticides and related products) and No 56 (polycyclic aromatic hydrocarbons). The Premazzi report is not strong on recommendations and leaves much to be discussed by the regulatory committee. EUREAU in the meantime is preparing a report with its recommendations.

3.3 CRYPTOSPORIDIUM

Following the outbreak of Cryptosporidiosis in Swindon and Oxford, which was judged to be water-related, the Secretary of State set up a Committee Chaired by Sir John Badenoch to examine the occurrence and extent of the organism in water supplies, assess the public health significance, and advise on monitoring and other action by the water industry to minimise risks. An interim report was presented to the Secretary of State in June 1989 and a full report is due in Summer 1990. The committee also made enquiries of other Member States in Europe and further afield. Apart from the United States, where outbreaks have occurred and further work is in progress, no evidence was presented of problems in other countries. It is also clear, however, that very little monitoring is in progress.

The committee has also reviewed gaps in knowledge and advised on a research programme to fill these gaps. As a consequence a national research programme has been initiated which includes elements dealing with;

(i) biology of the organism,
(ii) measurement methods,
(iii) infective dose,
(iv) occurrence in water sources and related epidemiology,
(v) removal in conventional treatment processes, and
(vi) effectiveness of alternative disinfectants.

It is expected that the results of this work will be reported in Spring 1991.

3.4 OPCS STUDY ON WATER HARDNESS AND CVD AND NITRATE

The Longitudinal Study (LS) of the Office of Population Censuses and Surveys is based on a sample of 1% of the population of England and Wales, for whom registration (births, marriages, cancer incidence, death) and census information are linked through time, starting from the National Census of 1971.

In 1983 WRc entered into collaboration with workers at the City University to explore the possibility that data on the quality of drinking water could be linked to the LS. Suitable water data for urban areas had been collected by WRc for the Regional Heart Study. Two subjects were chosen for investigation:

(a) Cardiovascular disease in relation to water hardness;
(b) Stomach cancer in relation to nitrate.

Although the LS is based on only a small fraction of the total population, the advantage of using it to investigate environmental factors is that socio-economic effects can be allowed for by using information related to each individual, rather than to the average for the district in which the individual resides.

A summary of the results from this work is soon to be reported by OPCS as chapter 6 of the Mortality and Geography Decennial Supplement. Some of the results have been presented earlier at scientific meetings but not all have been published in print. Whilst not a co-author of Chapter 6, WRc has commented on the report in proof.

The results on water hardness and cardiovascular disease are similar to those from other studies and the LS does not shed new light on the difficult questions that were previously unresolved.

With regard to nitrate and stomach cancer, the LS confirms that for urban populations in England and Wales as a whole, higher mortality rates tend to be associated with lower concentrations of nitrate in drinking water. This is, however, almost certainly a reflection of other factors that are responsible for the higher rates in the North and West. When the analysis was confined to the South and East there was still no general excess of stomach cancer in towns supplied with water of higher nitrate but there was an indication that the combination of higher nitrate with lower socio-economic status was associated with higher death-rates than would otherwise be expected. This finding would be consistent with a hypothesis that nitrate intake may be a risk factor

for certain sub-groups of the population either because of their less healthy diet (the authors' preferred explanation) or life-style, or because there is a tendency for more vulnerable individuals (eg, chronic invalids) to gravitate to lower socio-economic groups. This hypothesis remains speculative and is treated cautiously by the authors who suggest only that there may be a need for further research.

3.5 PESTICIDES - INTERIM STANDARDS IN WEST GERMANY AND ITALY.

(i) West Germany

As many water supplies in West Germany are unable at present to meet the 0.1 µg/l standard for individual pesticides laid down in the EC Drinking Water Directive, the Federal Health Authority issued in July 1989 interim regulations on the implementation of the pesticide parameter (Bundesgesundheitsblatt 7/89). If the limit value is exceeded the water supplier is required to prepare improvement plans in agreement with the local health authority. The limit value may be exceeded for a limited time period of 2 years although this time limit may be extended if the improvement plan is likely to succeed. In addition the consumer and the local health authority must be informed. Deviations are controlled according to the pesticide as shown in Table 3. Category A must not exceed 1 µg/l, Category B 3 µg/l and Category C 10 µg/l, the category depending on the mobility and toxicity of the pesticide.

The Pesticide Application Regulations (Bundesgesetzblatt 27 July 1988) lists those pesticides which are prohibited for any use and the restrictions placed on the use of some others, for example they may not be applied in water protection zones or groundwater catchment areas. However, it is up to individual states to implement these regulations and so far only one state, Baden-Württemberg, has done so and pays compensation to farmers for the use of more expensive, approved pesticides.

Table 3 - Federal Republic of Germany - Categorisation of allowable deviations from limit values for easily leached substances (and their main decomposition products), for limited periods, during an improvement plan

No	Active ingredient	Category[1]	Degradation products[2]	Category[3]
1	Alachlor	A	2,6 Diethylaniline	-
2	Aldicarb	B	Aldicarbsulphone (= Aldoxycarb),	B
			Aldicarbsulphoxide	B
			Total concentration of Aldicarb and main decomposition products	B
3	Alloxydim	C		
4	Amitrole	-		
5	Anilazine	C	2-Chloroaniline	-
			Dichloro-s-triazine	C
6	Asulam	C	p-Aminobenzine sulphonic acid	C
7	Atrazine	B	Desethylatrazine	B
			2-Chloro-4-Ethylamino-6-Amino-1,3,5-Triazine	B
			Total concentration of Atrazine and main decomposition products	B
8	Azinphos-ethyl	C		
9	Benalaxyl	C	2,6-Dimethylaniline	-
10	Benazolin	C		
11	Bendiocarb	C		
12	Bentazone	C		
13	Bromacil	C		
14	Carbetamide	C	Aniline	A
15	Carbofuran	C		
16	Carbosulfan	C		
17	Chloramben	C		
18	Chloridazon	C		
19	Chlorfenvinphos	C		
20	Chlorthiamid	C	Dichlorobenzamide	B
			Dichlobenil	C
			Total concentration of Chlorthiamid and main decomposition product	C
21	Chlortoluron	C	5-Chloro-p-Toluidine	-
22	Clopyralid	C		
23	Cyanazine	C		
24	2,4-D	C	2,4-Dichlorophenol	A
25	Dazomet	A		
26	Diazinon	A		

Table 3 - continued

No	Active ingredient	Category[1]	Degradation products[2]	Category[3]
27	Dicamba	C	3,6-Dichlorophenol	A
			3,6 Dichlorosalicylic acid	B
28	Dichlobenil	C	2,6-Dichlorobenzamide	B
			Total concentration of Dichlobenil and main decomposition product	C
29	Dichlorprop	C	2,4-Dichlorophenol	A
30	1,2-Dichloropropane	C		
31	1,3-Dichloropropene	-		
32	Dikegulac	C		
33	Dimefuron	C	3-Chloroaniline	-
34	Dimethoate	C		
35	Dinoseb	B	Aromatic amines* and nitroaromatics*	A[3]
36	Dinoseb-acetate	B	" "	A[3]
37	Dinoterb	C	" "	A[3]
38	Diuron	C	3,4-Dichloroaniline	-
39	DNOC	C	Aromatic amines* and nitroaromatics*	A[3]
40	Endosulfan	B	Chlorinated cyclic compounds*	A[3]
41	Ethidimuron	C		
42	Ethiofencarb	C	Ethiofencarbsulphone	
			Ethiofencarbsulphoxide	C
			Total concentration of Ethiofencarb and main decomposition products	C
43	Ethoprophos	A		
44	Etrimfos	C		
45	Fenpropimorph	C		
46	Flamprop-methyl	B	3-Chloro-4-Fluoroaniline	-
47	Fluazifop	C		
48	Fluroxypyr	C		
49	Haloxyfop	A		
50	Hexazinone	C		
51	Isocarbamid	C		
52	Isoproturon	C	p-isopropylaniline	-
53	Karbutilate	C		
54	Lindane	B	Chlorinated Cyclohexene*	A[3]
55	Linuron	C	3,4-Dichloroaniline	-
56	Maleic hydrazide	C		
57	MCPA	A	p-Chlorophenol	A
58	Mecoprop (=MCPP)	C	p-Chlorophenol	A
59	Mefluidide	C		
60	Metalaxyl	C	2,6-Dimethylaniline	-
61	Metham Sodium	C		
62	Metazachlor	C	2,6-Dimethylaniline	-

Table 3 - continued

No	Active ingredient	Category[1]	Degradation products[2]	Category[3]
63	Methabenzthiazuron	C		
64	Methamidophos	B		
65	Methomyl	B		
66	Methyl bromide	-		
67	Methyl isothiocyanate	B		
68	Metobromuron	B	p-Bromoaniline	-
69	Metolachlor	B	2-Methyl-6-Ethylaniline	-
70	Metoxuron	C	3-Chloro-4-Methoxyaniline	
			1-Chloro-p-Aminophenol	-
71	Metribuzin	C		
72	Monuron	C	p-Chloroaniline	-
73	Nitrothalisopropyl	C	nitro aromatics*	A[3]
74	Oxadixyl	C	2,6-Dimethylaniline	
75	Oxamyl	C		
76	Oxycarboxin	C		
77	Parathion	C		
78	Pendimethalin	C	aromatic amines* and nitro-aromatics*	A[3]
79	Pichoram	C		
80	Pirimicarb	C		
81	Pirimiphos-methyl	C		
82	Propachlor	C	N-isopropylaniline	A[3]
			Aniline	A[3]
83	Propazine	C	Desethylatrazine	B
			Total concentration of propazine and main decomposition product	C
84	Propoxur	C		
85	Pyridate	C	3 phenyl-6-hydroxy-6-chloropyridazine	C
			Total concentration of Pyridate and main decomposition product	C
86	S 421	A	Chlorinated unsaturated aliphatic compounds	A[3]
87	Sebuthylazine	C	Desethylsebuthylazine	C
			2-Chloro-4- Ethylmino-6-1,3,5-Triazine	B
			Total concentration of Sebuthylazine and main decomposition products	C
88	Sethoxydim	C		
89	Simazine	C	2-Chloro-4-Ethylamino-1,3,5-Triazine	B
			Total concentration of Simazine and main decomposition products	C

Table 3 - continued

No	Active ingredient	Category[1]	Degradation products[2]	Category[3]
90	TCA	C		
91	Tebuthiuron	C		
92	Terbacil	C		
93	Terbumeton	C	Desethylterbumeton,	C
			2-Methoxy-4- Ethylamino-6-Amino-1,3,5-Triazine	C
			Total concentration of Terbumeton and main decomposition products	C
94	Terbuthylazine	C	Desethylterbuthylazine	C
			2-Chlor-4-Ethylamino-6-Amino-1,3,5-Triazine	B
			Total concentration of terbuthylazine and main composition products	C
95	Thiofanox	A	Thiofanoxsulphone,	A
			Thiofanoxsulphoxide	A
			Total concentration of thiofanox and main decomposition products	A
96	Triclopyr	C		
97	Trifluralin	C	aromatic amines* and nitroaromatics*	A[3]

1. Groups of substances are identified by *. Subdegradation products and reaction products are not listed. Their existence must be verified in each individual case.

2. The substances are classified according to the level of knowledge about chronic toxicity (category A to C) or genotoxic potential (limit values must not be exceeded).

   When determining the acceptable concentration of Chlorophenol it is important that the taste of the drinking water is not tainted.

3. If decomposition products of those groups of substances exist they must be differentiated and identified.

   Degradation products with genotoxic potential must not exceed their limit values.

(ii) Italy

Italy has particular problems with high pesticide concentrations in groundwaters in the River Po region. A decree was issued in 1986 temporarily allowing the exceedance of the pesticide parameter based on toxicological evidence. The interim standards have been revised several times and the latest standards, which are valid for 2 years, are given in Table 4.

Table 4 - Maximum admissible values (MAV) for certain pesticides laid down by the Regulations of 14 February 1989 - Italy

	MAV (µg/l)
Atrazine	0.8
Simazine	0.4
Bentazone	4.0
Molinate	0.3

SECTION 4 - DANGEROUS SUBSTANCES

4.1 SELECTION SCHEME - SURFACE WATERS

The Commission of the European Communities is currently developing a selection scheme which is intended to be used to compile a draft list of additional priority substances for action. The Commission has placed a contract with a consultant for this work. Various countries including the UK have supplied their selection schemes. The UK government, for example, has provided the Commission with the "Red List" selection scheme which has been extended to include carcinogenicity. A seminar is being organised by the European Institute of Water for 12-13 July in Como, Italy to discuss the "setting of a common selection scheme for dangerous substances" for the EC dangerous substances directive (76/464/EEC) and the North Sea Declaration.

4.2 NEW SUBSTANCES

The European Commission has published a proposal for a Council Directive amending the dangerous substances Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (COM(90)9 final). The directive proposes that the following substances should be assigned List I status:-

- trifluralin
- endosulfan
- simazine
- triorganotin compounds:
  - tributyltin oxide
  - triphenyltin acetate
  - triphenyltin oxide
  - triphenyltin hydroxide
- atrazine
- organophosphorus substances:
  - azinphos-ethyl
  - azinphos-methyl
  - fenitrothion
  - fenthion
  - malathion
  - parathion and parathion-methyl
  - dichlorvos

Once the directive has been adopted only a qualified majority vote will be required in the Council after consultation with the European Parliament and the Social and Economic Committee, to set the limit values and environmental quality objectives (standards in UK terminology). This is claimed to be a means of speeding up the adoption of directives for additional List I substances. The proposed directive still allows individual Member States the choice of applying limit values or environmental quality standards and makes no attempt to combine the approaches. This is in contrast to the conclusions of the Ministerial seminar held in Frankfurt in June 1988 where there was broad

support for controlling dangerous substances simultaneously and in a complementary way by the quality objective and emission standard approach as has been adopted by the UK on red list substances. In terms of integrated pollution control the directive suggests only that the measures adopted to control discharges to the aqueous environment should not have an effect of increasing soil or air pollution.

The directive suggests that Member States should apply the limit values except where a Member State can prove to the Commission, using the monitoring procedure laid down by the Council, that the environmental quality standards are being met and continuously maintained throughout the area affected by the discharge. Provision has to be made for reports to the Commission on the results of monitoring. No monitoring reports appear to be required of Member States applying the limit value approach.

SECTION 5 - PROPOSED DIRECTIVE ON THE ECOLOGICAL QUALITY OF SURFACE WATER

The European Commission has identified the need for a directive on the ecological quality of surface water. The overall aim of the proposed directive is that the ecological quality of all surface waters throughout the Community (whether fresh or saline) should either be maintained, where the quality is already high, or improved, within a reasonable time scale, where the quality has been depressed by anthropogenic influences. High ecological quality is defined as a state where normal structure and functioning of the biological community exists, taking into account the natural physiographic, geographic and climatic conditions relative to the given ecosystem. Member States would be required to classify their surface waters according to the relative standards for high ecological quality defined by the proposal and implement schemes which will ensure the improvement of those waters not consistent with the appropriate standard.

The Commission is sensitive to the charge that "it has a tendency to prepare proposals for directives in semi-secret and then attempt to get them adopted by amending them in line with comments made by national experts". Accordingly for the present proposal it has taken a different approach. Firstly, it arranged for a Seminar to be organised by the European Institute for Water to consider the requirements of the proposed directive. This was held in May 1989 and an account of the outcome was given in the last report of this series. Secondly, it has established a Network of centres of expertise to advise it on the preparation of the proposal.

The Network is composed of representatives from the European Institute of Water, European Commission Joint Research Centre, Ispra, Italy and research organisations in Denmark, France, Greece, Italy and the UK. WRc was chosen as the representative for the UK.

The Network, which has met three times to-date, is still involved in advising the Commission of the various options that could be adopted for the directive. It is intended that the Network should operate in parallel but ahead of meetings of national experts. This has the effect of the national experts considering at their meetings the output of the Network and passing comments back.

The Commission hopes to publish the proposal in Summer or Autumn of this year.

SECTION 6 - THIRD MINISTERIAL CONFERENCE ON THE PROTECTION OF THE NORTH SEA

6.1 AGREEMENTS MADE

The third International Conference on the Protection of the North Sea was held in The Hague, Holland on 7-8 March 1990. The principal aims of the conference were to assess whether the targets and time frames for the policies and measures adopted at the Second Conference are being met and to decide which further initiatives are required. Switzerland is now a full participant in the conference and observers were sent by the German Democratic Republic and Czechoslovakia.

To further protect the North Sea the following "common actions" were agreed:

(i) The reduction by at least 50% of the inputs via rivers and estuaries between 1985 and 1995 of each of the 36 substances specified. Equal reductions are to be made of atmospheric emissions by 1999 for the same substances provided the application of Best Available Technology including the use of strict emission standards, enables such reductions to be made. The list of "priority hazardous substances" (Table 5) includes all the UK Red List substances, except PCB (for which separate requirements have been laid down), the two List I substances chloroform and carbon tetrachloride not included in the UK red list, the proposed List I substances trichloroethane and tetrachloroethane, the 6 List II metals as well as dioxins, azinphos-ethyl, fenthion, parathion and trichloroethylene. In addition a long list of substances has been identified which should be assessed for future priority action.

(ii) The phasing out and destruction of all identifiable PCBs by 1999 at the latest and submission to the ministerial meeting of the Oslo and Paris Commission in 1992 of national plans on the implementation of these decisions.

(iii) Reduction in the order of 70% or more between 1985 and 1995 of the total inputs from all sources for dioxins, mercury, cadmium and lead provided that the use of Best Available Technology or other low waste technologies enable such reductions to be made.

(iv) Substantial reduction of the quantities of pesticides reaching the North Sea with special attention to phasing out those pesticides which are the most persistent, toxic and liable to bioaccumulate (Tables 6 and 7).

Table 5 - List of priority hazardous substances

	Substance	Water	Air	CAS-number
1.	Mercury	*	*	7439976
2.	Cadmium	*	*	7440439
3.	Copper	*	*	7440508
4.	Zinc	*	*	na
5.	Lead	*	*	7439921
6.	Arsenic	*	*	7440382
7.	Chromium	*	*	na
8.	Nickel	*	*	7440020
9.	Drins	*		--
10.	HCH	*	*	608731
11.	DDT	*		50293
12.	Pentachlorophenol	*	*	87865
13.	Hexachlorobenzene	*	*	118741
14.	Hexachlorobutadiene	*		87683
15.	Carbontetrachloride	*	*	56235
16	Chloroform	*		67663
17.	Trifluralin	*		1582098
18.	Endosulfan	*		115297
19.	Simazine	*		122349
20.	Atrazine	*		1912249
21.	Tributyltin-compounds	*		--
22.	Triphenyltin-compounds	*		--
23.	Azinphos-ethyl	*		2642719
24.	Azinphos-methyl	*		86500
25.	Fenitrothion	*		122145
26.	Fenthion	*		55389
27.	Malathion	*		121755
28.	Parathion	*		56382
29.	Parathion-methyl	*		298000
30.	Dichlorvos	*		62737
31.	Trichloroethylene	*	*	79016
32.	Tetrachloroethylene	*	*	127184
33.	Trichlorobenzene	*	*	--
34.	Dichloroethane 1,2-	*		107062
35.	Trichloroethane	*	*	71556
36.	Dioxins	*	*	na

Table 6 - Substances which are used as pesticides must be strictly limited or banned

Aldrin	Atrazine
Carbon tetrachloride	Chlordane
Chlorpicrin	1,2-Dibromoethane
1,2-Dichloroethane	Dieldrin
Endrin	Fluoroacetic acid and its derivates
Heptachlor	Hexachlorobenzene
Hexachlorocyclohexane (α and β isomers)	Mercury compounds
Nitrofen	Pentachlorophenol
Polychlorinated terpenes	Quintozene

Table 7 - Substances which would have been included in Table 6 but which are not currently in use as pesticides

Acrylonitrile	Aramite
Lead Compounds	Cadmium compounds
Captafol	Chlordecone (Kepone)
Chlordimeform	Chloroform
Crimidine	Isobenzan
Isodrin	Kelevan
Morfamquat	Toxaphene
Selenium compounds	2,4,5-T

(v) For the North Sea catchment area agreement that all urban areas (eg 5000 pe or more) and industries with a comparable load are connected to sewage treatment plants with secondary (biological) or equally effective treatment unless, on a case by case basis, comprehensive scientific studies demonstrate that the discharge will not affect the North Sea environment on a local or regional level. In these cases at least primary treatment should be provided.

(vi) Reduction of nutrients in the order of 50% between 1985-1995 into areas, where these inputs are likely to cause pollution, by:

- nutrient removal in sewage treatment plants above 2000 pe which should achieve effluent concentrations below 10-15 mg/l in nitrogen and 1-2 mg/l phosphorus;

- limiting the nutrient content in industrial effluents by applying Best Available Technology;

- recommending an environmentally acceptable relationship between crop uptake and fertiliser application in agriculture.

(vii) Discontinuation of the disposal of sewage sludge in the North Sea. To this end the UK has agreed to phase out this practice by 1998. The Paris Commission has been invited to review alternative measures of sludge disposal with the aim of developing clean and low-waste technology.

(viii) Cessation of the disposal of industrial waste at sea - the UK has agreed to phase out this practice by 1993.

(ix) Further improvement of the quality of dredged material disposed of in the North Sea by reducing inputs of contaminants to rivers and estuaries and consideration of the establishment of an environmental assessment procedure which should take into account environmental quality criteria and dispersion characteristics.

(x) Reduction of operational discharges from offshore installations.

(xi) Continuation of the application of Best Available Technology to reduce radioactive discharges.

(xii) Further protection of marine wildlife in the North Sea.

(xiii) Consideration of the impact of fisheries on the North Sea environment.

The fourth International Conference for the Protection of the North Sea is planned for 1995 in Denmark and a scientific symposium will be organised to discuss the 1993 Quality Status report of the North Sea.

Some of these measures, particularly those related to dangerous substances and in particular the requirement to phase out sewage sludge disposal at sea and to install at least primary treatment for all sea outfalls greater than 5000 pe, will have major implications for the UK water industry.

6.2 STATEMENT OF THE SECRETARY OF STATE FOR THE ENVIRONMENT

In a statement (DoE News Release 161, 9 March 1990) made after the 3rd Ministerial conference on the Protection of the North Sea, Mr Chris Patten, Secretary of State for the Environment, confirmed the UK's intention to phase out the dumping of industrial waste in the North Sea by 1992 and of sewage sludge by the end of 1998. He also stated that the UK had agreed that all sewage discharges will receive treatment, which should lead to a significant reduction in nutrients discharged to sea. He welcomed the agreement made at the conference to harmonise the control of dangerous substances particularly those discharged by rivers to the North Sea and the commitment to reduce the impact of certain substances to both air and water which will result in a further improvement in the quality of the North Sea. The UK also confirmed the phasing out and destruction of PCBs to be achieved by 1999 at the latest. The pledge that each country should provide sufficient destruction capacity for its own waste was particularly welcomed.

Mr Patten also stated that he was pleased that the UK initiative to implement measures to protect and conserve the North Sea wildlife - particularly dolphins and porpoises - and habitats had been adopted.

The Minister made the commitment that the UK would produce action plans within 3 months to implement the agreements reached.

SECTION 7 - THE PROPOSED MUNICIPAL WASTEWATER TREATMENT DIRECTIVE

The proposal for a directive was submitted to the Council in November 1989 and published in that month. A further publication in January 1990 completed the text. The principal provisions are as follows:-

(i) All municipalities (defined) should have collecting systems conforming to specifications in the directive.

(ii) Municipalities with population equivalents of 2000 or more discharging to fresh waters or estuaries or 10000 or more discharging to coastal waters should have treatment plant as specified in the directive. All other municipalities should have 'appropriate' treatment which is not specified. Industries directly discharging wastes of a similar nature to municipal waste water must also comply with these provisions.

(iii) The type of specified treatment depends upon whether the discharges are to normal or 'sensitive' fresh or marine areas or 'less sensitive' marine areas. Secondary biological or equivalent treatment is standard and the effluent quality and/or percentage removal is defined for BOD, COD and suspended solids. Treatment for more sensitive areas requires the addition of nutrient removal and the percentage removal and/or effluent concentrations are defined for total nitrogen and phosphorus. Waste waters discharging into less sensitive marine areas must receive a minimum of primary treatment which is also defined.

(iv) Sensitive and less sensitive areas are defined and Member States must review these at intervals of no more than 4 years.

(v) Specified types of Authorisations are required from competent authorities for discharges by industry to sewer (ensuring compliance with other directives) and for waste water and sludge from municipal waste water treatment plants. All authorisations must be reviewed at intervals of not more than 4 years.

(vi) Sludge must be recycled whenever possible and disposal to sea by pipeline or ship must be phased out.

(vii) Effluents and sludges must be monitored together with the water into which they are discharged. The information obtained must be made available to the Commission and details of the plant, authorisations granted and monitoring results must be made available to the public.

(viii) National programmes must be drawn up to implement the directive and details must be sent to the Commission who will draw up a report based on this information. There is a requirement that design construction and operating staff should be properly qualified and provisions for training are included.

(ix) Setting up of a Regulatory Committee with power to review and modify many of the provisions as necessary. This will be chaired by a member of the Commission and will proceed on most matters by qualified majority voting.

The stated aim of measures set out in the proposals is to avoid pollution of fresh and marine waters defined in terms of obnoxious conditions, reduction of amenity and ecological quality and effect on waters abstracted for public supply. The proposals adopt essentially a 'precautionary' approach by specifying treatment required rather than quality objectives to be achieved.

The main impact in the UK will relate to the provision of full secondary treatment for estuarial discharges, a minimum of primary treatment for coastal discharges provided that areas can be shown to be 'less sensitive' and a ban on disposal of sludge to sea. For any fresh or saline area declared to be 'sensitive' reduction of nitrogen and phosphorus in effluent discharges will be required. This will include cases where discharges from one Member State affect sensitive zones in another.

A number of definitions and specifications in the proposals are crucial. For conventional primary and secondary treatments removal percentages and/or final effluent concentrations are given for one or more parameters. Sensitive zones are defined in terms of eutrophication and other measures such as nitrate concentration for drinking water abstraction, fitness for specific purposes or areas of special scientific importance. Less sensitive areas are defined mainly in terms of no adverse effect on the environment, good water exchange and no actual or potential eutrophication or oxygen depletion. Where nutrient removal is required, the performance in terms of percentage removal and final effluent quality is also given.

Microbiological parameters are not included in the discussion although compliance with the bathing water and shellfisheries directive is referred to in the introductory memorandum. Primary treatment as defined will have very little impact on those parameters and effective dispersion of the final effluent will be required to meet the bathing water requirements.

The financial impact on the UK of the proposals will be considerable both in terms of estuaries and coastal waters and if nutrient removal is required for these or other fresh waters. Costs are highly site-specific but for coastal waters the planned investment of £1.4 billion on improvement schemes over the next 10 years could be doubled or tripled depending whether primary or secondary treatment is used. Cessation of sludge disposal to sea may cost £320 million in capital and £30 million in operating costs based on WSA estimates.

The announcement by the Secretary of State before the recent North Sea Conference of Ministers accepted a number of the proposals in the directive, including phasing out sludge disposal to sea and provision of primary treatment for significant marine discharges. The widespread application of nutrient removal processes is not presently envisaged but if the proposed directive is adopted there will be much subsequent discussion of the definition of 'sensitive areas'.

SECTION 8 - THE PROPOSED NITRATE DIRECTIVE - HOUSE OF LORDS REPORT

In response to the proposed EC Directive (COM(88)708 final) concerning the "protection of fresh, coastal and marine waters against pollution caused by nitrate from diffuse sources" the House of Lords Select Committee on the European Communities considered the implications of the directive and took evidence from interested parties. The proposed directive will require Member States to designate vulnerable zones and to reduce inputs of nitrogen to these zones by restricting agricultural and land use practices and by limiting the nitrogen content of sewage effluents. The considerations and conclusions of the Committee together with evidence provided is published in the 16th report of the Committee "Nitrate in Water". The Committee welcomed the Commission's initiative in taking action to deal with the problem of nitrate pollution. However, the Committee has considerable reservations about the draft directive to solve the problems of eutrophication in particular, as phosphorus is the more limiting nutrient in fresh waters and might also contribute to the eutrophication in marine waters. But the Committee agreed with the Commission that action is necessary to protect water sources from nitrate pollution especially as it is highly probable that if present land use practice is continued nitrate levels in ground waters will continue to increase. The action should include a more intelligent use of fertiliser, but a blanket restriction on the overall use of fertiliser below that recommended for good agricultural practice is not advocated as it could not lead to a significant reduction in the rate of nitrate leaching. Because of the uncertainties about the process of nitrate leaching and the economic consequences of compulsory

measures the cautious approach adopted by the UK Government in the Nitrate Sensitive Area Scheme is endorsed as the best way forward for the UK. Further research into the agricultural use of nitrogen and its leaching into groundwater is strongly recommended.

The Committee concludes that the directive as drafted would have very far-reaching consequences for agriculture in the community and would bring extensive social and economic changes to rural society and it was doubted whether the Commission had assessed the effects of the proposal sufficiently. The government is urged to persuade the Commission to re-examine the proposals.

SECTION 9 - EC DIRECTIVES ON WASTE DISPOSAL

In the last report of this series details were given of proposals recently introduced by the European Commission to

(i) amend the Directive on Waste (75/442/EEC).

(ii) replace the Directive on Toxic and Hazardous Waste (78/319/EEC).

The proposals had been prepared by the Commission following experience gained in the operation of these Directives. Thus the amendment to the Directive on Waste (COM (88) 301 final) seeks to reduce the volume of waste disposed by promoting clean technology and greater recycling whilst the proposed new Directive on hazardous wastes (COM (88) 391 final) intends to introduce more precise and uniform definitions of hazardous waste and a more stringent monitoring programme.

Concern is beginning to be expressed about how the Commission intends to implement these proposals once adopted. One such fear deals with the transportation of spent activated carbon. A particular question is whether it will be classified as a hazardous waste since it may contain some of the substances listed in Annex II of the proposed hazardous waste Directive dealing with "Constituents of Waste which render them Hazardous Wastes".

WRc has attempted to resolve this uncertainty by contacting the Commission who state that care should be taken in interpreting the published proposals since they are likely to be changed in light of comments made by the European Parliament. Nevertheless, the principle will not effectively change. That is, the Commission requires that all wastes should be handled and disposed of correctly in accordance with the requirements of the proposal on waste and, if it consists of or contains certain substances, in accordance with the hazardous waste proposal as well.

This seems to suggest that spent activated carbon would be deemed a hazardous waste because of the presence of toxic substances listed in the proposal. However the Commission indicated that if the levels are sufficiently low, the producer could argue with the competent national authorities to have the waste re-designated as waste only. This would appear to cover the case of spent activated carbon where the levels of toxic substances are relatively low and therefore it may be described as "harmless".

SECTION 10 - INTERNATIONAL CONFERENCE ON RIVER WATER QUALITY - ECOLOGICAL ASSESSMENT AND MANAGEMENT

Ecological considerations are becoming important for the assessment and management of river water quality. Furthermore they will become even more significant following the possible adoption of the directive on the ecological quality of surface water previously described.

In view of the emphasis on this topic, NRA approached WRc with a proposal to organise a conference on the ecological assessment and management of river water quality. It was realised that for maximum effect it would be necessary for the conference to be an international rather than a purely UK national event. Accordingly WRc held discussions with Directorate General XI (Environment, Consumer Protection and Nuclear Safety) of the European Commission who agreed to be associated with the organisation of the Conference.

The proposal now is to stage a three-day international conference on the topic in Brussels in April 1991. It will be organised by WRc in collaboration with NRA and DG XI of the Commission. A programme committee, composed of representatives from WRc, NRA, DG XI, European Commission Joint Research Centre Ispra, European Institute for Water and agencies in Federal Republic of Germany, Italy and The Netherlands has been established and is currently considering the format for the conference.

Main topics likely to be covered are:

(i) river water quality - definitions and approaches;
(ii) biological techniques for assessing river quality;
(iii) control of discharges;
(iv) river quality management.

An announcement giving preliminary details about the conference will be issued this Spring.

SECTION 11 - INTERNATIONAL COLLABORATION WITH THE WORLD HEALTH ORGANIZATION

The agreement with the World Health Organization (WHO), recognising WRc as the Collaborating Centre for Drinking Water and Water Pollution Control, first signed in 1980, has been renewed for a further three years.

The concept of appointing Collaborating Centres for areas of special expertise was developed by WHO in the 1970s. This stemmed from the realisation that it could not directly employ all the expertise it needed in order to fulfil its wide obligations. Consequently centres of relevant knowledge were identified and invited to accept the role of a Collaborating Centre providing specialised advice to the world body. WRc was recognised as such an organisation. There are at present four other active WHO Collaborating Centres in Europe each dealing with a particular field of health-related expertise.

WRc has pursued an international role during the last ten years, believing that many advantages of mutual benefit result. Thus it has responded to many requests for assistance received from WHO Headquarters and its Regional Offices throughout the world. These have taken the form of WRc staff undertaking for WHO consultancies overseas, representing WHO at major international meetings and conferences (often presenting technical papers) and preparing "state of the art" review reports on particular topics. Of special note is the involvement WRc has had with the current revision of the WHO Drinking Water Guidelines, which in the past have become the basis for values for certain parameters in the EC Directive on the quality of drinking water.

Collaboration of this kind has enhanced the professional experience of WRc's staff while making a substantial technical input to WHO's affairs.

SECTION 12 - EUROPEAN ENVIRONMENT AGENCY AND EUROPEAN ENVIRONMENT MONITORING AND INFORMATION NETWORK

In Summer 1989, the Commission announced a proposal for a Council Regulation on the establishment of a European Environment Agency and European Environment Monitoring and Information Network (COM (89) 303 final. Official Journal C 217/7 dated 23 August 1989). The objective of the Agency and Network (together referred to as the "System") is to "furnish the Community and Member States with the technical and scientific support to allow them to achieve the goals of environmental protection and improvement .....". In particular it would be required to provide technical, scientific and economic information for:

a) the identification, preparation, implementation and monitoring of environmental action and legislation, and

b) to develop techniques of environmental modelling and forecasting in order that adequate preventive action can be taken at the appropriate time.

The principal subject areas for the System will be the quality and sensitivity of the environment and the pressures on it. Priority will be given to the following areas of work:

(i) air quality and atmospheric emissions.
(ii) water quality, pollutants and water resources.
(iii) state of the soil and of vegetation.
(iv) land use and resource aspects.

The importance of the proposed System has led many Member States to offer to locate the Agency in their country. However, as yet no decision has been taken on the location.

The proposal for the Network has provoked something of a mixed response. Many Member States and the Economic and Social Committee have generally supported the proposal and have urged the Council of Ministers to adopt and implement it as soon as possible. On the other hand, the European Parliament has voted to refer the proposal back to its Environment Committee after it failed to reach agreement with the Commission on the exact nature of the Agency's role. MEPs wanted the new body to have real teeth and, for example, to take on the task of monitoring the compliance of the Member States with EC environmental legislation. In addition MEPS thought that it should be responsible for formulating broad EC environmental policy guidelines and include in its remit nuclear safety.

National Governments are not prepared to concede the Agency such a role, preferring to restrict it to data gathering. The UK government, for example, has stated that the Agency should neither have an enforcement role nor the right to initiate policy.

As part of their deliberations on the proposal for the Agency, the European Parliament Special Scientific Technological Options Assessment body (STOA) commissioned a study on the type of environment agencies already in existence in other countries. The study which was carried out by Dr Lothar Gündling of the Max Plancke Institute for public and

international law in Heidelberg, drew a distinction between environmental agencies with a strictly advisory and documentation support role such as the Federal Environment Office in Germany and agencies with decision taking powers such as the US Environment Protection Agency.

Dr Gündling concluded that from a legal point of view there is no reason why the role of the European Agency should be limited to data gathering, as envisaged under the Commission's proposal. It could monitor the incorporation of EC law into national law, co-ordinate environmental research at a European level, provide information directly to the general public and, most importantly, be given the task of environmental planning at a European-wide level.