Summary Report on Environmental Developments - 1

October 1988

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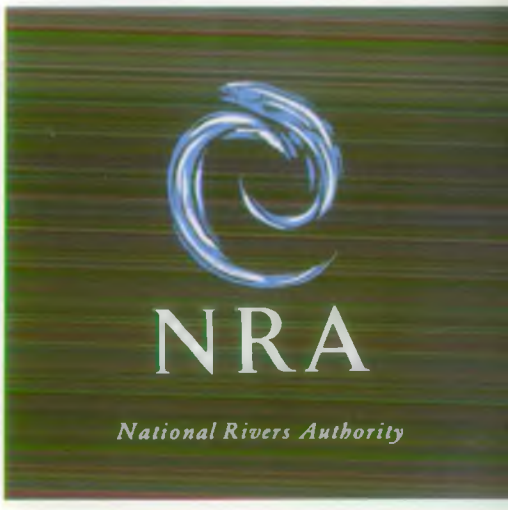

PRU 1986-M

SUMMARY REPORT ON ENVIRONMENTAL DEVELOPMENTS

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SUMMARY

Recent developments in environmental legislation and European practice affecting the UK water industry are briefly summarised in the first of a series of occasional reports prepared by the Environmental Strategy, Standards and Legislation (ESSL) Group. This fulfils a need for current awareness briefing identified during discussions with staff of water utilities.

CONTENTS

1. RED LIST SUBSTANCES

Report PRU 1901-M/2 (Information related to proposed Red List substances) containing fact sheets for the 26 substances selected by DoE for the proposed Red List was distributed in mid September. Some 200 copies have been supplied, including additional copies as requested.

Since the report was completed there is some new information relating to 1,2-dichloroethane. Proposals for limit values and quality standards have been published by the EC (see List I substances below).

Discussions have been taking place within the water industry and with DoE about the formulation of action plans for Red List Substances to meet DoE's time scale for preparing a national plant to reduce inputs by 50% by 1995.

2. EC LEGISLATION

2.1 List I substances

Proposals were published by the EC on 19 September for limit values and quality objectives (standards) for four candidate List I substances (COM(88)432 final). Details are summarised for easier comparison in the following table.

Holders of WRc report PRU 1901-M/2 should amend P16 to include the proposed values for 1,2-dichloroethane, and note on p41 the proposed standstill on concentration of trichlorobenzenes.

2.2 List II substances

Table 2 lists WRc Technical Reports now available on recommendations for environmental quality standards for various List II substances in water.

Table 1
Limit values and quality objectives proposed by EC for candidate List I Substances.

	1,2 DICHOLORO-ETHANE (EC LIST 59)	TRICHLORO-ETHYLENE (EC LIST 121)	PERCHLORO-ETHYLENE (EC LIST 111)	TRICHLORO-BENZENE + (EC LIST 117/118)
LIMIT VALUES (mg/l)				
PRODUCTION PLANT	10 (M) 20 (D)			
TRI AND PER PRODUCTION		2(M)4(D)	2(M)4(D)	
CARBON TETRACHLORIDE AND PER PRODUCTION			5(M)10(D)	
CHLOROFLUOROCARBON PRODUCTION			*	
PRODUCTION BY DE-HYDROCHLORINATION OF HCL, AND PROCESSING PLANT				1(M)2(D)
PRODUCTION AND/OR PROCESSING (CHLORINATION OF BENZENE)				0.05(M) 0.1(D)
USE IN DEGREASING METALS		0.1(M)0.2(D)	0.1(M)0.2(D)	
USE IN DRY CLEANING		1(M)2(D)	1(M)2(D)	
USE IN TEXTILE INDUSTRY				*
QUALITY OBJECTIVES (µg/l)				
ALL SURFACE WATERS	10(A)	10(A)	10(A)	0.1(A)
CONCENTRATIONS IN WATER/SEDIMENTS/MOLLUSCS/ SHELLFISH/FISH				NO SIGNIFICANT INCREASE

TRI = Trichloroethylene
PER = perchloroethylene
M = monthly average
D = daily average
A = annual average
* = limits to be set by Member States as interim measure.

Table 2 ESSL Unit - Technical Reports

Main Title for all: Proposed Environmental Quality Standards For List

TR No	Sub-title	ISBN No
253	Vanadium	0 902156 60 8
254	Inorganic tin	0 902156 61 6
255	Organotins	0 902156 62 4
256	Boron	0 902156 63 2
257	Sulphide	0 902156 64 0
258	Iron	0 902156 65 9
259	pH	0 902156 66 7
260	Ammonia	0 902156 67 5
261	Mothproofing agents	0 902156 68 3

II Substances In Water

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G Mance and J A Campbell

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These reports are based on the contract reports submitted to DoE and are published with the approval of the Department. DoE-funded work is continuing with preparation of recommendations for standards for mon- di- and trichlorobenzenes, toluene, xylene and benzene.

The EC's proposal for Community-based quality standards for chromium failed to produce agreement in negotiations in March and is unlikely to be given priority during the present Greek Presidency (or the subsequent Spanish Presidency).

2.3 Future commission proposals

The European Commission are expected to bring forward proposals on three topic of particular importance to the water industry. These are:

a) Measures to control nitrate-induced pollution, particularly resulting from agricultural activities

b) Measures to establish "ecological quality standards" for surface waters (probably expressed as targets rather than mandatory requirements)

c) Measures to define minimum treatment requirements for discharges from sewage treatment works, and possibly also from major industrial sectors.

These areas were endorsed as priority targets for Community action at a Ministerial Seminar on future community water policy held in Frankfurt in June 1988. Proposals for control on nitrates are likely around the end of 1988.

3. DEVELOPMENTS IN EUROPE

3.1 Nutrients

As indicated in Section 2.3 a proposal for a Directive is under preparation which is intended to regulate agricultural activity to minimise the run-off of nitrogen to surface waters.

Denmark has already made far-reaching plants for reducing nutrient inputs to its coastal waters from both agricultural activity and municipal sewage treatment works. Farms with stock in excess of 30 units must provide 9-months' storage for animal manure. Green fields must be established and crop and fertiliser rotation plans must be prepared. Chemical fertiliser consumption will be reviewed. For municipal sewage treatment works all existing plants with a capacity in excess of 15 000 person equivalent (PE) and all new plants with over 5000 E capacity must achieve a nitrogen concentration in the effluent below 8 mg N/l and all plants with a capacity over 5000 PE must achieve 1.5 mg P/l by 1993. The cost for the plant extension must be borne by the consumer. Provisional estimates indicate that the annual additional cost to the UK water industry for complying with similar limits would be approximately £600 million for sewage treatment alone.

The Federal Republic of Germany is planning to reduce inputs of nutrients by approximately 50% in response to the second Ministerial Conference for the Protection of the North Sea. Proposals are being discussed to reduce phosphorus in sewage effluents to below 2 mg P/l for plants with a capacity in excess of 50 000 PE and ammonia to below 10 mg NH_4-N/l for plants greater than 5000

PE. However, limiting the ammonia concentration to 10 mg/l will not necessarily reduce the nitrate concentration and future initiatives on nitrate may well follow. Attention is also being paid to the contributions made by agriculture to the nutrient load discharged to surface waters and regulations are under consideration to restrict this input source. This may well go hand in hand with the current effort of reducing nitrate inputs to groundwaters by introducing "good agricultural practice" and reducing the nitrate use in water protection zones.

3.2

Sewage sludge disposal

The Federal German Environmental Ministry has banned the disposal of sewage sludge on pastureland used by grazing animals or as a source of animal feedstuff following the discovery of dioxin in some samples of sludge. This could mean the end of sludge disposal to agricultural land in West Germany as farmers will not be prepared to accept sludge on other land if it is considered unacceptable for land used for animal feeding. ESSL staff will monitor these developments in European practice and report again when more details are available.

3.3

Drinking water directive

New regulations on a code of practice are being drafted and are expected to be available for general consultation early next year. As an input to the discussions ESSL Group has carried out a review, part-funded by the DoE, of the regulations and practices in six Member States. A sub-contract to the IEEP covered institutional arrangements. It is hoped that the overview report will be released for circulation to members in the next month.

One difficult area which remains concerns the presence of pesticides in water. Most Member States are finding concentrations of some substances above the directive MAC. The UK has formally asked for a review of the parameter. This is meeting resistance from water suppliers in West Germany and The Netherlands in particular who feel that adjustments to the standard would release pressure on controls at source. The subject was discussed at a seminar held by the European Institute for Water in May 1988 and a further seminar is to be held this month. The European Commission will then be considering their response.

3.4
Radioactivity

The joint DoE/water industry committee has considered the implications of a Chernobyl-type accident for water supplies and expects to publish a report soon. Suggestions for monitoring schemes for the industry have been formulated to fit in with the national schemes. Proposals by the European Commission for radioactivity limits in products to be applied following an accident have so far excluded water, although values were proposed by the expert committee. It is likely that environmental groups and the European Parliament will wish to have this position reviewed.

4. UNITED STATES PROPOSALS

The United States Environmental Protection Agency has published draft proposals for comment covering 39 previously unregulated chemical contaminants (30 synthetic organics and 9 inorganics). Maximum contaminant levels (MCLs) are proposed for 37 and treatment techniques for 2. There are also proposals for monitoring about 100 other possible

water contaminants. The MCLs proposed are given in Table 3. It is emphasised that the proposals are out for comment and the figures may therefore be amended.

Proposals were also published in August on measures to control lead in drinking water. These are in two parts. MCLs have been set for concentrations at the entry to distribution. These are 0.005 mg/l for lead, with a long-term goal of zero, and 1.3 mg/l for copper. Control of lead at the tap is to be effected by requirements for corrosion control. If certain trigger levels of substances are exceeded in water at the tap utilities will be required to demonstrate that they have minimised corrosivity and provided advice to the consumer on remedial measures. The proposal is that the criteria should be a pH of 8, an alkalinity of 30 mg $CaCO_3$/l and an average lead concentration of 0.010 mgPb/l. Provided a utility can demonstrate that it has minimised corrosivity for its particular supply it does not have to meet these criteria. Long-term monitoring requirements are subsequently left to the discretion of the individual states. It is estimated that the cost of meeting MCLs in the USA will be $333 m capital and $60 m operating, and corrosion control will cost $1 bn in capital and $267 m for annual operating and maintenance costs. It is estimated, however, that the corrosion control measures would save $500 m per year in plumbing repairs. Comments on these measures have been submitted and the EPA will now consider the content of its final rule.

Table 3. USEPA proposed contaminant levels

Substance	MCL - mg/l
Organics	
Acrylamide	treatment technique
Alachlor	0.002
Aldicarb	0.01
Aldicarb sulfoxide	0.01
Aldicarb sulfone	0.04
Atrazine	0.002
Carbofuran	0.04
Chlordane	0.002
dibromochloropropane	0.0002
o-dichlorobenzene	0.6
cis-1.2-dichloroethylene	0.07
trans-1.2-dichloroethylene	0.07
1,2-dichloropropane	0.005
2,4-D	0.07
Epichlorohydrin	treatment technique
Ethylbenzene	0.7
ethylene dibromide	0.00005
heptachlor	0.0004
heptachlor epoxide	0.0002
lindane	0.0002
methoxychlor	0.4
monochlorobenzene	0.1
PCBs	0.0005
pentachlorophenol	0.2
Styrene	0.005
tetrachloroethylene	0.005
toluene	2
toxaphene	0.005
2,4,5-TP	0.05
xylene	10
Inorganics	
Arsenic	0.03
Asbestos	7m fibres/l (longer than 10µ)
Barium	5
Cadmium	0.005
Chromium	0.1
Mercury	0.002
Nitrate (and total nitrite + nitrate)	10 as N
Nitrite	1 as N
Selenium	0.05

5. BOOK PUBLICATIONS

Environmental Protection of the North Sea (edited by P J Newman and A R Agg)

The Proceedings of the International Conference on Environmental Protection of the North Sea have been published by Heinemann Professional Publishing (Price £85). The conference was organised by WRc in advance of the second Ministerial Conference held in November 1987.

Classification of Surface Water Quality (P J Newman)

This review of classification schemes for surface water quality was undertaken by WRc for DoE and has now been published by Heinemann Professional Publishing on behalf of HMSO (Price £65).