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Dear John

THIRD REPORT OF THE ENVIRONMENT COMMITTEE: POLLUTION OF RIVERS AND ESTUARIES

We considered in E(A) in February the case for a major statement on water environment matters, in the light of issues concerning nitrate contamination and the quality of drinking and bathing waters, and in the context of the wide-ranging report on water pollution matters published last year by the Common's Environment Select Committee.

The conclusion was that more work was needed on nitrate and drinking water - which is now proceeding - but that in the meantime, as full as practicable a response should be sent to the Committee on all the other matters raised. I now enclose a draft which has been the subject of extensive discussion among interested departments. It is a rather detailed and long response which has been necessary because of the wide ranging character of the Committee's recommendations. Inevitably the text on nitrate in Part III is a very low-key and inconclusive, and this is likely to occasion some debate, but we cannot delay further if embarrassment with the House is to be avoided.

I would be grateful for comments by 1 June.

I am copying this letter to the Prime Minister, to members of E(A) and to Sir Robin Butler.

Nicholas Ridley

NICHOLAS RIDLEY



20/5/88.

POLLUTION OF RIVERS AND ESTUARIES

THE GOVERNMENT'S RESPONSE TO THE THIRD
REPORT OF THE ENVIRONMENT COMMITTEE

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The Government's Response to the Third Report of the House of Commons' Environment Committee on the Pollution of Rivers and Estuaries

INTRODUCTION: A TIME OF CHANGE

1. The Committee's Report on the 'Pollution of Rivers and Estuaries' in England and Wales was published on 14 May 1987. It covers all the main areas of water pollution control and environmental aspects of water quality and includes thirty six recommendations and conclusions. It comes at an important stage in the evolution of the water industry, as the Government intends, during this Parliament, to convert the Water Authorities into privatised companies responsible for supplying water and sewage services within an effective framework of statutory regulation. At the same time, the Government intends to transfer the existing pollution control functions of the Water Authorities to the new National Rivers Authority. These measures will ensure that the Government will retain its proper concern with pollution matters, whilst the business of water supply and sewage disposal benefits from the opportunities and disciplines of the private sector.

2. This Memorandum sets out the Government's detailed response to the Committee's recommendations, including, where relevant, its conclusions on its own earlier consultation proposals published in "The Water Environment: The Next Steps". It defines the Government's general strategy for safeguarding and enhancing Britain's rivers and estuaries.

3. The Government welcomes the Committee's report as providing a well-researched and comprehensive review of the current state of rivers and estuaries in England and Wales, and the changing nature of the water pollution problems affecting them. It fully shares the Committee's wish to arrest the recent downturn in water quality and to turn the trend back to long term improvement. The Government is reassured by the wide range of agreement with the Committee on policy goals and instruments. Given the scope of the report's recommendations, there are inevitably some differences and these are brought out in this Memorandum. But on the main issues concerning the regulatory framework, the need to reduce pollution risks, and methods of tackling the main causes of deteriorating water quality, the Government is in broad agreement with the Committee's recommendations.

4. The Committee's report was also timely coming as it did when a number of important policy developments were under consideration. A number of these have subsequently been announced:-

i. In July 1987, the Government announced details of its proposals to establish a new public body - the National Rivers Authority (NRA) to take over the regulatory and pollution control functions of water authorities, prior to the transfer of the main water supply and sewerage functions to the private sector. Following consultation, these proposals were confirmed in December. They are very much in line with the Committee's recommendations in favour of an independent regulatory body.

ii. In November 1987, the Government announced proposals for a new precautionary approach to the control of dangerous substances to water. Action will be based on a 'Red List' of substances selected on the basis of strict scientific criteria, for which strict environmental quality standards will be established. In addition to observing these quality standards, processes which discharge significant quantities

of 'Red List' substances will also be required to apply the best available technology, not entailing excessive cost, to minimize future discharges. To complement this tighter control on point source discharges there will also be effective controls over the supply, storage and use of such substances in order to minimise inputs from diffuse sources. The Government is now publishing detailed proposals on this new approach in a consultation paper.

iii. Also in November 1987, the Secretary of State for the Environment chaired the successful **Second International Conference on the Protection of the North Sea**, which reached unanimous agreement on a range of measures to reduce pollution of the North Sea. The Conference Declaration calls for substantial reductions to be achieved between 1985 and 1995 in the quantities of the most dangerous substances reaching the North Sea via rivers and estuaries -as part of a more precautionary approach to the marine environment. The Declaration also proposes a range of measures to phase out the dumping of harmful wastes in the North Sea; as part of this, the quantities of dangerous contaminants disposed of in sewage sludge in the North Sea must not exceed 1987 levels.

5. The Government is also now in a position, following consultation, to **confirm the main policy proposals contained in the April 1986 consultation paper "The Water Environment: The Next Steps"** including the establishment of statutory water quality objectives and the introduction of regulations under sections 31(4) and 31(5) of the Control of Pollution Act to reduce pollution risks. By putting existing water quality objectives on a statutory basis following privatisation the Government intends to ensure that a clear framework exists within which water quality can be maintained and improved.

6. In preparation for this system the Government has been reviewing, with water authorities, the existing classification schemes for rivers and estuaries, to see how these might be improved, together with the associated monitoring requirements, rules for assessing compliance and related operational aspects of the regulatory system. It intends to publish detailed proposals later this year.

7. This Memorandum is in 5 parts and follows the same broad sectoral structure as the Committee's report:

Part I describes the Government's objectives for water quality.

Part II discusses the problem of pollution from sewage treatment works and the Government's policy on sewage sludge.

Part III describes the Government's policy towards Pollution by Agriculture.

Part IV deals with Pollution by Industry; and

Part V describes the main elements of Government policy for strengthening the pollution control system.

8. Four main themes underlie the Memorandum:-

- recognition of the need for a more precautionary approach to pollution control - as exemplified by the new 'unified' approach to minimising inputs of the most dangerous substances to rivers and estuaries, implementation of the North Sea Conference Declaration and by the proposals to tackle the rising trend of pollution incidents by regulations for the safe storage and control of oil, silage, slurry and possibly, in due course, other polluting substances.

- the need for a strong regulatory framework to provide the NRA with a clear remit to maintain and enhance water quality within the framework of statutory objectives described above, and for pursuing effective monitoring and enforcement procedures. In particular, enforcement policy must be designed to deal both with regulated discharges - and ensure that consent conditions are met - and with the growing problem of unauthorised discharges and pollution incidents.

- the need to establish a system of pollution control which is even-handed as between sectors (industry, agriculture and domestic), and strikes the right balance, in each sector, between advice and guidance on the one hand, and regulation and control on the other.

- finally, the need for a monitoring and information system which allows inferences to be drawn, with a high degree of confidence, about whether objectives are being met or what changes are occurring. This is particularly important in the case of water, because of its flow and inherent variability and the resultant problems of measurement.

9. Although there is much to be done in getting all these different elements right, the Government believes that it has laid the framework for a system which will secure the objectives for water quality which it shares with the Committee.

PART I: A STRATEGY FOR WATER QUALITY

Water Quality in England and Wales

1.1 The Committee's first conclusion is that:

"It is important to stress that river and estuary quality in this country is generally very high."

The Government agrees and believes that the Committee's subsequent recommendations for improved pollution control measures must be seen in this light. Available evidence suggests that the quality of rivers and estuaries in the UK compares very favourably with that in other EC Member States. The Water Research Centre in a recent report¹ attempted to assess surface water quality throughout the Community, using the classification schemes adopted in England and Wales in 1980, and their results showed that almost three quarters of the length of rivers and canals throughout the Community were of "good or fair" quality compared with 90% in England and Wales. Similarly, the 85% of Community estuarine waters which were of "good or fair quality" compared with over 90% in England and Wales. In effect 90% of river length in England and Wales meets the basic requirement of the EC Directive concerned with drinking water abstraction, supports at least good coarse fisheries and has amenity value. This remains a significant achievement.

1.2 The emphasis which the Committee give to the high quality of our rivers and estuaries is therefore timely and welcome. The Government's strategy for water quality defined in this Response, like the Report itself, points both to new and continuing problems in the maintenance and improvement of water quality, but these should not detract from the high reputation Britain has

¹ Surface Water Quality Assessment in EC Member States ILS 9349 SLD) -
Water Research Centre: June 1987

long enjoyed in this area. That reputation owes much to the professional skill of water industry staff, to the continuing efforts of industry to improve trade effluent quality and to the vigilance and commitment of local and national interest groups devoted to the protection of the water environment. All can draw some encouragement and reassurance from the tenor of the Committee's initial observations.

1.3 This overall perspective is necessary in considering recent evidence from the 1985 River Quality Survey of England and Wales, which suggests that the long run trend of improvements in river and estuary quality has now halted, and that in some regions deterioration had taken place. This evidence is consistent with earlier, more tentative conclusions reached in the previous two years when the Government was implementing Part II of the Control of Pollution Act (COPA), and has since been confirmed by later evidence for 1986 which shows further deterioration in some areas. The main causes of this deterioration are thought to be the performance of Sewage Treatment Works and pollution from agriculture. It is important therefore that such evidence is taken fully into account in the policies and actions of all bodies with responsibilities towards the water environment.²

Objectives for Water Quality

1.4 While such data provide an important measure of the quality of Britain's river and estuary waters, and the Government believes that strategic policies must aim to achieve and sustain an overall improvement in the quality they reveal, it is also necessary to have regard to the uses to which water is put and the purposes for which its quality must be maintained. Rivers are managed for a variety of uses: water supply, the safe disposal of sewage and effluents, recreation, navigation, amenity, fisheries and the support of

² The best current evidence as to water quality, as compared with that available to the Committee at the time of its hearings, is summarised in the Digest of Environmental Protection and Water Statistics (No 10 1987) published by HMSO.

aquatic wildlife. These impose different and sometimes conflicting requirements, and pollution control must take account of them all. The Committee refer in particular to two: the safety of drinking water supplies and the conservation of aquatic flora and fauna. These must be at the heart of any pollution control policies and the touchstone of their effectiveness.

1.5 Drinking Water Supplies. More than 60% of potable water in supply is abstracted from surface waters. This is therefore an essential consideration in the management of natural waters, and suitability for abstraction for public water-supply has long been a key factor in the classification of river water quality. Like rivers and estuaries, drinking water in supply in the United Kingdom has for many years had a high reputation. It is now more than half a century since the last death attributable to contamination of public supplies, and only very rarely can any illness now be traced to public supplies. Drinking water in the UK is generally of good quality and is safe to drink and the Government is wholly committed to maintaining that quality and securing improvement where necessary.

1.6 That commitment is reflected in the Government's policies for the supply system, in which investment is substantial. An example of the significant improvements which have taken place over the last few years has been the treatment of water in areas where it is plumbosolvent. There has been substantial reduction in lead levels in drinking water in such areas and the few remaining areas should be treated well before the Government's target date of December 1989. The need to meet statutory standards will ensure that investment in the supply system continues at an appropriate level after the proposed privatisation of the water authorities.

1.7 The Government will also maintain its firm support for the European Communities Directive 80/778/EEC related to the quality of water intended for human consumption (the Drinking Water Directive), which is now making an important contribution to the maintenance of drinking water quality throughout the Community. For the first time definite limits have been set for over forty substances commonly found in water, as have minimum sampling frequencies. Some of these limits relate to health but a number, such as colour and taste, are concerned with other matters related to consumer acceptability. In

accordance with the Directive all public supplies in the UK are now checked against the relevant parameters. There are places where full compliance with the drinking water standards has not yet been achieved but water undertakers already have programmes of improvement under way, and for the remainder programmes are being prepared. However, while the United Kingdom fully supports the Directive, it is the Government's view and that of most other member states that some clarification and updating is necessary. The United Kingdom will be working with the European Commission and other member states to secure such changes.

1.8 Most existing improvement programmes, including those under the Drinking Water Directive, relate to questions of consumer satisfaction, such as discoloration, taste and turbidity, and primarily concern the treatment and distribution systems. However, the emphasis is now shifting to matters central to the Environment Committee's Inquiry, in particular the pollution of potential drinking water sources. Such pollution often occurs from diffuse sources, and is therefore characterised by difficulties of control, particularly in the case of underground water sources where the effects of pollution may not be revealed for many years.

1.9 The pollution of aquifers by nitrate derived largely from agricultural sources has received much recent attention. In fact, over 80% of the population in the United Kingdom receive drinking water which contains less than 30 milligrams per litre of nitrate; less than 2% receive water which contains between 50 and 80 milligrams per litre. This is consistent with statements from the Government's medical advisers that water undertakers should aim to keep nitrate concentrations below 50 mg/l, although concentrations up to 100 mg/l may be supplied, provided health authorities and health professions in the affected area are informed so as to encourage monitoring for infantile methaemoglobinaemia³. However, the Government has recently decided that in the light of legal advice, all water supplies should comply with the nitrate standard in the EC Drinking Water Directive of

³ Joint Committee on Medical Aspects of Water Quality 1984.

50 milligrammes per litre⁴. The Department of the Environment and the Welsh Office have therefore asked water undertakers to prepare and submit programmes to achieve compliance as soon as practicable.

1.10 The nitrate limit of 50mg/l in the EC Directive is based primarily on the well-established connection between nitrate and infantile methaemoglobinaemia rather than on the hypothesised connection with cancer referred to by the Committee. Infantile methaemoglobinaemia attributable to nitrate in public water supply has not been reported in the United Kingdom for some 15 years during which time the medical advice reiterated in the previous paragraph has formed the basis for Government policy in this area. Although, as the Committee indicates, recent epidemiological studies in the United Kingdom do not support the hypothesis that nitrate may cause cancer, it must be remembered that concern about nitrate and cancer is based primarily on experimental evidence which remains valid and which indicates that it is prudent to restrict the exposure of all ages, and not only infants, to nitrate. Consequently, the Government will re-examine the health aspects of nitrate, but does not propose at this stage to seek a review of the EC standard as the Committee have recommended.

1.11 The possible incursion of pesticides into drinking water sources is also receiving increasing attention. Until recently it was only rarely possible to detect traces of these substances at the very low concentrations at which they occur because analytical methods had not been refined sufficiently. However, methods are being developed to identify traces at well below one part per billion and water authorities are now monitoring for those pesticides most widely used in their area. A few pesticides are being detected but only at concentrations several orders of magnitude lower than those which have ever been shown to pose a risk to health. The Government is also commissioning research to provide further information on this subject and enable any precautionary action which might be considered necessary to be taken.

⁴ Statement in House of Commons, 20 January 1988.

1.12 Wildlife and Conservation. The same factors will often, but not always, be relevant to the protection of aquatic flora and fauna, as to potable water supplies. Indeed, water supply operations can sometimes conflict with environmental considerations. While the Committee recognised that water authorities are generally anxious to conserve the wildlife in their care, they report the concern of some witnesses that water management does not give sufficient attention to conservation and wildlife. The Committee was led by these general arguments to their second recommendation that:

"If the Government continues with its proposals to repeal section 46(1)-(3) of COPA (which give water authorities a duty to vary consents when flora and fauna have been harmed by consented discharges), then the water authorities should in addition to their existing power, have a duty imposed on them to have regard to the effect that effluents may have on flora and fauna when granting or varying discharge consents".

1.13 The Government attaches great importance to the conservation of aquatic flora and fauna, and considers this a key test of the acceptability of water quality standards. On the whole, numerical standards cannot be set for wildlife conservation as readily as for potable water supply and other uses, and each case tends to be special, but this should not obscure the importance attached to wildlife conservation within water policy and administration in Britain.

1.14 Conservation considerations are built in at several levels to the system of water pollution control. Although existing water quality classifications are defined primarily in terms of chemical characteristics, these are tied to the wildlife they will support, directly in respect of categories of fishery and indirectly in respect of other forms of wildlife which represent an important aspect of the amenity of a river. The water authorities are also under a duty under the Wildlife and Countryside Act to 'further conservation' which goes beyond that to which any comparable utility services are subject. In this, the authorities are advised by Conservation and Recreation Committees in England and by local Consumer Advisory Committees upon which conservation and recreation interests are represented in Wales, and many have published

Codes of Conservation practice or appointed conservation officers. The Government does not therefore accept that water quality management at present gives inadequate consideration to wildlife.

1.15 Nor does the Government believe that the specific recommendation to which the Committee subscribes is sound. Section 46(1)-(3) of COPA is, in the Government's view so widely drawn as to be almost unworkable and likely to leave authorities in serious doubt as to the extent of their duties. In practical terms it would contribute little to furthering conservation interests. Other measures in the May 1986 consultation proposals can, in the Government's view, meet the needs of wildlife conservation in a more effective manner, in particular:

(1) a new power for the Secretary of State to vary consents early where aquatic flora and fauna are being damaged; and

(2) preservation of the existing emergency powers in section 46(4) to (7) for water authorities to undertake operations to protect or restore flora and fauna.

These powers will be supplemented by wider measures which will include preservation of the existing general duty to further conservation; preparation of a statute-based code of conservation practice applicable to the NRA and to all water undertakers; and the ability to establish, exceptionally, protection zones in areas where environmental water quality is particularly at risk.

1.16 It would also be inappropriate, in the Government's view, to add a specific duty for Water Authorities to have regard for flora and fauna in setting discharge consents, as the Committee proposes. If the legislation imposed this specific requirement it is arguable that it should also impose requirements in respect of all other matters which should be taken into account; this would raise difficulties of legal drafting and interpretation, but more important, could in practice narrow the range of factors taken into

account. Rather the Government prefers to rely on the authorities' duty to impose "reasonable" conditions, combined with their general duty in respect of conservation, and supplemented by other measures set out above.

A Strategy for Water Quality

1.17 The requirements of the various water uses, particularly water supply and conservation of the water environment, and the diversity of potential sources of water pollution in modern society, point to the need for a strategy for maintaining and enhancing water quality. In general therefore, the Government sympathises with the Committee's aims in recommending that:

"DOE needs to draw up a national strategy to maintain and improve water quality with a clear timetable for its implementation".

Throughout its examination of the future structure of the Water Industry it has been the Government's consistent view that - whatever detailed structure was adopted - the ability of Ministers accountable to Parliament to develop and implement effectively an overall water environment policy was of the greatest importance. There are two principal strands to its strategic policy.

1.18 Statutory Quality Objectives and Standards. With the needs of strategic policy in view that the Government in its 1986 consultation paper proposed that statutory force should be given to quality objectives and standards, and that they should ultimately be determined by the Secretary of State rather than the water authorities. The Government notes the Committee's welcome for this proposal and supports its view (recommendation 4) that:

"clear national water quality objectives seem an obvious pre-requisite for a planned and costed programme of improvement".

The Government's proposals are designed to ensure that priorities are identified which can provide the basis for planned programmes of upgrading and improvement. In doing this, it will take account of the different uses to which rivers and estuaries are put, the different standards such uses require and the standards specified in EC directives.

1.19 The implementation of water pollution directives agreed by the UK with its EC partners will inevitably make an important contribution to such a policy. The UK Government is firmly committed to effective implementation of these directives, and in general, the UK has a good record in this respect. For the most part, however, directives prescribe ends rather than means, and they cover only certain aspects of water environment protection. A wider strategic framework therefore remains necessary which the Government considers can be best provided by a statutory system of river and estuary quality objectives.

1.20 The system will provide a framework for identifying, for all main waters, the current quality of water to be sustained, any improved quality to be planned for and the date by which it is to be achieved. The classification schemes will be established by the Secretary of State, with the advice of the National Rivers Authority, and the detailed objectives and timetable will require his approval. The Secretary of State and the National Rivers Authority will be under a duty to have regard to the objectives in exercising their regulatory duties, and to exercise their other pollution control functions in such manner as contributes to their achievement.

1.21 The system is thus intended to assist coherent development of policy and more effective implementation:

- it will force decisions on priorities between areas and different types of improvement and represent a clear and visible set of national objectives;
- it will allow necessary investment levels to be identified and planned for by the utility companies and industrial dischargers;
- it will require the pollution control authority, and all those water users they regulate, to follow standards and practices compatible with achievement of the objectives.

1.22 The Government intends that the system will provide a statutory basis for both environmental quality objectives and standards, as currently understood. It will be established under legislation setting up the NRA, but will build upon the existing classifications of river and estuary quality. In most cases the Secretary of State expects initially to adopt the quality objectives already developed by Water Authorities, after public consultation, for their rivers and estuaries, although there will be provision for subsequent review on the advice of the National Rivers Authority. Before adopting existing objectives, the Government will want to assess whether they properly reflect current policies and priorities and whether any modifications are required. Some objectives for example, were set at a time when it was possible to take for granted maintenance of the best class rivers and concentrate resources on cleaning those which were seriously polluted. As pollution from intensive agriculture and deterioration in sewage effluent quality have increased that assumption has become less tenable. Objectives and their associated timescales must now take account of the increased need to protect the quality of our best rivers as well as to improve the worst.

1.23 Control of Dangerous Substances. The merit of the statutory system of quality objectives is that it will be comprehensive. It will apply to rivers and estuaries, and ultimately to underground waters and to all coastal waters; it will apply a common system of classification to each, consistently interpreted and monitored; and it will embody consistent standards for concentrations of polluting substances in receiving waters to be reflected in discharge consents. For the great majority of substances regularly discharged to water this provides a full and sufficient system of control, which matches discharges to the absorptive capacity of the receiving water and the degree of ecological protection necessary consistent with the intended use or objective which the controls are designed to safeguard. However, for the most dangerous substances, the Government believes there is now a case for reinforcing these controls, and this provides the second, and complementary strand of the Government's strategy.

1.24 The Committee referred to the long-standing debate within Europe on the relative merits of the two approaches which have been developed for the control of dangerous substances - the environmental quality objective (EQO) approach adopted by the UK amongst others, and the uniform emission standard (UES) or 'limit value' approach adopted in many continental countries. Under the former, plant emission limits or 'discharge consents' are set on a case by case basis in a way which ensures that EQO's for the receiving waters are met. In the latter case uniform emission standards are laid down for industries or processes, regardless of location or water use, and are often derived from an assessment of what is technically achievable at reasonable cost. The Committee noted that various suggestions had been made that these two approaches might be reconciled and said that:

"agreement on a joint EQO/Fixed Limit approach for discharge of dangerous substances may be near, and we hope that this will be achieved in the near future".

A general commitment was made by Ministers at the 1985 Ministerial Conference on the North Sea in Bremen to work towards the simultaneous or complementary application of the two approaches and this was a major theme of the 1987 conference in London. Following that commitment, and also the recommendations of the House of Lords Report ⁵ to which the Committee has referred, the Government announced last November, proposals for a unified approach in respect of the substances considered to present the greatest hazard to the aquatic environment incorporating both environmental quality standards and the use of best available technology (not entailing excessive cost) in order to minimise inputs of these substances.

1.25 The Department of the Environment and Welsh Office will shortly be publishing a consultation paper setting out detailed proposals for the new integrated approach.

⁵ [Ref as per ref 275 in 3rd Report.]

1.26 The consultation paper will reaffirm the general advantages of an environment-based EQO approach which, as the Committee noted, has served the UK well. It will recognise, however, that for certain of the most dangerous substances, in particular those which are most toxic, persistent and likely to bioaccumulate, there is a strong case on precautionary grounds for seeking to minimise inputs to the aquatic environment, so far as is reasonably practicable. First, there is considerable uncertainty about the possible long term environmental effects of these substances in water; second, because of limitations in our current state of knowledge, it is often difficult to set quality standards for these substances with confidence.

1.27 It is recognised that many of these substances reach the aquatic environment via diffuse sources, rather than from point source industrial discharges. It is also recognised that, whilst the EQO approach can at least register and take account of diffuse inputs, no system of discharge controls alone can address the problem of inputs from non-point sources.

1.28 The proposed new integrated approach comprises four main elements:

a. The Selection of Substances - The 'Red List'

- the starting point is the development of criteria for assessing and identifying a 'Red List' of the most hazardous substances for priority action. The development by DOE of a screening system based on the properties and use of dangerous substances, will, it is envisaged, provide a scientific basis for such criteria.

b. The Development of Quality Standards

- there would be further development of quality standards for these substances, and wherever possible these would continue to be used as one of the bases for controlling discharges, as well as a yardstick for environmental monitoring.

c. The Use of Technology-based Emission Standards

- industrial processes representing the main point discharges of priority substances will be scheduled for special control, and guidance, possibly including guideline emission standards, based on the use of 'best available technology not entailing excessive cost ('batneec'), will be drawn up by HMIP. Firms seeking to discharge into rivers or sewers would have to satisfy the appropriate regulatory authority that they were applying best available technology and that - in respect of discharges to rivers - the relevant environmental quality standards could also be met.

d. Control of Inputs via Diffuse Sources

- Many of the substances on the provisional 'Red List' are pesticides, whose main threat to the aquatic environment comes from non-point sources. The Government will consider what action may be necessary to protect the aquatic environment against pollution from such sources, including the possibility of tighter controls over the use of Red List substances.

1.29 The formal application of technology-based emission standards to discharges of priority substances from industrial processes represents a significant shift in water pollution control policy. As the consultation paper will make clear, Her Majesty's Inspectorate of Pollution would have the main role in authorising the operation of scheduled processes, in defining what would constitute the use of best available technology for controlling emissions, and - subject to a wider concern for ensuring the best practicable environmental option across the different disposal media - for enforcing this. Best available technology (not entailing excessive cost) would be applied on a case-by-case basis, but it would be open to HMIP to produce generic guidelines with minimum or target emission standards for any category of process as a whole. These guidelines would be reviewed from time to time. Economic considerations would be taken into account, and the concept would be introduced progressively, focusing initially on new or refurbished plant. The National Rivers Authority would retain general responsibility for protection

and management of receiving waters and for ensuring that quality objectives were met. Legislation will be necessary to implement various aspects of these proposals.

1.30 While such an approach does not constitute the adoption of European Community - defined 'limit values' or uniform emission standards, since HMIP would be responsible for defining 'batneec', the objectives are similar - to minimise discharges with reference to what is considered to be technically achievable for certain dangerous substances and certain industrial processes, but within a continuing framework of quality objectives and standards. It will reinforce the comprehensive quality objective system in the area where any risk or uncertainty can be least readily entertained.

1.31 Within the field of water quality it would constitute an important element in the development of an integrated approach, whose aim is to provide a comprehensive, flexible range of controls from which may be selected those which are most appropriate to the nature, use and environmental pathways of a particular substance. Whilst the Government is seeking to develop such an approach primarily in response to domestic considerations, it does so within the context of international developments in this direction, and in the hope that international actions to combat pollution by dangerous substances, both within the European Community and elsewhere, will increasingly reflect the logic and environmental advantages of a balanced, integrated approach.

1.32 In this context, the Government remains concerned at the selection basis for proposals on dangerous substances put forward by the European Commission, and believes there is an urgent need to establish environmental priorities in this area. It hopes that the 'Red List', and the scientific screening system from which it is derived, may help to provide an agreed basis for selecting priority substances and ultimately help to speed up Community action in this area.

North Sea Conference Declaration

1.33 Since the Committee's Report these two principal strands of the Government's strategy have come together in the Ministerial Declaration of the Second International Conference on the Protection of the North Sea, held in London in November 1987. The proposal for a unified approach to the control of dangerous substances is fully consistent with this, and the Declaration recognises the importance of the complementary use of strict environmental quality objectives and technology-based emission standards.

1.34 A major component of the Declaration relates to inputs via rivers and estuaries of substances that are persistent, toxic and liable to bioaccumulate. It calls on North Sea States to:

"take measures to reduce urgently and drastically the total quantity of such substances reaching the aquatic environment of the North Sea, with the aim of achieving a substantial reduction (of the order of 50%) in total inputs from these sources between 1985 and 1995".

1.35 The Government attaches considerable importance to implementing the agreed Declaration. To this end, it has published the Guidance Note at Annex A which emphasises, in particular, that

i) The Government has decided that action in reducing inputs of dangerous substances via rivers and estuaries should focus on the 'Red List', which is to provide the basis of the unified approach to the control of dangerous substances.

ii) Until the new approach can be implemented in specific legislation the Government will look to water authorities (and the appropriate bodies in Scotland and Northern Ireland) to review consent conditions for significant discharges of Red List substances and similarly to review authorisations for trade effluent discharges of these substances.

iii) Water authorities will be drawing up action plans setting out assessments of 1985 baseline inputs and target reductions in inputs of Red List substances via rivers and estuaries, with suggested timetables.

iv) Action taken in the light of the Declaration should be taken in a consistent way throughout the UK to protect all marine waters around the coasts of the United Kingdom.

1.36 The Government will continue to play an active and constructive role in international collaboration in this area, and looks forward to the further Conference planned for the Netherlands in 1990.

II POLLUTION AND THE SEWAGE DISPOSAL SYSTEM

2.1 The sewage treatment and disposal system affects the environment both through the discharge of aqueous effluents to rivers, estuaries and coastal waters and through the disposal to sea, land or air of residual sludges deriving from the treatment process. This section considers the Committee's recommendations in this area against the background of the Government's general policies for the sewage treatment and disposal system.

2.2 The treatment and safe disposal of sewage and other wastes is a major task involving significant technical and managerial challenges. While change in the basic technologies may be relatively slow and the assets, in terms of main sewers and treatment works, are generally long-lived, the sewerage system is subject to heavy and continuing pressures. Housing, industry and general economic development continually generate new demands, while the volume of waste water generated by existing households increases with changes in personal habits and wider use of household amenities associated with rising income, such as washing machines and dishwashers. The difficulty in forecasting such demands, particularly at the local level, and the inescapable time-lags in the provision of new sewers and treatment facilities, puts a premium on flexible resource planning. These factors are common to both effluent disposal and to sludge disposal.

2.3 The results of these developments are reflected in the quantities of sewage sludge produced by treatment works and in the amounts of effluent discharged into the aquatic environment. With sludge, water authorities, in principle, have a variety of possible disposal routes and, within limits, a degree of flexibility in how disposals are timed and managed. As the Committee recognise, the central policy issue is to ensure selection of the best practical disposal option in the light of local circumstances and environmental assessment.

2.4 Effluent disposal from sewage treatment works is, by contrast, far more constrained. Disposal is restricted to accessible river or coastal water, and discharges are more heavily affected by variations in climatic conditions as well as the daily and seasonal peaks of the kind familiar to all public utilities. To avoid pollution, effluent quality must match the dilution capacity of the river and its ability to absorb safely particular volumes of effluent. At the same time, the ability of treatment works managers to interrupt or limit effluent flows in response to changing conditions is severely constrained. In these circumstances the primary problem is to maintain regulatory controls which can protect the receiving waters in varying conditions which those charged with managing the discharge may not be able to influence greatly. It was upon the effectiveness of these existing controls, operated through the effluent discharge consent system, which the Committee focussed.

2.5 While the main pollution control issues arising in effluent and sludge disposal therefore contrast sharply, it is important to recognise the interactive character of these and other elements of the waste disposal system. In particular, the greater the treatment of effluents before disposal to rivers, then other things being equal, the greater the volumes of residual sludges which must then be disposed of by other means. Equally, if wastes are not to be disposed of to sea, the full environmental implications of disposal to land or incineration have to be properly assessed.

Sewage Effluent Discharges

2.6 The progressive diversion of industrial and other effluents from direct discharge into rivers and estuaries to an expanding sewage treatment and disposal system has historically been the principal means of improving environmental water quality. However, as the sewage disposal system has grown so too has the dependence of river quality on its safe and efficient operation. The Government therefore believes it is essential that the system operate satisfactorily, and be seen to do so. It fully accepts the Committee's conclusions that:

R5: Poor water authority performance in meeting their own effluent consents cannot be excused; and that

R6: Improvement to sewage works' effluent is necessary in order to arrest the recent small net decline in water quality and to securing long-term improvement to river quality overall.

2.7 The Committee's discussion of pollution from the sewage disposal system was based on annual monitoring data first collected for 1986. Out of the 4333 works in England and Wales with numerical consents (ie major works) which were tested for compliance, 965 or 22%, were failing their consent conditions. In the Government's view this standard of performance requires urgent improvement. This section sets out the background against which current and future performance should be judged and the steps the Government, in co-operation with the Water Authorities, has already taken and the further measures proposed.

2.8 Prior to implementation of Part II of COPA no comprehensive systematic evidence was available of the performance of sewage treatment works in relation to their consents. Such evidence as was available was difficult to interpret, because of variations between authorities in practices for setting standards for their works, and because actual consent conditions were often set as aims rather than as firm control levels. In the course of implementing the Act between 1983-85 the Government therefore strengthened the regulatory and monitoring system in the following ways:

(i) To promote consistent practice, new regulations provided for water authority consents to be set by the Secretary of State for the Environment and the Secretary of State for Wales; these superseded arrangements under which consents set for themselves by the authorities were deemed approved unless the Secretary of State objected;

(ii) All consents were reviewed with the aim of making them effective control measures, and consistent with achievement of objectives for the receiving water. Where an effluent was having a damaging effect on a river, interim consents at current performance levels were given only while improvements were effected;

(iii) Monitoring results showing effluent quality were to be made available on public registers;

(iv) Annual returns were to be rendered to the Departments in respect of treatment works which failed to meet the terms of the Departments' consents, with notes of the remedial action the Authority intended to take.

2.9 As indicated above, the first of the annual returns to the Departments for 1986 suggested that some 22% of works were failing to comply with their consents and hence the standards necessary for the planned achievement of quality objectives. From preliminary investigations by HMIP it appears that the most frequent reasons for non-compliance include progressive deterioration of old equipment, often beyond the design life of the plant; problems with manning and with the supervision of maintenance crews; and vandalism which plays a significant part in causing many unmanned works to fail to perform effectively. Against this, on the positive side, there is evidence that water authorities are now giving greater attention to the performance of sewage treatment works and the effect of such discharges, and those from crude and storm overflows, on receiving waters. There are a number of major schemes involving the diversion of sewage treated at poorly performing small works to larger and more efficient works. The installation of interceptors to eliminate crude sewage outfalls to estuaries is also leading to noticeable improvements in water quality, as shown on the Tyne and the Tees.

2.10 It is not possible to determine from only one year's figures whether there has been an overall deterioration in performance in recent years, and if so on what scale. Moreover, factors such as rapid increases of load, unforeseen system-breakdowns and freak weather conditions may render full compliance virtually unattainable. Nevertheless it remains the Government's

view that the present position is unacceptable. While the problem of non-compliance cannot be remedied overnight, the Government is looking for action by water authorities to bring about compliance within the shortest practicable timescale - which is probably about 3 years. It will therefore be discussing with authorities in the context of this year's corporate plans the implications of bringing all works into full compliance by 1991. The financial implications are discussed in more detail below.

2.11 Authorities will also be asked to review manning levels and maintenance procedures for all works currently failing their consents, and HMIP will be following up with authorities the 1987 performance reports which are now being received, to see where further improvements can be made in operating practices.

2.12 The Committee, in their recommendation 10, urged that:

" ... it is crucial that regulation of water authority activity must be vigorous and seen to be so."

The Government agrees, and accordingly accepts that prosecution should be available as an enforcement tool in the last resort. In future, in the case of those works where breaches of consent conditions are having significant effects on the quality of receiving waters, HMIP, as the body currently responsible, will be asking water authorities to submit firm proposals for remedial action over a reasonable timescale. In the event of failure to submit plans, or an unsatisfactory response, consideration will be given to prosecution.

Financing Improvement

2.13 A major investment programme is now underway by water authorities to upgrade and improve sewage treatment works; over the next 4 years, authorities in England and Wales are planning to spend some £700m to bring works currently failing their COPA discharge consents into compliance and to improve or renew other works whose performance is otherwise likely to deteriorate over

this period. The Government will be discussing with water authorities in the context of this year's corporate plans their detailed plans and intended rate of progress.

2.14 It is already clear, however, that investment in improved sewage treatment facilities is now a much higher priority with authorities than had previously been the case. The annual rate of spending in England and Wales, in current prices, has increased from £164.6m in 1980/81 to 259.8m in 1988/89 - a 57.8% increase. It now accounts for about one fifth of the total capital programme of water authorities.

2.15 In time this higher rate of investment should be reflected in significant improvements in water quality - both in older urban areas, like Leeds and Bradford, where old works are being rationalised and improved, and in areas of population growth, like the South East, where existing facilities have become overloaded. However, a number of the schemes will take some years to complete and results in terms of water quality may not be observable in the short term.

2.16 The public sector accounting treatment of water authorities dictates that their net borrowing, plus certain grants, are constrained by an external financing limit; it is this external finance and not directly the industry's expenditure, which counts towards the public expenditure totals. In recommendation 7 the Committee stated:

"We believe that greater scope to borrow commercially would be a positive step which could give the water authorities the added financial flexibility and freedom which they seek, whether this will be achieved by relaxation of Treasury 'annuality' or by privatisation. Accordingly, we recommend that greater scope should be given to WAs to borrow commercially".

Whilst the water authorities remain in the public sector any borrowing which they undertake will form part of the public sector borrowing requirement whether it is undertaken through the national loans fund or elsewhere. It must be seen and assessed in that light. Until they are privatised, the finances of the water authorities and their successor companies will continue

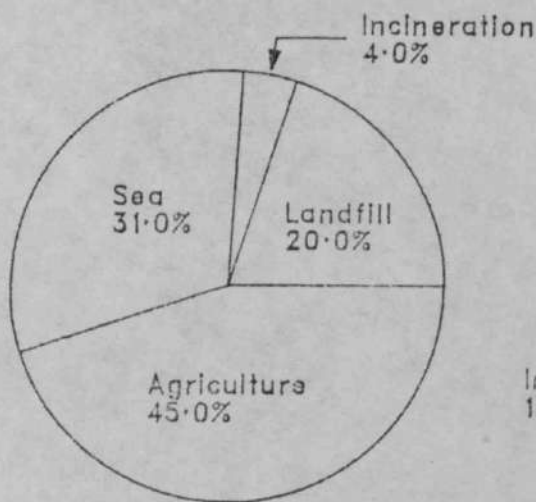
to be reviewed each summer as part of the annual review of public expenditure, to ensure that they can meet their legal obligations consistently with Government priorities. While the framework of nationalised industry financing cannot be relaxed while the water industry is within the public sector, the utility companies will be free, after privatisation, to raise finance by any of the methods available to public limited companies.

Sewage Sludge

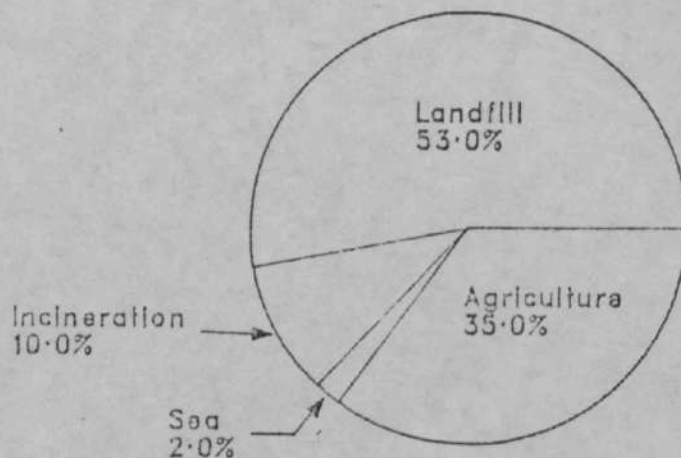
2.17 As the Committee observe, about half the UK's sewage sludge is currently spread onto land as a 'soil conditioner'; just under one third is dumped at sea, and the remainder is disposed of to landfill sites apart from a small amount (4%) which is incinerated. This situation contrasts with the position in the rest of the EEC where less goes to agricultural land (only about one third), but where landfill accounts for about half of production. A higher proportion is incinerated (about 10%) but this remains a minor disposal route. Unlike the position in the UK, sea disposal is not used to any great extent elsewhere in the EEC. The position is contrasted in the pie-charts below.

Disposal Routes for Sewage Sludge

UK



Remainder of the EEC



2.18 One of the Committee's concerns was the suggestion of damage to the North Sea from dumping of sewage sludge. In recommendation 17, the Committee concluded:

"UK policy of dumping sewage sludge at sea is regarded as unacceptable by other nations and the UK is becoming ever more isolated regarding this. In consequence, Britain will face a considerable challenge on its alleged pollution at the North Sea Conference in November. It seems unlikely that the UK can count indefinitely on sea dumping as an open-ended option for disposal of sewage sludge. MAFF and the DOE need to demonstrate by published reports a thorough investigation of the best practicable environmental option for sewage sludge disposal, and should report their findings to Parliament. These should include evaluations of sludge to land, (landfill and agricultural land); incineration; sludge dumping at sea; sludge pipeline to sea; and also sewage outfalls directly to sea. MAFF should also commission an independent study on the relationship between pollution and fish disease in the North Sea, which should be published (para 56)".

2.19 The Government fully accepts the continuing need for UK regulatory authorities to demonstrate both to the public and to our European neighbours that the sea disposal of sewage sludge does not have unacceptable effects on the marine environment. This was one of the reasons behind the Government's announcement in December 1986, in response to a recommendation by the House of Lords¹, that from 1987 MAFF and DAFS would publish an annual report on the licensing, enforcement and monitoring of sea disposals. The first such report is expected to be published this Summer. The Lords' report itself highlighted the significant amount of marine monitoring carried out in the UK, particularly by MAFF, and noted that there have been significant reductions in the amounts of trace metals disposed of to sea in sewage sludge in recent

¹ (House of Lords Select Committee on the European Communities: Session 1985-86 17th Report: Dumping of Wastes at Sea; and Hansard (Lords) 18 December 1986, Col 306).

years. On the basis of these measurements, and of the regulatory controls applied in close consultation with the water industry, the Government remains of the view that sewage sludge disposal at sea does not significantly affect the marine environment. This view was corroborated by the Quality Status Report on the North Sea, produced by scientists from all North Sea States for the Second Ministerial Conference on the Protection of the North Sea held in London in November 1987.

2.20 At that Conference North Sea Ministers agreed a Declaration which allows for the continuation of sea disposal of sewage sludge, whilst calling for urgent action to reduce the concentrations of certain contaminants in the sludge. The Declaration requires that the quantities of such contaminants disposed of to the North Sea by this pathway should not increase above 1987 levels. In its Guidance Note on the North Sea Declaration, published in February 1988, the Government explained that the substances concerned would be those listed in Annex I of the Oslo Convention, supplemented where appropriate by substances on the UK's "Red List" and by other potentially significant pollutants of the kind set out in Annex II of the Oslo Convention. The Government is in consultation with water authorities about the list of substances to be regulated in this way and the practical implementation of the ceiling on the amount of these contaminants reaching the North Sea in sludge.

2.21 In addition to these further planned reductions in sludge contaminant levels, the Government will continue to have regard to alternatives to sea disposal. Under Part II of the Food and Environment Protection Act 1985, water authorities applying for licences for sea disposal of sludge are already obliged to demonstrate that they have thoroughly examined alternative disposal options. Arrangements exist for the licensing Departments, MAFF and DAFF, to consult with experts in the environment Departments about the relative merits of land-based routes. MAFF intends to publish, as appendices to the first annual report on the licensing of sea disposals, explanatory statements by two Water Authorities outlining the reasons behind the choice of the sea disposal option, and the implications of changing to other outlets.

2.22 As the Committee point out in their report, a number of options are available for the disposal of the UK's sewage sludge, including re-use on agricultural land, incineration, sea disposal, and landfill. The Government's view is that all of these options, if carried through in the correct manner, can be environmentally safe and acceptable. Equally no single option can be regarded as the BPEO in all circumstances, times and places. Clearly reuse of sludge on agricultural land is intrinsically preferable to its disposal as a waste, but about half of the UK's sewage sludge is already utilised in this way - a higher proportion than in most other European countries. In those cases where sewage works are sited near the sea and serve large conurbations which extend for a significant distance inland, the disadvantages of transporting large quantities of sludge by road tanker through built-up areas to farmland or to scarce landfill sites are manifest. In such circumstances taking account of environmental and social factors as well as economic ones, sea disposal may often be the 'Best Practicable Environmental Option' (BPEO) ie the option entailing the least damage to the environment viewed as a whole. (The 12th Report by the Royal Commission on Environmental Pollution, HMSO 1988, provides an authoritative guide to BPEO).

Incineration

2.23 The Government recognises the concern of the Committee in recommendation 16 that more stringent constraints on traditional sludge disposal routes might require that incineration be more widely used or that new methods of disposal should be sought. Where local circumstances are such that landfill sites or suitable agricultural outlets are not available, or are too expensive in operation, it is clear that incineration may prove to be the most practical option. However, experience has shown that there can be considerable resistance by local people to the construction of incinerators, and water authority proposals of this kind in the past have foundered at planning stage.

2.24 Nevertheless at least one sludge incinerator plant is under construction in the UK and two others are planned for the next few years. The experience gained in operating these plants will be of value in considering future disposal options. But the cost of disposal by this method is estimated to be

rather more than twice the cost of disposal when traditional outlets are available within reasonable distance from the sewage treatment works. Where there are planning problems or existing sites are unsuitable these extra costs may be multiplied several times.

2.25 Because of planning and operational difficulties at existing sewage works, incineration is unlikely to become a major outlet for the disposal of sludge in the medium term. In the UK the current plans for new incinerators, if achieved, will therefore only raise the proportion of national sludge production disposed of in this way from 4% to about 8%. Implementation of the EC Directive requirements for environmental protection where sludge is used in agriculture is not expected to have any marked effect on the amount of UK sludge currently going to agricultural land which is already high by European standards. It is significant that even in the rest of the Community incineration is still the least used method of disposal, accounting for less than one tenth of all sludge production.

Other Options

2.26 The conversion of sludge into useful products has been a goal of researchers world-wide for many years, although so far without success. Attempts to generate new markets for sludge products in the building industry or as animal feedstuffs have all foundered in recent years and little effort is now being spent on such developments. However some progress is being made in the UK and elsewhere on laboratory scale experiments on a process of low temperature pyrolysis to convert sludge to fuel oil. Results so far have been encouraging, although indications are that the net cost of the process is likely to be somewhat higher than that of incineration. Whilst, therefore, the Government will continue to watch such developments closely and to support them where appropriate, it would be wrong to think that such new approaches could make a sizeable contribution to the UK's sludge disposal strategy in the short to medium term.

Best Practicable Environmental Options Studies

2.27 In the light of the outcome of the North Sea Conference, and the need to ensure that disposal policies for sewage sludge develop in a balanced and coherent manner, the Government intends to ask Her Majesty's Inspectorate of Pollution to arrange a study of sewage disposal operations and to publish guidance for assessing the BPEO in particular situations. The study would have regard to ways of assessing the environmental and economic consequences of alternative disposal options. The study would also look at the opportunity for modifying trade waste treatment processes so as to reduce the discharge to sewers of toxic substances deriving from trade premises which in some places contaminate sewage sludge. Meanwhile Licensing Departments will continue to scrutinise sea disposal applications closely and to refuse licences in cases where satisfactory alternatives are available.

Relationship between Pollution and Fish Disease

2.28 The Committee further asked that an independent study into the relationship between pollution and fish disease in the North Sea should be commissioned and published. The UK Fisheries Departments, in particular MAFF and DAFS, have carried out a number of studies into fish diseases in the North Sea and elsewhere and their incidence in relation to man-made contamination of the environment. This work has not shown any correlation between the two in UK waters. This issue is a matter of heated scientific debate but the topic has been addressed in depth by the International Council for the Exploration of the Sea (ICES), an independent intergovernmental body based in Denmark, which provides advice to member governments on fish stock management, marine pollution and related matters. ICES has brought together a wide range of expert opinion on the subject of fish disease and environmental factors, and its consensus view probably represents the best scientific view available at present. A synopsis of that view and supporting bibliography are set out at Annex B.

III POLLUTION FROM AGRICULTURE

3.1 The Committee drew attention to the growth in public concern about agricultural pollution and put forward a number of recommendations for Government action. The Government acknowledges the evidence of an upward trend in pollution from agricultural sources and is in no doubt of the need to seek balanced and effective means to reverse that trend.

3.2 No industry has such a close inter-relationship with the natural environment as does agriculture. The environmental effects of farming activity are complex, and have always included some risks of water pollution. The continuing need for an efficient agricultural industry capable of meeting consumer demand for food, means that, inevitably, some risks will remain. However, while it is clear that the rapid improvement in agricultural productivity in recent decades and the increasing specialisation within the industry has sometimes brought side effects which were not immediately apparent or susceptible to easy control, the available technology for dealing with pollution problems has, fortunately, improved alongside production technology. It is therefore possible for farmers to take adequate precautions to avoid pollution risks, provided they have the means to do so, are properly advised as to the methods, and follow sensible management and maintenance regimes. Given the very large number of small production units in the farming industry, the Government recognises that it has a role to play in ensuring that up to date advice and information are available to farmers so that they know how to deal with the pollution risks which occur in their particular circumstances.

3.3 The Committee criticised the Government's approach to farm pollution as relying too heavily on advice. Advice must of course play a central part in helping farmers to overcome these problems. In practice, however, it is only one part of the Government's efforts to control farm pollution. The Control of Pollution Act 1974 makes it an offence for any farmer to cause pollution - except in those cases where he did so as a result of following good agricultural practice - and it provides for corrective or preventive action where necessary. Administration and enforcement of this Act fall to the DOE and Water Authorities. Under the Government's plans for privatisation, the new National Rivers Authority will take over from the Water Authorities the primary role in bringing prosecutions and otherwise enforcing the legislation. But the Ministry of Agriculture, Fisheries and Food and Welsh Office Agricultural Department, will, as now, have an important role in advising and educating farmers on the avoidance of pollution. The Government remains of the view that this division of responsibilities between the main bodies concerned will continue to ensure a balanced approach to the threat of pollution from agriculture.

3.4 This is not to say, however, that the Government regards the controls presently at its disposal for combating farm pollution as sufficient. On the contrary, Ministers have decided that the regulatory framework enshrined in the Control of Pollution Act 1974 needs to be further developed and strengthened. This section explains below how these moves accord with some of the recommendations set out in the Committee's Report.

REGULATION AND THE CODE OF GOOD AGRICULTURAL PRACTICE

3.5 The Committee's principal recommendations on agricultural pollution were as follows:

19. We conclude that MAFF's reliance on advice will not stem the growing tide of farm pollution incidents.... Together with the DOE, MAFF should take a far more interventionist and regulatory approach to farm pollution. We further recommend that:

i) ADAS Should provide a great deal more advice on conservation and pollution prevention free-of-charge. This service should be widely publicised. Both on-the-spot advice, and all relevant literature, should be readily available.

ii) Adequate grant aid should be readily available to farmers who build new storage and waste treatment facilities to a standard construction. Grant aid should also be available for regular maintenance and for more categories of improvement work.

iii) As a matter of urgency MAFF and the DOE should consider how the Code of Good Agricultural Practice could be made enforceable by statute rather than being merely advisory and report back to Parliament. We would expect any revised Code of Practice to be free-of-charge and in one document. As a first immediate step, regulations on the location, construction and maintenance of storage facilities for silage and for hazardous farm wastes should be introduced under section 31 (4) of COPA. Water authorities would be able to prosecute for any breach.

iv) Section 31 (2) (c) of COPA which provides farmers with a special defence if they pollute the water course should be repealed at an early opportunity.

(para 78)

3.6 The Government has considered each part of these proposals carefully. In the case of the so-called special defence provision - iv above -, the Government notes that the original reason for its inclusion in the Act was to ensure that farmers who, uniquely and necessarily as part of normal agricultural practice, spread large quantities of potentially polluting substances on the land in order to dispose of them safely and to benefit the land, should not be at an undue risk of prosecution in the event of pollution of a watercourse occurring either as a result of exceptional weather conditions or by means which could not reasonably have been foreseen by the farmer. However, the fact that the defence has only once or twice been successfully deployed by a farmer suggests not only that, as MAFF indicated in its evidence to the Committee, the clause does not prevent the conviction of those responsible for farm waste pollution, but also that the threat of prosecutions being brought in response to normal farming activities is not a serious one. The Government therefore agrees with the Committee's recommendation that Section 31 (2) (c) should be removed from the Act.

3.7 As regards the Committee's comments about the format and presentation of the Code of Good Agricultural Practice, - i above -, the Government accepts that more can be done to ensure that the advice contained within the Code is in a more readily accessible form for farmers. As a first step, the Government proposes to make the Code itself free of charge. This should ensure that it is more widely read by those farmers who need to know its contents. In addition, the Government proposes to re-design as many as possible of the leaflets associated with the Code so that they are in a standard format and can, where appropriate, be presented together with the Code as a free advisory package for farmers. On the other hand, the Government does not believe that it would be right to follow the Committee's suggestion that all the material forming part of the code should be brought together in a single

document. If this was done, the result would be very substantial book - so large that most farmers might feel quite unable to use it. The Government believes that the essential objective - that of collecting together in a simplified format the core material which most farmers need to know - can be achieved as the Committee suggested; the Code would contain references to those other publications to which some farmers may need to refer for more specialised and detailed information. In the Government's view, it will remain appropriate to make a charge for this latter type of information which will frequently be referred to by farmers for other practical reasons as well as for advice on pollution control.

3.8 Given the decision to seek removal of the defence clause and the aim of improving the presentation of the Code, it remains to be considered what should be the status of the revised Code under the law. The Committee has recommended that it should be statutorily enforceable, but the Government is not convinced that this would be a useful step. The Code includes, as it must, a very wide range of advice on subjects relevant to the practical difficulties farmers may face in combating pollution. But in drawing up generalised guidelines, it is impossible to cater for all situations which will actually occur. Indeed, in some cases, rigid adherence to the guidelines in the Code would provide poorer guarantees of avoiding pollution than if the particular farmers concerned sought more detailed advice specific to their farm situations. It remains the Government's view that to make the Code directly enforceable as part of the law would impose too rigid a system upon the farming industry and upon those in ADAS and elsewhere responsible for advising farmers on the avoidance of pollution risks.

3.9 The Government therefore proposes to introduce amendments to the Control of Pollution Act 1974 which will empower the Minister of Agriculture, Fisheries, and Food to offer the Code as an authoritative guide to water pollution from agriculture and to the steps which may be taken to avoid it. Where relevant, it would be open to either the prosecution, or the defence in mitigation, to refer to the Code in the event of a prosecution for pollution under the appropriate sections of COPA. This is a significant change which, while not going all the way to meet the Committee's apparent wish that the water authorities should be able to require compliance with the Code as an end in itself, will make it clear to farmers that any failure on their part to comply with provisions of the Code might well count heavily against them in the event of any conviction for a pollution offence.

3.10 In addition to its recommendations about the Code the Committee took issue with statements in the Government's Consultation Paper "Water Environment: The Next Steps"; which indicated that it was not intended that regulations under Section 31 (4) of the Control of Pollution Act 1974 should extend to farming activities. The Government has listened to those who criticised this aspect of the Consultation Paper and now accepts that it would be unreasonable to introduce controls on the storage of oil and other industrial chemicals while excluding substances which can damage the water environment at least as much -such as silage effluent and slurry. Indeed, the forthcoming report "Water pollution from farm waste" (1988) by the Water Authorities Assoc and MAFF, notes that in 1987 total farm pollution incidents reached a new high of 3890, representing a 13% increase over 1986, and that the number of such incidents classed as serious rose by nearly 60% to 990. The Government believes that regulations requiring farmers to contain these materials adequately should present no difficulty to those farmers who already abide by the Code of Good Agricultural Practice. They would, however, enable the National Rivers Authority to ensure that farmers who fail to provide suitable containment facilities could be required to do so.

3.11 The Government proposes that regulations under Section 31(4) should be so drafted as to cover the construction of new or extended silage and slurry facilities as well as certain industrial storage facilities. The Government will also consider to what extent it is possible to draft the legislation in such a way as to ensure that facilities are properly managed and maintained. So far as existing facilities are concerned, the Government proposes to draft the legislation in such a way as to provide a power to the National Rivers Authority to serve notice on particular sites, bringing the facilities immediately within the scope of the Regulations, wherever they see reasonable cause to believe that pollution may otherwise occur.

FREE ADVICE AND CAPITAL GRANTS

3.12 With the prospect of a change in the status of the Code of Good Agricultural Practice, and the proposed introduction of new regulations requiring them to provide adequate containment facilities for potentially polluting substances, farmers may well ask how, at a time of great change and economic pressure, they can reasonably be expected to take additional measures and incur additional costs. The Government has taken due note of the Committee's comments about the need to give farmers ready access to the best possible advice, and of the evidence that "face to face" contact can have a very significant impact upon farmers' thinking and actions on pollution control. The initial general appraisal by ADAS on pollution control will be free, although farmers will be charged for more specialised and detailed advisory or design services. The Government will encourage the farming community to seek help from ADAS through appropriate publicity and proposes to issue a reminder to farmers about the availability of free advice which will also draw their attention to the leaflets currently available which contain advice on pollution control. ADAS will also continue to co-operate with Water Authorities' farm pollution campaigns like the successful one conducted by South West Water since 1984.

3.13 The Government recognises that in the particular circumstances of the agricultural industry capital grants play a role in encouraging farmers to make adequate provision for waste management facilities.

3.14 Grant is currently available to most farmers who invest in new waste storage or treatment facilities, subject only to a limitation on the grant-aidable investment of £35,000 per labour unit, within a ceiling of £50,000 per business. The present rates of grant are 30% in the lowlands and 60% in the Less Favoured Areas -twice as high as the rates available for other investments. At the time the 60% grant rate was introduced it was above the maximum rate permitted by the Regulation 797/85 and required a specific derogation from EC rules. The Community has subsequently amended Article 8 (1) of the Regulation to permit grants for environmental works at levels above 45%. The extent to which these high rates of grant are stimulating new investments in waste facilities is already becoming apparent. For example, in 1987/88 the Ministry of Agriculture, Fisheries and Food expect to pay grant of £5.8m in England and Wales on waste facilities. This represents over 11 per cent of total grant expenditure on the main schemes and compares most favourably with the £1.2m, or just under 1.3 per cent, we spent in 1985/86. Even so the current expenditure does not yet reflect the full impact of the grants now available because it includes many claims for grant at the lower rates obtaining under two schemes which have been closed for new investments.

3.15 The Committee also recommended that grant-aided facilities should be built to a standard construction. In fact, the existing grant system requires that, to be eligible for grant aid, facilities must comply with certain standards. They must be properly designed for their intended purpose and have a design life of at least 10 years. All relevant British Standards specifications and other guidelines, such as those contained within the Code of Good Agricultural Practice, must be met. As an additional safeguard - one which was welcomed by the Committee in its report - farmers must now consult their water authorities before any application for grant on facilities involving potential pollution risks will be accepted by MAFF. These arrangements will be yet further strengthened when the proposed regulations under Section 31 (4) of COPA are brought into effect, since it will then be necessary for those statutory provisions to be met before a project will be accepted for grant assistance.

3.16 Both the domestic and Community legislation relating to the payment of farm capital grants is concerned solely with encouraging investments of a capital nature. The Government is believes that it would not be appropriate - as the Committee recommends - to extend the grant provisions so as to cover maintenance work on farm waste handling and storage facilities. Expenditure on maintenance work is not capital expenditure and is not eligible for grant aid under the EC and UK legislation. There are difficulties in verifying, to the extent necessary for the proper control of public expenditure, that maintenance work has been carried out to an acceptable standard. Most farmers already adequately maintain their storage and waste bunding facilities, and grant aid seems an inefficient means of ensuring that a minority of farmers undertake proper maintenance work. The Government is, however, supporting research in this area. For example, projects aimed at establishing the most suitable construction materials and designs for silage stores should in future help to reduce both the cost and the difficulty of maintaining such facilities. It should be noted that the Government does grant aid replacement of facilities and in this way provides significant assistance to farmers seeking to maintain a high standard of facility.

3.17 Rates of grant and the coverage of items qualifying for grant are kept under regular review with the object of ensuring as far as possible that available resources are allocated in a way which best responds to the current economic, social and environmental conditions affecting the industry. The concerns of the Committee about the need to increase assistance for capital investments on farms to combat pollution are noted and will clearly influence consideration of capital grant priorities over the coming months.

**OTHER MATTERS : POLLUTION FROM NITRATE APPLICATIONS,
AFFORESTATION AND FISH FARMS**

3.18 As well as the Government's overall approach to agricultural pollution and the general issue of farm waste management, the Committee referred more briefly to pollution from nitrate fertilisers, from afforestation and from fish farming.

3.19 Nitrate The Government has been developing its strategy for limiting nitrate concentrations in drinking water in the light of the report of the Nitrate Co-Ordination Group published in December 1986. Essentially three approaches, that of water treatment, a combination of water treatment and blending, and water protection have been considered. Severn-Trent and Anglian which have vulnerable water sources (characteristically in areas ^{where} there is intensive agriculture sustained by heavy applications of fertiliser and the soil is highly porous) have been assessing the situation, and there have been useful discussions with them and the agricultural industry.

3.20 It has become clear that due to the wide variability of water catchment sizes, associated geology, climate, and land use, within such areas the appropriate solution will vary from one source to another. In some areas the obvious solution will be to blend with a lower nitrate source and in others the installation of de-nitrification plant may be the answer. In addition there may also be scope for modifying agricultural practices to limit nitrate inputs to the vulnerable aquifers, although reductions may take many years to affect nitrate concentrations leaching.

3.21 Advice on practical steps which farmers can take has therefore recently been issued to all farmers in the country, and in nitrate problem areas they are being invited to local meetings to hear more about the problems. This campaign is being developed jointly by MAFF, DOE, the Water Authorities Association, National Farmers' Union, Country Landowners Association, Fertiliser Manufacturers Association, and UK Agricultural Supply Trades Association.

3.22 The Government is also studying more fully the various options for dealing with the problem in different geographic and economic situations. Assessments are being made of the effectiveness of possible measures for a range of differing hydrogeological conditions, catchment area size, farm type and so on. The economic implications for the farming and water industries of the blending, treatment and protection options are being compared.

3.23 Once these studies are complete, discussions will be held with agricultural, water industry, and fertiliser manufacturing, interests on the findings, and the Government will then decide what further action is necessary.

3.24 Afforestation The Committee noted that changes in the CAP were likely significantly to affect agricultural land use, particularly through the transfer of marginal agricultural land to coniferous afforestation, and that this in its turn could have a significant impact on water quality, in particular through increased acidification, as well as through discolouration of water, leaching of toxins and release of nutrients. It concluded that:

It is crucial that any major expansion of coniferous forest should be carefully controlled and restricted to areas where there is no risk of damage to rivers and upland water sources

The Government accepts that in a period of rapid agricultural change it is essential to watch for changes in land use which may damage water sources. It is not, however, possible wholly to eliminate risks to water courses from coniferous afforestation. What is important is to ensure that good forestry practices are followed to minimise these risks. This is well recognised in forestry, and a substantial amount of research work has been carried out on this subject in recent years and is continuing.

3.25 Research has shown that careful attention to operational practice can do a great deal to avoid adverse effects on water quality. The Forestry Commission's publication "The Management of Forest Streams" (1980) and the "Forestry and Woodland Code" (1985) published by Timber Growers United Kingdom give advice on how this should be done. The Forestry Commission has recently set up a working group of experts from the water and forestry industries to produce guidelines for the management of forest streams. These guidelines will set out practical measures which will minimise the likelihood of damage to water quality by forest operations. The aim is not merely to avoid damage, but to protect and enhance forest watercourses and their associated habitats; these are areas of great importance for ecological diversity - particularly in upland forests - and valuable for wildlife, as landscape features, and for a wide range of recreational activity.

3.26 Effective control is exercised by the Forestry Commission by means of the consultation procedures undertaken before approval of planting grants. By this means the views of water undertakings on new afforestation proposals are made known to the Commission, either directly or through the appropriate local authority, and taken into account in deciding whether schemes should be approved. The switch to grants as the sole mechanism for forestry support following the tax changes announced in the Budget will in itself strengthen the Commission's role in this area.

3.27 Fish Farms The Committee also referred to fish farming, and in particular to the current exemption from abstraction licensing enjoyed by those farming fish for the table. As the Committee was informed, it is the Government's intention to seek removal of this exemption from the statute at an early opportunity. In some areas such as the Hampshire Avon, fish farmers are working with water authorities on a range of measures to minimise the adverse effects of abstraction and discharges on river quality.

STRUCTURE OF THE MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

3.28 Responsibility for the control of pollution lies with the Department of Environment, but other departments, including Industry, Energy, and Agriculture, have a close interest because of the environmental impacts of the industries with which they deal. The Government recognizes that for reasons referred to at the beginning of this section, the contribution of the Ministry of Agriculture, Fisheries and Food is of particular importance, and that the organization of the Ministry should therefore reflect this. In this context, the Government notes the Committee's view that there should be structures within MAFF capable of overseeing and co-ordinating policy on conservation and pollution across the whole range of the Ministry's activities:

19...MAFF should have a unified conservation and pollution prevention division, headed by an official with the rank of Under-Secretary or above.

3.29 As the Committee was informed, a major reorganisation of the Ministry took place in 1986 which resulted in the establishment of a new Under Secretary Group - the "Land and Environmental Affairs Group" - to take the lead on a wide range of policies relating to the interface between agriculture and the environment. At the same time, the Environmental and Conservation Policy Division was newly created within that Group, to take responsibility within MAFF for general countryside conservation issues and for agricultural pollution. That Division took over the lead on all policy issues relating to farm pollution with the exception of those relating to pesticides, where the volume of work - under different legislation - is sufficient to justify

an entirely separate Division. More recently a further restructuring has taken place with the part of ECP Division dealing with conservation being joined with a task force responsible for Environmentally Sensitive Areas to form a new Conservation Policy Division. The remaining branches now form a Division in their own right, Environmental Protection Division.

3.30 This change has ensured that even greater attention than hitherto can be paid to the problems created by agricultural pollution and more effort can be put into overcoming the problem. The fact that the two new Divisions report to a single Under Secretary ensures an important element of oversight across the range of conservation and pollution issues at that level.

3.31 It should be added that all aspects of the Ministry's work to which the Committee referred, including that concerning the marine environment, are now the responsibility of the Minister of State, who is thus enabled to take an overview on all environmental issues affecting the Ministry's interests, which was not possible under the previous division of Ministerial duties. Thus, while agreeing whole-heartedly with the objective of the Committee's recommendations in this area, the Government believes that MAFF is now organised in a way which ensures the proper co-ordination and direction of its conservation and pollution policies.

IV POLLUTION BY INDUSTRY

4.1 While acknowledging that a good deal remained to be done to clear what they termed 'historic pollution' by industry, the Committee generally accepted the view of witnesses that the discharge of industrial effluents was under relatively good control. The Government agrees with this assessment, and is encouraged by the generally high level of cooperation between industry and the water authorities. In contrast, isolated pollution incidents due to accidental spillages are increasing and require measures of the kind anticipated in the Government's recent consultation paper. The Committee clearly recognised this as an important area, particularly in the light of the Sandoz incident on the Rhine which occurred just before the Committee's inquiry. The Committee also considered certain of the problems arising from the proliferation of new chemicals. This section reviews each of these areas in turn.

Regulation of Industrial Discharges

4.2 The regulation of discharges of industrial wastes to water, by the system of consents, is a central element of long-established pollution control arrangements in Britain. In 1983-6 the Government extended the procedures to cover discharges to coastal waters and some previously unprotected estuaries; it also introduced publicity and public involvement in the consent system and required consents and monitoring data to be included in public registers. Further developments of this system will arise from the new policy on dangerous substances already referred to and from the creation of the National Rivers Authority (see Part V). While the Committee did not question the essential merits of the existing system of control, they did make a number of recommendations for strengthening the way these controls operate.

4.3 In recommendation 29 the Committee proposed:

"That the DOE should consider giving a prohibition power, with appropriate safeguards or a right of appeal to the discharger, to the water authorities or an independent regulatory body to stop polluters from discharging effluent to water courses where imperative."

The Committee justified this recommendation on the grounds that "the Water Authorities have no power to act quickly to stop discharges in the event of an emergency". There are however unimplemented provisions, in section 38 of the Control of Pollution Act, which would allow water authorities to revoke a consent with immediate effect, subject only to a requirement to pay compensation if they could have reasonably foreseen when granting the consent the possibility of such an emergency, or if the emergency was the consequence of their having subsequently granted other consents. These provisions were not included in the implementation of Part II of COPA and the Government, in its recent public consultation, invited views on whether, given the limitation imposed by the compensation procedure, these provisions were likely to prove worthwhile and effective. An alternative course would be to replace existing provisions by a simple power, exercisable only by the Secretary of State, to direct early variation, without compensation, in limited circumstances, such as the protection of public health or the implementation of national policy, such as giving effect to international agreements. The Government is considering responses to consultation on this point.

4.4 In recommendation 32(i) the Committee proposed that:

"dischargers should be given a new duty to notify all new pollutants in their effluent to the water authority, and water authorities should be free to revise the consent without financial penalty".

In the Government's view existing legislation already meets the Committee's underlying concern. Where a discharger adds to his discharge a new pollutant not covered by the consent, which materially adds to the noxious quality of the effluent, he will be guilty of an offence unless he seeks a review of his consent. It is, of course, possible for a badly worded consent to lead to

doubt as to whether a new pollutant is covered or not. The water authorities - and in future the NRA - should therefore exercise their duty to review consents periodically, and assess the continued adequacy of their terms. They will also want to remind dischargers from time to time of the legal position and of the need for them to notify the regulatory authority of any significant change to the composition or other characteristics of their effluents. Over time, as national or EC quality standards are set for an increasing range of substances, it is also likely that the range of conditions covered in consents will increase.

4.5 A further limb of the recommendation proposed that:

"Water Authorities should exercise their powers under S 34(4)(e) and (f) of COPA requiring dischargers to keep records of the quality and flow of their discharges, and the making of returns."

The Government's view here is that this is a matter which should be left to the decision of the authority. Self-reporting procedures can be helpful. But their usefulness is limited by the unavoidable need for effective independent compliance monitoring by the pollution control authority itself.

4.6 The final area of uncertainty in discharge consent controls to which the Committee refer concerns the ability to identify mixing zones in estuaries. The Committee conclude:

"that the universal application in estuaries of the mixing zone concept must be seriously flawed, with the result that it is not always possible to apply effective estuarine environmental quality standards. The Fixed Limit approach for continuous discharges from fixed plant into estuaries would therefore seem generally to offer more certainty for environmental protection in estuaries and has much to commend it."

The Government finds some difficulty with this conclusion, which it believes reflects certain misunderstandings. Whilst it is undoubtedly more difficult to define mixing zones in estuaries than in other bodies of water, these difficulties are not insurmountable, and valuable work is currently being done

by the water industry to improve the techniques for setting and monitoring mixing zone boundaries in estuaries, including the use of dispersion models. The Government regards the definition of such zones as an essential feature of any system for the proper management of estuaries and coastal waters. This is particularly true of a strategy based on the establishment of environmental quality objectives and standards, but even a fixed limit approach ought to encompass environmental monitoring to assess its effectiveness, which in turn requires an assessment of the area adjacent to the discharge within which such monitoring would not be appropriate (effectively the mixing zone). It is moreover difficult to envisage on what basis fixed limits could rationally be set for all discharges of whatever description to estuarial waters. A fixed limit approach alone takes no account of the number of inputs or background levels of a particular substance in the estuary, and offers no guarantee of a particular level of water quality or certainty of environmental protection.

Pollution Incidents

4.7 As the Committee observe, pollution incidents have doubled in the last five years, to approximately 20,000 per annum, the majority of which are oil spillages, and leakages of sewer and farm wastes. While most are minor, all have their cost in financial and environmental terms, and a few necessarily carry the risk of a major disaster such as that which affected the Rhine in 1986 as a result of a fire at the Sandoz plant. The Government shares the view that precautionary measures, particularly to safeguard public water supplies, are of great importance. They should be directed both towards emergency containment measures, intended to reduce the severity of such incidents as do occur, and towards precautionary measures intended to prevent them entirely.

4.8 The serious pollution incidents on the River Dee in 1984 led to a nationwide review by water supply undertakings of their pollution prevention and emergency procedures. As a result, a number of important improvements have been implemented and more are being developed.

4.9 Water Authorities have increased the number of pollution monitoring stations on water supply rivers and have prepared "time of travel" and "dispersion" tables for use in cases where spillages or other pollution incidents are reported. Industrialists have cooperated well in providing, so far as commercial confidentiality allows, details of quantities of chemicals stored, and many are providing protection against accidental discharges to watercourses on the basis of advice from the water authorities. Registers of hazardous chemicals stored or manufactured upstream of potable water intakes are being enlarged. Accidental spillages are now being reported much more quickly and integrated procedures for communication between the various local and national authorities for action during emergencies have been instituted. The Water Research Centre provides a 24 hour call out service for toxicological advice, and work is proceeding on a study of risk assessment which, when developed, will enable water authorities to refine their prevention and emergency procedures.

4.10 Automatic chemical and fish monitoring stations are being developed for installation at water intakes as well as at strategic points upstream in order to provide advance warning of possible pollution and prevent risk of contamination of water in supply. New rapid methods for bacteriological cleansing of raw waters are being developed to enable regular taste and odour monitoring to be safely carried out without risk to health of employees.

4.11 However, in addition to such measures to contain the effects of pollution incidents when they occur, the Government accepts the need for precautionary measures to minimise the risks of their occurrence in the first place. The planning system which provides in many cases for consultation with the relevant water authority is another safeguard where new developments are proposed. Important safeguards also exist through the Control of Major Industrial Accident Hazards (CIMAH) regulations, enforced by the Health and Safety Executive. These regulations, which relate to production processes and storage of specified dangerous substances - notably in the chemical and petrochemical industries, require necessary precautions against major accidents to be taken, including in some cases full safety assessments. They will be revised to reflect any changes to the Seveso Directive which is currently under review as a result of the Sandoz incident. They are intended

to prevent or to minimise the consequences both to man and the environment of major but relatively infrequent chemical accidents. They may not necessarily apply to less serious but more frequent accidents.

4.12 Proposals to provide for a wider framework of precautionary measures were set out in the Government's 1986 consultation paper. They included maintenance of the existing emergency powers to forestall incidents under S46 of COPA; development of regulations under S31(4) in respect of the location, construction and maintenance of storage facilities which might give rise to incidents; and the development of protection zones to regulate risks in areas where water sources are particularly vulnerable. In common with most consultees, the Committee supported this general approach, which will be carried forward in the next Water Bill. The Government accepts the Committee's view that work should meanwhile proceed, within existing legislation, in respect of both the storage of dangerous substances and the development of protection zone policies.

4.13 The Committee comment that:

"25. We welcome the proposal in the DOE's Green Paper to introduce regulations under section 31(4) of COPA on the location, construction and maintenance of stores to be used for hazardous substances either adjacent to water or likely to drain into the sewerage system. We recommend that regulations should be introduced without delay. It will be crucial for these to apply to existing plant as well as newly constructed plant (para 91.)"

The Government has been considering with the water industry, the detailed scope and form of such regulations. This will be followed in due course by consultations with other interested parties. It believes there is advantage initially in concentrating on a limited number of measures which are likely to have the greatest impact on numbers of pollution incidents. Currently over one third of all reported pollution incidents are from spillages of oil, and farm wastes including silage and slurry. Regulations in this area would probably require all new installations to incorporate impermeable bases and satisfactory bunding. However, the Government is not persuaded at this

stage that it would be appropriate to extend the controls across the board to existing installations in view of the number involved. It favours a new power for the National Rivers Authority to serve enforcement notices on existing installations where pollution risks are deemed to exist, and in this way to bring them within the scope of the regulations. In the light of the experience gained in enforcing limited regulations of this kind, there may be a case subsequently for extending them to other types of installation.

4.14 The Committee further recommend that:

"26. In conjunction with the new regulations to improve control of storage of hazardous substances, some form of financial aid should be available to industry towards improving both existing and new storage facilities. Such cash help to industrialists would be consistent with that which is already available to UK farmers. It could be in the form of tax incentives, or straightforward grant aid. It should be paid only for work which conforms to a specific standard."

The Government believes that it would be wrong to extend financial assistance of this kind to industry for several reasons. First, there has been a long-standing acceptance of the Polluter Pays Principle under which costs are borne by those whose activities could give rise to pollution rather than by taxpayers in general. Second, many stores already meet appropriate standards and it would seem unfair to penalize those who have already taken these precautions at their own expense. Rather the need is to encourage wider adoption of best practice in the design and operation of storage facilities throughout the industry.

4.15 The Government's proposal on protection zones can also play a part in the prevention of incidents. In the light of consultation the Government will, in the forthcoming Water Bill, seek to simplify and streamline procedures for the designation of protection zones. Such zones, within which potentially polluting practices can be regulated, are relevant to the protection of both groundwater and surface waters which may be vulnerable to pollution from diffuse sources, including run-off, and spillages. A number of rivers are seriously vulnerable because they combine major chemical stores and

industrial processes on the river banks with major downstream abstractions for water supply. The River Dee is a notable example. It is used as a source of water supply for 2 million people. In recent years it has suffered from a high rate of pollution incidents. In some cases these incidents have been so serious as to require the closure of water intakes to protect public health. The Government welcomes a proposal by Welsh Water Authority to establish protection zones using powers under S31(5) of COPA to reduce pollution risks. In two protection zones close to water abstraction intakes the Authority proposes to prohibit the storage or use of hazardous substances, ie stocks of chemicals which could in the event of an accident result in concentrations at intakes which would be harmful to man. In a larger zone consisting of the whole river catchment upstream of the lowest water abstraction intake it proposes that prescribed activities involving the storage or use of hazardous substances shall require the consent of the Water Authority. Before a consent is issued the company would be required to provide a Safety Case demonstrating that it has carried out a hazard identification and risk assessment and that reasonable physical measures had been taken to minimise the risk and consequence of accidents. The Company would also submit an Emergency Procedure Case showing that it had plans and procedures to be used in the event of accidents. Protection zones of this kind would be carefully monitored so that the lessons gained can be fully applied elsewhere. The establishment of such zones would, of course, be subject to Parliamentary approval of the relevant regulations which would be formulated following the necessary statutory consultations.

Information on Chemical Formulations

4.16 In an emergency pollution control authorities need as much relevant information as possible about chemicals which may have entered, or are likely to enter the water course. As explained above, one of the measures taken in the light of recent pollution incidents in the UK was the establishment by the Water Research Centre of a 24-hour information service to water authorities on chemical properties. The Committee referred to problems arising from use of trade names, commercial confidentiality and difficulties of detection, pointed to developments elsewhere in the European Community, and made the following recommendations:

27. We conclude that provision by chemical companies to their customers of data on the hazardous effects of their products in the environment, as well as inspection of their customer's storage facilities, are worthwhile measures. We recommend that the DOE and the Health and Safety Executive, together with the Chemical Industries Association and Confederation of British Industry should consider whether such schemes could be introduced here.

28. We recommend that there should be a pooled index system, to which the water authorities should have access, with information on the properties of dangerous chemicals either in use in manufacturing or simply being stored.

The Government fully recognises that, both in emergencies and in the course of their normal pollution control operations, water authorities need access to as much relevant information as possible about chemicals and their potential environmental effects.

4.17 The provision of adequate data on the hazardous effects of chemicals on the environment is necessarily difficult because of the wide range of possible effects in different situations. In the case of pesticides, given their toxicity, detailed advice is now provided on the label and in the form of product safety data sheets. Some manufacturers of other types of chemical provide information about environmental hazards on the safety data sheet but for many chemical substances full information on possible environmental hazards is not currently available. However, the Government is actively participating in discussions at European Community level on more comprehensive provisions for the classification and labelling of substances dangerous to the environment. So far as inspection of customers' storage facilities is concerned, HSE inspectors already undertake a planned programme of visits to hazardous chemical plants and storage facilities. While HSE would welcome manufacturers advising their customers on storage and use of chemicals on an informal basis, HSE ultimately have the statutory responsibility for inspecting all installations.

4.18 The proposal for a pooled index system is an interesting one but it should be recalled that a number of databases and databanks holding information on the properties of chemicals, including their environmental effects, already exist and some can be accessed on a commercial basis. The construction and maintenance of a pooled index system accessible to water authorities on the very large number of industrial chemicals in use would be a very large task and in view of the lack of full information on possible environmental hazards it is not clear that such a system would have any very great advantages over existing sources of information, such as the service already provided by WRC. However, the Government Departments concerned will keep the issue under close review in the light of technical and commercial developments.

V STRENGTHENING THE POLLUTION CONTROL SYSTEM:

A NATIONAL RIVERS AUTHORITY

5.1 The Committee made a number of recommendations concerning the operation of water pollution control, covering such matters as information, monitoring, enforcement of controls, and the financing of the control system. They also referred to general issues of organization and accountability, and to links with other river management functions. The Government has carefully considered these recommendations in the light of its wider environmental objectives and its proposal to transfer the utility functions of the water authorities to the private sector.

5.2 In its consultation paper in 1986, 'The Water Environment: The Next Steps', and in its recent proposals for a National Rivers Authority, the Government made clear that, whatever structure was finally chosen for a privatised water industry, it was committed to ensuring that arrangements for protecting the water environment were strengthened wherever necessary. The detailed comments below show how the Government intends to do this.

THE NATIONAL RIVERS AUTHORITY

5.3 At present the main executive functions for water pollution control are vested in the regional and the Welsh water authorities and they are in practice the pollution control authorities in respect of water in their regions. Over the past decade they have made a valuable contribution to safeguarding and improving water quality in England and Wales.

5.4 In their important recommendations 8 and 9 the Committee observed:

8. One matter which is very important is whether the entire regulatory function under COPA could be carried out more effectively by an independent body and not, as at present, by the water authorities and HMIP separately. On the face of it, one independent regulatory body seems to be an arrangement with clear advantages.

9. If the water authorities were privatised their present regulatory functions would need to be given either to the HMIP or to a new unified and independent regulatory body.

The Government announced its general decision on the future arrangements for regulatory functions shortly after the Committee reported. Detailed policy proposals were published in July 1987, and confirmed, in the light of consultation, in December. While timing precluded full discussion of these issues with the Committee, the Government endorses the Committee's comments, and its current policies are in line with the Committee's recommendations.

5.5 The arrangements established in 1974 have proved successful in a number of ways, but, over time, weaknesses have also become apparent. With ten separate authorities, the ability to ensure coordinated development of national policy has been restricted to general Ministerial powers of appointment and direction, and differing practices have inevitably evolved in such areas as the interpretation of standards and classification systems and in monitoring and control. More important, there has been continuing concern for the conflicts and difficulties which inevitably arise from placing the regulation of effluent discharges and water abstraction in the hands of the bodies which are themselves the principal effluent dischargers and abstractors. While the utility services have been in public hands this has been acceptable, although in recent years, there has been growing concern about the effectiveness of these arrangements. Even without privatisation, there would have been a case for reassessing the current system.

But with privatisation this becomes essential. The Government has now concluded that the development of national water pollution control policies, proper external regulation of sewage disposal, and accountable direction of the related functions of water resource planning, drainage, fisheries, recreation and conservation, are now best served by vesting them in a new public body the National Rivers Authority, when the utility functions of the present water authorities pass to the private sector.

5.6 The Government recognizes that some of those who gave evidence to the Committee argued for the preservation of combined utility and river functions in their present form. The Government has always accepted that benefits can flow from such arrangements, but these must be balanced with other considerations. The first of these is that it is clear, in the light of responses to consultation, that if pollution control functions were given to the privatised water and sewage utilities, those companies could not - because of the inescapable conflicts of interest to which they would be subject - enjoy the confidence of those whom they sought to regulate. The Government regards public confidence as essential for effective pollution control and is determined that it should be maintained and enhanced. It would be wrong to burden the privatised utilities with statutory duties which they could never expect to discharge confidently, nor, in consequence, effectively.

5.7 It has in any case proved possible to preserve integrated control over river catchments in the proposed National Rivers Authority. That Authority will be able to ensure, at the river basin level, co-ordinated management of all aspects of natural waters - abstractions, discharges, pollution control, drainage and conservation - and pollution control can therefore be pursued within a unified framework of water environment management.

5.8 Within pollution control the actual functions which the Government proposes should devolve to the NRA are as follows:

- (i) granting consents in respect of:
 - effluent discharges to inland, estuarial and coastal waters
 - other potentially polluting activities which are subject to regulations (eg in protect zones);
- (ii) monitoring discharges and enforcing compliance with consents;
- (iii) monitoring the aquatic environment generally;
- (iv) enforcing, as a general statutory duty, the successor legislation to PART II of COPA, on water environment protection, which will cover not only discharge consents but also bye-laws, protection zones and precautionary regulations;
- (v) enforcing EC water pollution quality standards for rivers, estuaries and coastal waters
- (vi) routine publication of data on operation of pollution controls and state of aquatic environment.

5.9 In developing its proposals the Government reflected carefully on whether the NRA should be a full operational authority or whether it should be kept simply as a narrow licensing authority, with operational functions in the hands of the privatised utilities. In this regard, it found the Committee's assessment of the current needs of effective pollution control helpful. The Government accepts the urden of the Committee's report that - with increasing and ever more complex to the water environment - what is needed is to strengthen the pollution control system. It is the Government's view that to divide the operation of the pollution control system a consent-granting authority and a number of private sector companies charged with interpreting and enforcing the consents would jeopardise the overall effectiveness of the system to an un acceptable degree.

5.10 This does not preclude contracting out particular services. Indeed the Government believes that, whenever it is effective and economical to do so this course should be followed. It must be recognised, however, that there is a continuum from the determination of consent conditions through monitoring and enforcement action to judicial process which, in the interests of both effectiveness and accountability, must remain firm and coherent. And it is anxious to avoid direct conflicts of interest recurring between utility companies as dischargers and operators of an enforcement role.

5.11 In their recommendation 11 the Committee record that it would give them "cause for very real alarm" if the regulatory body were not given "adequate staffing, resources and the necessary powers to oversee the activities of a privatised water industry". The Government accepts this. It is axiomatic that the powers and resources of the regulatory authority should match the range of functions which fall to it, and take account of the requirement of the statutory system of river quality objectives and associated developments in sampling and compliance methods.

5.12 The functions of the NRA, as the Pollution Control Authority for water, will complement those of Her Majesty's Inspectorate of Pollution. The Inspectorate will be responsible for developing an integrated approach to pollution control which will draw together decisions on discharges to different media from a single industrial source so as to minimise the effects on the environment as a whole, without imposing excessive costs on industry. As one element of this, HMIP will assume responsibility for the process control and technology based elements of the Government's new policy on controlling inputs of dangerous substances set out in section 1. This policy will operate within a continuing framework of environmental quality objectives. Consent conditions for discharges to the aquatic environment will continue to be set so as to ensure that the relevant quality objectives and standards for the waters concerned are met. It will however be open to HMIP to impose more stringent conditions in the light of what is technically achievable in order to secure the aim of minimising inputs to the aquatic environment. While such discharges will therefore be assessed in relation to two sets of criteria, the administrative arrangements will be designed to avoid procedural burdens on industry. Detailed arrangements for the

respective roles of the NRA and HMIP in the authorisation processes and the issue of consent conditions will be set out in the Government's forthcoming consultation paper. The Department has recently issued a separate consultation paper on the regulation of discharges to sewer after privatisation, which deals with related matters.

5.12a As well as its direct involvement with the most dangerous substances to water, HMIP will be available to advise the Secretary of State on appellate and call-in cases and all aspects of water pollution control which have implications for other media. In the period until the NRA is constituted, HMIP will as part of their current responsibility for regulating water authority discharges, assist in developing certain of the policies and procedures (eg monitoring requirements) on which the NRAs operations will be based. Thereafter the two bodies will work closely together in developing and promoting good practice in the control of pollution.

5.13 The Government's proposals for the NRA, in conjunction with the establishment last year of HMIP, are generally consistent with the Committee's recommendations and with responses to the Government's consultation proposals. The Government has no doubt that, with the support of all the bodies making use of our rivers and estuaries or concerned for their well-being, their establishment will come to be seen as a landmark in the development of water environment protection in the United Kingdom.

Pollution Control Procedures

5.14 At various points in their report the Committee makes recommendations on detailed aspects of the operation, enforcement and monitoring of pollution controls. These are discussed together here, partly because of their relevance in each of the areas considered earlier in this Response, and partly because of their relevance to the future work of the NRA. The main issues concern the way water quality is assessed and monitored; the availability of information

to pollution control authorities and to the public at large; and the way in which such evidence is used to ensure effective operation of the control system. A final section covers finance, including incentives to good practice, and matters concerning prosecution and legal enforcement.

5.15 River and Estuary Classifications In recommendation 12(i) the Committee propose that:

"DOE should consider further the adequacy and sensitivity to change of the current classification system"

5.16 The allocation of a stretch of river to a particular Class is sensitive to the inherent variability of water quality, to the high cost and in some cases practical difficulty of very frequent sampling, and to wide fluctuations in river flows within and between years. In addition classification schemes may prove insensitive to quality changes not covered by the specific criteria used in the schemes, particularly in the case of high quality waters. For example it is possible for a reduction in water quality to damage an SSSI, even though the water continues to meet its criteria for Class IA. While undertaking the 1985 River Quality Survey it also became apparent that there were weaknesses in the current classification systems, and that different water authorities interpreted the classifications differently. Most important, it can be argued that the classification system now needs to take greater account of EC standards and also of the range of uses to which stretches of water are put.

5.17 The Government nevertheless recognizes that a satisfactory classification system is the essential link between its goals for the water environment and effective action to advance them. The classifications are now therefore under review by the Government, in conjunction with the water authorities, and this work will in due course be carried forward by the National Rivers Authority. The review will take account of subsequent changes in policy, developments in technology and the wider importance which classifications will assume when quality objectives and standards are placed on a statutory footing.

5.18 Monitoring Surface water quality monitoring is the basis for determining the classification and assessing the impact of discharges. Here again the Committee recommended that:

"DOE, together with the water authorities and the research institutions, should review the whole complex field of monitoring, its present adequacy and potential uses.

5.19 The Government recognises that there are differences in monitoring philosophies between different water authorities. While in part these result from geographical differences between authorities, there are also differences in priorities. The consistent operation and future development of monitoring will be a major concern of the National Rivers Authority. Meanwhile HMIP are undertaking an audit of water authorities' monitoring of sewage effluent discharges and are preparing a research programme designed to develop a scheme for selecting the most appropriate monitoring programme for a particular sewage discharge. Meanwhile the Department of the Environment is examining monitoring requirements for surface waters generally, and the Marine Pollution Monitoring Management Group is also currently reviewing the monitoring of estuaries and coastal waters.

5.20 Within the general field of monitoring the Committee was particularly concerned with biological testing and concluded that:

33 more could be done than at present to monitor effects as well as pollutants - both through biological tests on effluents and by biological monitoring of rivers and estuaries.

5.21 It is generally recognised that biological monitoring has an important and growing role. However, biological monitoring cannot so readily offer generalized numerical approaches as does chemical monitoring, and it tends to be more complex and site specific.

5.22 Biological and chemical monitoring are essentially complementary. Unlike chemical monitoring, biological monitoring integrates water quality both over time and over a number of different pollutants. The biota found at a particular site may be affected by the presence of any one of many pollutants in the water up to several months prior to the date of sampling. It is particularly suited for assessing whether there has been any change in the quality of rivers in Classes I or II and to determining the location of unknown polluting discharges, though not necessarily the nature of the pollutant.

5.23 In practice all the water authorities themselves already now undertake some routine biological monitoring. The Natural Environment Research Council has been funding the development by the Freshwater Biological Association (FBA) of a new system of using the invertebrate communities of rivers to assess water quality. The system has recently been tested by water authorities and FBA are now evaluating the authorities' findings.

5.24 Information Monitoring by the water authorities generates a very large volume of data critical to the regulatory work of the pollution control authorities, important to the Government in developing policy and of interest to the public at large. The Committee made four recommendations relevant to its form and availability.

5.25 12 (iii) We recommend that the DOE should consider further the possibility of establishing a national water quality archive or an effective networking system for obtaining and comparing regionally held data.

Each water authority holds data on water quality for its own area. Since August 1985 the data have been available to members of the public through the COPA registers. The Department receives data for a subset of sampling points throughout England and Wales, by way of the Harmonised Monitoring Scheme, and holds the data on the Departmental computer.

5.26 The Government notes the Committee's recommendation, the views put forward in evidence by NERC and the relevance of the Economic and Social Research Council's Rural Areas Databank. The Department is currently reviewing information requirements following the establishment of HMIP and in the light of the proposal to establish a National Rivers Authority. It is likely that the NRA will regard a "national water quality archive or an effective networking system for obtaining and comparing regionally held data" as an essential aspect of its work.

5.27 The Committee also addressed the question of public access to such data and recommended:

12(ii) that the DOE should consider further access by the public to the registers maintained under COPA by water authorities, and the range and presentation of information in them.

The arrangements introduced by the Government in 1985 ensure free and unimpeded access to effectively all information concerning inputs to the aquatic environment, the consents to which they are subject, and compliance with those consents. They compare very favourably with those operated in other countries and are often recommended as a model.

5.28 In practice, because the registers have been consulted infrequently, some doubt has been cast upon their value. However the Government considers, as a point of principle, that public access should be maintained and is concerned to consolidate that recent progress in this direction. Moreover the Government accepts that ease of access to the information, and its range and presentation, should be subject to regular review. It is in particular a matter for consideration whether the best balance is being struck between the need to include as much detail as possible and to have it in reasonably simple and aggregate form which is accessible and comprehensible to those members of the public who wish to make use of the information. As water authority computer systems develop it may also prove possible to access all the data at a larger number of locations.

5.29 On privatisation responsibility for maintaining the registers will be assumed by the National Rivers Authority. An early task for that authority will be to review the procedures at present adopted by the various water authorities, to identify best practice, and to consider any improvements which may be possible in the light of recent consultations and the recommendations of the Committee. Existing provisions for the protection of commercially confidential information will however be maintained.

5.30 As the Committee observe public registers do not at present cover discharges to sewer. They recommended that:

31 public registers should include details of consented discharges to sewers, as well as discharges made direct to the water course.

The principles underlying the public register system are that they should concern impacts on the environment and that they should cover transactions of public regulatory bodies. So far as the first point is concerned it is recognised that in certain circumstances discharges to sewer may reach the environment other than through consented discharges to water courses (eg by application of sludge to land). It appears to the Government however that the key consideration is that inclusion in a public register should only apply where the discharge is considered to merit the regulatory control of a public body. The implication of this is that most discharges to sewer would not be appropriate material for public registers once sewerage authorities are within the private sector. However, the Government agrees that in the future the registers should include details of any discharges to sewer which require public authorization by the NRA or HMIP, either under European Community legislation, or the new control mechanisms envisaged for dangerous substances. Appropriate provisions will be included in the forthcoming Water Bill or on other grounds.

5.31 The Government is also considering the need to give the NRA and HMIP a reserve power to require information from the privatised utilities as to discharges to sewer, whether or not publicly authorized, where this is relevant to assessment and regulation of a subsequent discharge to the environment.

5.32 Public registers do not include details of pollution incidents, nor are comprehensive statistics published. The Committee's remaining recommendation in this area is that:

"15. DOE, together with the Water Authorities Association should publish comprehensive national annual statistics on the number of reported pollution incidents and associated prosecutions with a breakdown by key sources of pollution."

Some water authorities already publish details of reported pollution incidents and associated prosecutions. The latest (1987) edition of "Water Facts" published by the Water Authorities Association attempts a more detailed breakdown of reported incidents and prosecutions than hitherto, although not all water authority returns are yet in this form. The intention in future years is to show both reported pollution incidents and prosecutions disaggregated as follows:

- (i) industrial pollution - oil;
- (ii) industrial pollution - chemical;
- (iii) industrial pollution - other;
- (iv) farm pollution;
- (v) water authority sewage treatment works;
- (vi) other sewage treatment works;
- (vii) sewerage;
- (viii) unidentified sources; and
- (ix) other

Similar information has been included in the latest edition of the Department of the Environment's Annual Digest of Environmental Protection and Water Statistics.

Incentives and Enforcement

5.33 The Government considers it of great importance that arrangements for pollution control provide an effective balance between guidance, incentives and enforcement. Members of the public need advice on how their individual actions can contribute to pollution, in ways which may not always be readily apparent; the control system needs to encourage and provide incentives for responsible action; and enforcement action against those practices which are unacceptable must be seen to be effective. Two of the Committee's recommendations bear upon this.

5.34 reconsider whether some form of incentive or distributive charge for industrial effluents discharged to the water course could be successfully introduced in the UK.

This issue was considered by the House of Lords Select Committee on the European Community and the Government subsequently commissioned a study, published in 1985, of systems in operation in certain European countries which aim to vary charges so as to offer incentives to reduce polluting discharges and to redistribute the proceeds as subsidy. The Government reviewed such options in its consultation paper in 1986. However the systems so far adopted elsewhere in Europe have been in operation for only a relatively short period, tend to be complex and uncertain in their effects, and in some cases could not be reconciled with UK taxation policies. In the light of consultation the Government's view remains that at this stage a better course would be to introduce cost recovery charges for the administrative, survey and site specific monitoring costs falling on the NRA and HMIP from their authorisation and control functions. This will have the merit of clarity and ease of operation while still giving dischargers an incentive for improvement: where a discharge is particularly noxious, particularly large, or not effectively controlled, this will be partly reflected in the pollution control authorities' costs which would be passed on to the discharger. It is hoped to introduce legislation to provide for these arrangements on establishment of the NRA. Powers to enable HMIP to make cost recovery charges would be sought subsequently.

The Government does not rule out the possibility of moving to more complex systems in due course in the light of experience. It is therefore commissioning further work to update the 1985 Review of practices elsewhere in Europe.

5.35 Where discharge consents have actually been breached or pollution incidents caused, the Committee felt that an unduly relaxed approach had so far been taken to prosecution. They concluded:

that the water authorities should seek to enforce the law and prosecute more frequently than they have done to date. We request the Magistrates' Association to reconsider their policy as regards fines and costs in cases of this kind having regard to the seriousness and nature of the problem.

Where pollution has occurred prosecution is one of the options which water authorities must consider and they do of course prosecute in cases of serious or recurrent problems. In other situations, however, advice and cooperation may be the better method of improving water quality or reducing the effects of water pollution incidents. In the Government's view, it must remain a matter of judgement for water authorities, and in the future for the NRA, taking account of the particular circumstances of a case, as to which is the most effective course of action for them to take. The Government proposes however that the legislation establishing the NRA should clearly vest in that body a general duty for the enforcement of the relevant provisions of the Control of Pollution Act. It follows that the normal presumption should be that prosecution should follow a breach of law, so long as evidence justifies it, and unless special extenuating factors make this inappropriate or unnecessary.



Silo

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From the Private Secretary

1 June 1988

Dear Roger

The Prime Minister has seen your Secretary of State's letter to the Minister for Agriculture dated 23 May covering the Third Report of the Environment Committee: Pollution of Rivers and Estuaries. She is content with this, subject to the deletion of the last sentence of para 1.10 which might simply say that "the Government will keep the health aspects of nitrates in water under review."

I am copying this letter to the Private Secretaries to members of E(A) and Sir Robin Butler.

Z

Andy

(P. A. BEARPARK)

Roger Bright, Esq.,
Department of the Environment.