NATIONAL RIVERS AUTHORITY

AN EVALUATION OF DISCHARGE AND CONSENT COMPLIANCE POLICY A BLUEPRINT FOR THE FUTURE

LETTERS FROM RESPONDENTS

BINNIE & PARTNERS
CONSULTING ENGINEERS

Grosvenor House
69 London Road
Redhill
Surrey RH1 1LQ

March 1991

Environment Agency
Information Centre
Head Office
Class No NRA water Q.
Accession No Aux P.

ENVIRONMENT AGENCY
099533

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Association of County Councils

Speaking for Counties

Our Ref: 3A/M/erp/ENV 11/ /8

Your Ref:

Date: 25 October 1990

This matter is being dealt with by: Alison Miller

Secretary: ROBIN WENDT DL.
Deputy: LEN ROBERTS

EATON HOUSE · 66a EATON SQUARE
LONDON SW1W 9BH

Telephone: 071-235 1200
Fax only: 071-235 8458

2429

Dr R J Pentreath
Chief Scientist
National Rivers Authority
Rivers House
Albert Embankment
LONDON
SE1 7TL

Dear Dr Pentreath

DISCHARGE CONSENT AND COMPLIANCE POLICY

Thank you for your letter of 26 July giving the Association of County Councils the opportunity to comment on your report.

The ACC welcomes the report and the general spirit if its recommendations relating to more effective discharge controls and reducing pollution. It wishes to see the NRA operate as an effective environmental control agency. The implications of the report, that discharges do not, in many cases, comply with the requirements of their consent, are disturbing; any attempt to clarify the system and improve its enforcement is to be commended.

Comments on the specific recommendations of the report are as follows:

Recommendation 1

The commitment to the publication of information on consents and compliance is welcomed; local communities should be aware of the discharges to water in their area and the level of control which is being imposed.

Recommendation 3

Clarification of controls in respect of pollutants not covered by numeric consents, eg ammonia, is welcomed to cover temporary but environmentally damaging discharges.

/...

Dr R J Pentreath
25 October 1990

Recommendation 4

Use of prohibition notices should be reviewed according to vulnerable areas in each catchment, eg proximity of septic tanks to freshwater lakes or grazing marsh dykes of conservation value. In the area covered by the Broads Authority, where water quality is of paramount importance, the NRA is currently reactive in its approach to such pollution incidents and identification of potential problems would enable a more preventative approach in the future.

Recommendation 6

A tightening up on maintenance of pollution control facilities is welcomed.

Recommendation 8

The introduction of absolute limits for numeric consents to enable more precise and objective control of discharges is welcomed.

Recommendation 9

We recognised that the use of percentile limits in addition to absolute limits is complementary, especially where consideration of chronic or cumulative effects is important. However, this document does not define "environmentally significant discharges" to which this recommendation refers. The text mentions "vulnerability" and "carrying capacity" of the receiving waters. It is suggested that, in addition to these criteria, the desirability of water quality improvement or restoration should be a criterion.

Recommendation 10

The introduction of limits on loads is welcomed. This has relevance to areas of water which are relatively isolated from the river system and have long residence times.

Recommendation 11

Numeric consents on flow will help to make controls more meaningful in ecological terms.

Recommendation 13

The bringing of unconsented but environmentally damaging discharges into the consent system is welcomed.

/...

Recommendation 14

Consistency of application of consent limits for ammonia is welcomed. However, given the known widespread and damaging effects of excessive ammonia discharged, it is suggested that such numeric consent levels for ammonia should be set for all environmentally sensitive situations. A recent campaign to control ammonia discharges from pig units along the River Waveney by the Anglian Water Authority and MAFF, has resulted in significant environmental benefits.

Recommendation 15

We have some concern about the replacement of determinands BOD and suspended solids with TOC and turbidity, solely on the basis of ease of measurement. The parallel assessment of these factors over 4 years to evaluate the suitability of these changes is therefore welcomed.

Recommendation 16

The uses of toxicity tests is believed to be complementary to other monitoring checks.

Recommendations 17-20

These recommendations are laudable, but obviously depend on adequate staffing and resources which currently limit these activities within the NRA.

Recommendation 22

The provision for reduction of time periods for assessment of compliance of discharges to sensitive waters from 12 months to 6 or 3 months is welcomed.

Recommendation 23

This clarification of procedure is welcomed.

Recommendation 24

The provision of continuous recorders is a vital tool to assessment of compliance. The need for these should be assessed by the NRA per catchment and a timetable for their introduction prepared, rather than providing them as and when rersources allow. Alternatively, as suggested, there should be a conditions of a discharge consent for environmentally sensitive discharges, although this self-monitoring has obvious disadvantages.

/...

Dr R J Pentreath
25 October 1990

Recommendation 25

The retention of the NRA use of tripartite checks is essential in view of the likely increase in self-monitoring by dischargers. Recommendation 26 is also essential to ensure accuracy of monitoring procedures.

Recommendation 27-32

These recommendations will help to make dischargers more aware of their obligations. Action warnings are likely to precipitate some remedial works. This was a technique successfully used by Anglian Water concerning piggeries along the River Waveney.

Recommendation 33

The implementation of recommendations catchment by catchment makes good sense for practical reasons and will enable work to go on alongside an educational programme. The list of priority areas (Paragraph 143) should include those areas where a significant improvement in water quality objectives is deemed appropriate for environmental reasons. A clear timetable for implementation would be welcomed.

We appreciate that this report does not cover the methodology by which new absolute consent limits will be set. Obviously, the success of the suggested changes to the compliance system rests on this review process. We therefore hope that the follow-up report will be distributed widely for consultation.

The Association will not be publishing this response but has no objection to the NRA making it publicly available.

Yours sincerely

Alison Miller

Environmental Health Services
Basildon District Council
The Basildon Centre
Pogel Mead
Basildon, Essex SS14 1DL

Caring and Winning Through
BASILDON

Richard Albon MIEH
Chief Environmental Health Officer

Basildon (0268) 533333

Direct Line _____

Please ask for Richard Albon Ext. 4271 Your Ref: My Ref: RFA/RFM/LP
Chief Environmental Health Officer

30 OCT 1990
2465
29 OCT 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

Dear Sir

We are in receipt of the N.R.A. report "Discharge Consent and Compliance Policy: A Blue-print for the future" and appreciate the opportunity to comment thereon.

The tone of the report is very positive and it's recommendations are most welcomed, particularly the view to set national standards.

We would wish to see a recommendation that water quality agencies, such as yourselves, the water undertaker and the local authority confer on a regular basis at local level so as to have a co-ordinated approach in an aim to sustain the natural health and ecology of water in the open environment.

There are certain points on which we seek clarification, these are as follows:-

1. With the transition to T.O.C. and Turbidity, how will a comparison be made with previous records made in B.O.D. and Suspended Solids?

2. Would you elucidate "Recommendation 9".

3. What effect will this change-over have on the ecology of rivers?

We note that local authority planners and regional N.R.A. Officers are to liaise with regard to new installations of septic tanks. A major concern of Environmental Health Services is illegal discharges of existing septic tanks and cesspools into ditches. Can you say if any consideration has been given to seek out and control this source of discharge.

Yours faithfully

Chief Environmental Health Officer

15 OCT 1990
2287

The Brewers' Society

42 PORTMAN SQUARE · LONDON W1H 0BB

TELEPHONE · 01-486 4831 (16 LINES)
FAX · 01-935 3991 · TELEX · 261946

SS/kiaw/T.18-2 11 October 1990

Dr R.J. Pentreath
Chief Scientist
N.R.A.
30-34 Albert Embankment
London. SE1 7TL

Dear Dr Pentreath,

Discharge Consent and Compliance Policy :
A Blue Print for the Future

Your consultation letter of 26th July 1990 and the enclosed report refer. The Brewers' Society appreciates being given the opportunity to comment on the report as it represents an industry which requires large quantities of consistently high quality water to produce its product and its members are conscious of the responsibilities that effluent discharges have protecting the aquatic environment. However, it is salient to note that nearly all of our members discharge to sewer and therefore will be concerned, for effluent discharge purposes, with the effects NRA policy has on Water Service PLC's.

The overall themes of the report appear to be those of establishing consistency and increasing the discharges involvement in compliance with consents which are regarded as sensible.

Listed below are our comments on the individual recommendations - where no comment is given we simply accept the necessity of the recommendation.

Recommendation 1 - The need to supply comprehensible and useful information is understood but who will meet the costs of analysing data.

Recommendation 2 - Very useful.

Recommendation 3 - It might be useful to indicate the type of substances e.g. Redlist substances, as an appendix to the consent.

Recommendation 6 - Maintaining records would be very time consuming and we query why such an obligation should "widely" be a standard condition - this implies inconsistency.

Recommendation 8 - We understand this will formally bring discharges from sewerage works in line with the rest of industry.

Recommendation 9 - The reasoning behind this recommendation is appreciated but the increased complexity will be onerous for the discharger trying to comply.

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11 October 1990

Recommendation 10 - This may require on-site storage and mixing of effluent prior to discharge which will obviously be expensive and if accepted will need phased introduction. The action the NRA propose to take if notified that a stated proportion of the total mass has discharged needs to be agreed - will the discharger have to shut down operations temporarily?

Recommendation 11 - This will require investment in telemetric equipment and storage facilities. Who will meet the expense?

Recommendation 12 - It is assumed this is principally intended to deal with "overflows" from sewage works and farm slurry pits following heavy rainfall.

Recommendation 13 - The need for all discharges to have an authorised consent is accepted. The minority who have benefitted from not having a consent will have to join the majority.

Recommendation 15 - We support the proposal to properly assess the new parameters prior to introduction.

Recommendation 16 - This could be expensive but is a sensible approach to protecting the environment. "Environmentally significant discharges" needs clarification.

Recommendation 18 - We consider regular liaison between dischargers and NRA to be very sensible and important.

Recommendation 21 - Agreed in principal but the specified time periods will need careful consideration.

Recommendation 23 - Written guidance from the NRA will be useful.

Recommendations 24 & 26 - Continuous monitoring will be expensive. Who will pay?

Recommendation 28 - Guidance on interpretation of exceeding from the NRA will be very important.

Recommendation 29 - We support the concept of referring to a dischargers record of care.

Recommendation 32 - Agreed in principle, further details are required.

Recommendation 33 - We are unable to comment on the relevance of this.

Our comments have recently been submitted to the CBI but we do not intend to publish our response or make it available to the media. We would have no objection to the NRA making our response publicly available and trust it will be of some use in drawing up the new consent and compliance policy.

Yours sincerely,

Sue Scarrott.

S. SCARROTT (MRS)
ASSISTANT TECHNICAL SECRETARY

29 OCT 1990
24444

BACMI British Aggregate Construction Materials Industries

156 Buckingham Palace Road, London SW1W 9TR
Telephone 071-730 8194 Fax 071-730 4355

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

26 October 1990

Dear Sir

N.R.A - DISCHARGE CONSENT &
COMPLIANCE POLICY

Thankyou for your letter of 26 July consulting BACMI on your paper - "Discharge & Compliance Policy - A Blueprint for the Future".

I have circulated this widely amongst our membership and have been asked to pass on the following comments:-

BACMI is the trade federation for the aggregate, bituminous coated materials, surfacing and ready mixed concrete industries. Our members produce 73% of crushed rock quarried for aggregates in GB and 57% of Sand & Gravel.

Our members also operate ready mixed concrete batching plants, bituminous coating plants, aggregate rail depots and marine wharves. They are thus deeply concerned with any changes in discharge consent and compliance policies which could have a serious impact on their operating methods and financing.

BACMI welcomes the broad thrust of the paper, many of its recommendations and the concept of a uniform approach to the assessment of discharges and their pollution effect. We wish to stress the crucial importance of proper staffing levels being provided for to allow these intentions to be achievable. When staff resources are limited BACMI members report that there is often a tendency to concentrate pollution enforcement on the larger companies because of their financial resources despite the fact that it is often the smaller, under-financed operations which cause greater pollution. BACMI members firmly believe that priorities for enforcement should be based on amounts and seriousness of pollution and not the polluters ability to pay. We cannot stress this point too highly.

Recommendation 1

This is generally supported provided it does not distract from the main objective of a fair reasonable and uniformly applied control system. Publication of estimates of degree of compliance could, however, be misleading and unsatisfactory unless they relate strictly to known data. It should be made clear that such summaries are intended to be generalised and not specific to each discharger otherwise the data could relate only to those regularly sampled not, we believe, the intention of the proposals.

Recommendation 2

We would make a plea for the forms to be kept as simple and short as possible and of course, standardised nationally.

Recommendation 3

While we can see the reasoning behind this in the current political climate and don't disagree with it in principle, there could be some problems in applying this which should be taken into account in working out further details of legislative control.

For instance it should be easy enough to identify all the constituents likely to enter the discharge water from the trade process. However the water used could well contain naturally occurring constituents which would pass through the process and form part of the discharge. It would seem that these would have to be identified with the N.R.A. at the time of application, otherwise this sweeping recommendation could be used against the operator.

There could be 2 widely different cases:-

i) An extraction say from a river and discharge to the same river at a point close by. The same water "base" is being discharged as that which is extracted. It would be unreasonable to be prosecuted for discharging an unaltered natural constituent.

ii) An extraction from one source to another receiving water might in some circumstances introduce a "foreign" constituent to the second of these not arising from the process itself. It would be important for this to be identified.

Recommendation 4

Bearing in mind that the principle of a septic tank is to provide the means whereby final overflow is pollution free, we see no reason for the NRA's consent in addition to normal building regulation consent issued by the District Council. The latter should have proper regard to the effectiveness of the system and clear guidance should be laid down.

Defining Limits

BACMI members feel N.R.A. must make clear in each case its objectives as to standards expected for receiving waters and as to those standards to be set for achieving these. It would be important to avoid a generalized application of limits.

In addition, it will be necessary for there to be a firm statement of sampling frequencies required for the statutory controls.

Recommendation 8

Absolute limits should allow for a worst event. It may not be serious to exceed normal limits of turbidity or suspended solids of naturally occuring material by a considerable margin for a short period of time. The tolerance to other pollutants such as ammonia on the other hand is far less flexible. Discharge conditions should reflect these distinctions so as not to require unreasonable costs to meet unnecessarily high standards.

Recommendation 10

The imposition of limits on the loading should again recognise the nature of the constituent and the ability to redress the balance of any build up in the receiving waters. Limits need to take account of the receiving water be it marine, river, lake, sewerage etc.

Recommendation 12

This would seem potentially to be a complex matter and must be capable of practical application at reasonable cost.

Recommendation 13

This comes back to the problem of naturally occurring substances. These might be contained in incoming water or from the ground and should be clearly distinguished from substances released in a trade process.

We also note that this is aiming to strengthen control over "Special Situations" including run-off from mineral workings. We are not aware of any serious problem from this and would be very concerned if the prescribed solution was to require large areas of concrete etc to collect and control surface run-off - a potentially very costly solution often where no real problem actually exists.

Recommendation 15

We are unsure about the comparative appropriateness of BOD or TOC as a unit of measurement, but if the overall effect is marginal there is clearly an advantage in using a unit which can be measured more cheaply, quickly and reliably.

Turning to suspended solids we would point out in response to paragraph 81 of the report that silt naturally forms in streams and that any "blanket of material" formed as a consequence of sand and gravel extraction is likely to be similar in composition to natural bed sediments. Further periodic removal of any build up should redress the situation. Rivers themeselves can vary considerably in turbidity in a natural way depending on rainfall.

Recommendation 17

Whilst one can see the reason for this, the visit should not be so unpredictable that Mines and Quarries safety is prejudiced. Where there is a requirement to come on to a Company's land then the officer must report to the Mines and Quarries Manager first, unless a prior specific arrangement has been made with him for agreed access to a monitoring point. For this reason, out of hours visits should be strongly discouraged.

Recommendation 18

We wonder why N.R.A. should not notify the discharger of results as an when they occur. Surely it is more certain than hoping to get the information from "regular meetings" which it may seem to N.R.A. to be unneccessary to hold if everything is O.K. It could be important to a discharger to know about the satisfactory as well as the unsatisfactory discharges.

Recommendation 19 & 20

We applaud these recommendations. Further we believe it should be possible for the discharger to request further sampling at his own cost, where this would be helpful.

Recommendation 24

We would be interested to learn now 'reasonableness' referred to in line 4 will be determined. In BACMI's view it should not be judged against the polluters ability to pay but solely against the seriousness of the pollution threat.

Recommendation 25

Paragraphs 110 - 112 do not appear to recognise that many dischargers, such as those in our industry have neither the facilities nor the expertise to carry out the monitoring tests. Such testing is normally via the local public analyst, water authority laboratory or independent test house. If sampling can also be delegated to such independent bodies on an acceptable random basis, then recommendation 25 is not really justified.

Recommendation 27

Perhaps it is the grammar, but we are not clear as to which party is meant by the "they" in the 2nd line - is it the N.R.A. or the discharger? if it is the discharger's monitoring this should not be required to be put on the register.

Recommendation 29

This seems sensible and to be welcomed. We do make a plea, however for a uniformity of treatment across the country and between companies.

Recommendation 30

BACMI members are unhappy at the suggestion that there should be a designated person to take a direct interest in discharges. There are obvious advantages in having a contact point, but it seems to us that formal actions by N.R.A. or prospects of such (eg formal action warnings) should be communicated to the proper channels in the company e.g the Company Secretary. It is important that the Company as such should have sufficient control over the matter at this stage rather than at a local level.

Recommendation 32

BACMI members do not feel the Warnings should appear on the register. After all these would be "shots across the bows" by N.R.A. which in its view would be necessary but not at this stage tested by formal action in the Court.

Recommendation 33

This is welcome and should be a first priority.

In addition we have the following comments related to the general policy thrust of the paper rather than to individual paragraphs-

We support the proposals for self monitoring provided there can be simple and would welcome a unified system of record keeping.

We believe the consent conditions in respect of percentile levels need to be discussed further with our industry before imposition, as do the compliance levels proposed and minimum and maximum flow rates of discharges. The methodology of assessing certain types of samples needs to be clearly established. It is absolutely essential that these policies are compatible with other EC prescribed standards.

Thankyou for consulting BACMI on there issues. We have no objection to this response being published and may do so ourselves.

Please could you ensure that we are fully consulted on this and other NRA policies affecting our industries as they are developed.

Yours sincerely

D T Pollock

D T Pollock
Planning Officer

cc: Land & Mineral Planning Committee
Aggregates Product Committee
Ready Mixed Concrete Product Committee
ACMA Product Committee

British Coal Corporation
Ashby Road, Stanhope Bretby,
Burton-on-Trent, Staffs. DE15 0QD
Telephone: Burton 0283 550500
Telegrams: Coalboard Burton
Telex: 341741 CBTD G
FAX: 0283 550363

File K
& response

24 SEP 1990

2156

British COAL

Headquarters Technical Department

Dr R J Pentreath
National Rivers Authority
Rivers House
30-34 Albert Embankment
London
SE1 7TL

Our ref: DML/LON

Your ref: -

17 September 1990

Dear Dr Pentreath

Discharge Consent and Compliance Policy
Consultation Document

Thank you for the opportunity to comment on your proposals as contained in the aforementioned document. You may be aware that comments were submitted on behalf of the Corporation following your consultation meeting in London in February on the recommendations which now form the basis of your proposed policy. However, whilst we fully support your objective of achieving a consent system which is both effective and commands public respect, we continue to have reservations on some of the proposals which you make. The major points upon which we wish to comment are as follows:-

Recommendation 6

The Corporation accept that there should be an obligation to maintain pollution prevention facilities included as a part of a discharge consent condition. Indeed, it is in the dischargers own interests to maintain facilities to ensure that a satisfactory level of compliance is achieved. However, we consider that the operator of such facilities and not the NRA, is best able to judge the varying intervals when maintenance is necessary.

Recommendation 8

We note that 'evenhandedness' for all discharges is to be achieved by the elimination of the well argued D.O.E. 'look-up table' concept which applied to Water Industry discharges. We support your contention that the absolute limit for discharges having a large random component of variation should be 'so much higher than the usual quality levels'. We are concerned to ensure that absolute limits are not merely translated from the present 95%ile value but that proper recognition is given to the increase necessary because of the change of concept.

Recommendation 9

We recognise the advantages of an 80%ile or 50%ile compliance level as a useful tool in monitoring the general trend of effluent quality. We would, however, question our abilities to achieve meaningful percentile values because of an insufficient data base. Whilst adequate data may be available for major

discharges, such as sewage works which are regularly sampled, British Coal discharges are generally only sampled about 4 times per year by NRA and 12 times per year by in-house staff. In the changing conditions of many mining sites, insufficient data will, therefore, be produced to be representative of operations to derive a meaningful percentile limit. It is our view that the use of the percentile concept should, therefore, be limited to major discharges, such as sewage works, which are regularly sampled because of their potential impact on water quality and not to less significant discharges, particularly those which are variable in quality and flow.

Recommendation 11

We support this recommendation, subject to the proviso which you make in recommendation 12, that it is not realistic to impose limits on instantaneous effluent flow for discharges which are significantly influenced by rainfall.

Recommendation 12

We agree that numeric limits cannot reasonably be set for discharges which are significantly influenced by rainfall and are, therefore, beyond the dischargers control. In addition to storm flows from sewerage systems, to which you refer, the problems of adherence to consent limits under extreme rainfall conditions are equally acute where surface water forms a significant proportion of the discharge.

British Coal has had great difficulty in recent years in obtaining recognition in discharge consent conditions that it is not possible, nor necessary, to clarify run-off from extreme storms to the strict standards which apply in dry weather flow conditions. In our view, certain conditions offered left little recourse other than appeal to the Secretary of State on the grounds of unreasonableness. This lack of recognition of reality in consent conditions has led to certain proposed improvements to pollution prevention facilities not been carried out. We seek your recognition that the principles of this recommendation apply equally to all classes of discharge which are significantly influenced by rainfall.

Recommendation 15

The Corporation recognise the advantages to NRA of replacement of B.O.D. and Suspended Soplids tests by T.O.C. and Turbidity. It is also agreed that relationships are likely to be found between the original and replacement parameters particularly in sanitary effluents. This relationship is, however, unlikely to be found in discharges from the mining industry. It was agreed some time ago in discussions between the Corporation and the Water Authorities Association that the T.O.C. test was inappropriate to mining effluents because of the influence of salinity and coal particles. The introduction of turbidity to replace suspended solids will result in the measurement of an entirely different influence on water quality in place of the parameter which is well understood and accepted as a successful control on the quality of a discharge. We are concerned that in wishing to automate water quality analysis that entirely inappropriate parameters are being substituted and express our grave reservations concerning their use on mining effluents.

Recommendation 17

Whilst at many of its sites British Coal can provide access for sampling at any time of day or night, this cannot be readily achieved at many unmanned pumping stations and remote discharges. The Corporation are concerned regarding the safety of visitors to our sites and prefer to arrange manpower to provide access through security arrangements and to accompany NRA officers who may not be familiar with the site to ensure that samples can be safely obtained. Notwithstanding your powers to enter onto land and responsibilities under Health and Safety Legislation, it must be recognised that some delay in obtaining access is inevitable during unsocial hours.

Recommendation 23

It should be recognised that unduly short rolling time periods could introduce seasonal influences into results for some types of discharge.

Recommendation 24

Whilst we can accept the introduction of continuous monitoring as necessary under certain circumstances to allow NRA and a discharger to maintain a high degree of supervision of effluent flow rate and quality, we have the following reservations:-

i) Continuous monitoring should only be introduced on major discharges with a potential to significantly influence river quality.

ii) Continuous monitoring may work well behind factory security fences but difficulties are inevitable on remote locations and on spoil tipping sites where vandalism is a major problem.

iii) Equipment to effectively monitor other than water industry effluents is not necessarily available.

Recommendation 27

Continuous monitors can produce high volumes of data it is difficult to see how NRA could decide what part of the data would be included in the public register and that which would not be avilable for public inspection. We forsee a temptation to include all data on the register and allow its use as evidence in any prosecution.

Continuous or regular monitoring of a discharge as a condition of consent incurrs expense on behalf of the discharger and savings in costs of NRA supervision. We consider that a reduction in the charges levied by NRA is reasonable where the discharger is paying much of the costs of effluent analysis and we seek the return of this principle which was included in your previous proposals.

We hope you will find our comments helpful in your further deliberations and that you will be able to accommodate the points we have made. Should you wish to discuss our comments further we would be pleased to meet you either at your offices or our Hobart House office in London.

We do not propose to publish our comments but have no objection to you making our response publicly available.

Yours sincerely,

DMLaine

D M Laine
Chairman, Water Group.

175,5(221)

British Effluent and Water Association

5 Castle Street
High Wycombe, Bucks. HP13 6RZ
Telephone: High Wycombe (0494) 444544/444603

Director & Secretary
John S. Hills
Fax: (0494) 446185

JSH/GS

24 October 1990

25 OCT 1990

2412

Dr. R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

Dear Dr. Pentreath,

"Discharge Consent and Compliance Policy: A Blueprint for the Future" July 1990

Thank you for your letter dated 26 July enclosing a copy of the above Report.

Our comments are enclosed (Document G.1400/1)

In response to your questions

a) we do not plan any immediate release of the contents to the media, however the Document will be available to our Members and other trade associations with whom we are in close contact.

b) we would not object to the NRA making any part of our response publicly available, but we would ask you to let us know in advance.

We would be pleased to elaborate on any point if you so wish.

Yours sincerely,

John Hills

J S Hills

BEWA

DOCUMENT No. G.1400/1
BRITISH EFFLUENT AND WATER ASSOCIATION
5 Castle Street,
High Wycombe, Bucks. HP13 6RZ
Telephone: (0494) 444544 / 444603
Fax: (0494) 446185

Director and Secretary
JOHN S. HILLS

JSH/LJH

24 October 1990

National Rivers Authority

REPORT

"Discharge Consent and Compliance Policy: A Blueprint for the Future" July 1990

We are grateful for the opportunity to comment on the above Report.

BEWA is the national association for British process contractors, manufacturers and suppliers of water and effluent treatment plant, equipment and associated chemicals.

The numbering of our comments coincides with the paragraph numbers in the Report. We have used the initial 'R' to represent the word "Recommendation".

General

We congratulate those involved in creating the wording of the Report. We found it informative and a joy to read.

Overall, the cost of implementing all the recommendations in the report would be very significant. This could cause a massive increase in the scale of charges for Consents which could become unacceptable to many dischargers.

The proposed requirement for maintenance records and designated responsible persons for all consents is welcomed.

R1 We support the annual publication of data. It would be most helpful if summary data could be included in Waterfacts (published through the WSA) or as a joint NRA/WSA publication.

R2 ii) It would be helpful if the reminder could be repeated on any annual invoice for charges.

R3 The implications of the addition of a standard rubric to consents will need detailed discussion with the CBI, (for industrial dischargers in general), and BEWA, (relative to possible additional process plant requirements and/or liabilities).

Most dischargers are unlikely to have the necessary expertise or resources to assess the environmental impact of their effluent. Will the Courts uphold a prosecution by the NRA for a pollution incident caused by a breach of Consent for an undefined substance at an unspecified concentration unless of a gross or obvious nature?

R4 We support the need for a leaflet on the consent requirements for septic tanks.

.../..

R5 When a Consent imposes specific facilities and processes on the discharger, it is assumed that the NRA will take responsibility for any faulty design or configuration.

R6 We support the proposal and would be pleased to discuss in more detail the maintenance obligations to be written into consent conditions.

R10 Whilst agreeing with the principle of this recommendation, we think it would be extremely costly to police effectively on a large scale. Intensive flow and load monitoring would be required in many cases.

67 We suspect that mass balance modelling would be required on the majority of the Numeric Consents requiring huge manpower and materials resources.

R12 BEWA would be pleased to act as a focal point for any discussions that the NRA may require regarding the latest techniques for removal of solids from storm water overflows.

Modelling of storm water flows has significant resource implications. Who pays - the Water Companies as final dischargers or the Local Authorities/Councils who are responsible for the sewer catchment areas?

80 The BOD test has the merit that it can be carried out on sites where a reasonable sized effluent treatment plant exists or at a factory. TOC as an alternative, is unlikely to be discharger-friendly. Industrial discharges would no doubt find it helpful if the NRA published a table comparing BOD & TOC figures for treated effluent from various industrial processes, with a comparison for sewage.

82 We are a little surprised to read that suspended solids concentration is not amenable to continuous monitoring.

Whilst turbidity and suspended solids may show a correlation in certain effluents, their environmental effects are often very different.

83 We agree that a parallel period of BOD: TOC and Suspended Solids: Turbidity result comparisons would be important. We assume that the NRA would consult widely before imposing a change which, in any event needs to be discharger-friendly.

97 We would be pleased to receive a copy of the report which is to be published by the NRA's Sampling Group.

109. We welcome the comments on continuous monitoring.

R30 Although in theory it may be up to the discharger to notify the NRA of a change in the designated person for a particular discharge, in practice this may not be done at a significant proportion of sites. Regular checking by the NRA may be necessary.

J S Hills

BRITISH LEATHER CONFEDERATION

Registered Office:
LEATHER TRADE HOUSE
KINGS PARK ROAD · MOULTON PARK
NORTHAMPTON NN3 1JD

Telephone 0604 494131/4 Telex 317124 CORIUM G FAX 0604 648220

01 NOV 1990
2506

Our Ref: D/RLS/AR

31 October 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON SE1 7TL

Dear Dr Pentreath

"Discharge Consent and Compliance Policy :
A Blueprint for the Future"

I have pleasure in forwarding a response from the British Leather Confederation to your letter dated 26 July.

Whilst the majority of companies in this sector have, as a matter of policy, discharged to the sewage treatment works, and indeed by many of the former Water Authorities were encouraged to do this, a few companies do discharge directly to surface waters.

For that reason, we have not commented in detail on the whole document, but restricted our observations to what we feel are the concerns of small companies located in non-urban areas where virtually their only option has been to discharge directly to a surface water after appropriate treatment. I might say in passing that, so far as we are aware, these companies have never caused serious problems, and indeed one of them received a gold medal from the Anglers Association some years ago in recognition of its action to reduce pollution.

Yours sincerely

R L Sykes (Dr)
Director

Enc: BLC's Comments.

Director: R.L. SYKES OBE PhD. CChem FRSC FSLTC
Secretary: H. GASKELL FCIS
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Comments by the British Leather Confederation on NRA's Document "Discharge Consent and Compliance Policy : A Blueprint for the Future"

These are referred to by either paragraph or recommendation number as appropriate.

Para 56 - Percentile Limits

We would suggest that different criteria apply to large and small discharges. Whilst for large STW the shape of the distribution curves may be fairly standard, we doubt that these can necessarily be applied to small industrial discharges from industries involved in batch processing, particularly where there has to be compliance with a number of parameters.

We would ask that considerable thought is given to this problem and that NRA does not seek to institute "technical" prosecutions for non-compliance where there has been no environmental damage.

By definition, a small discharger will have less impact than a larger discharger of a comparable effluent, small discharges are usually associated with SME's, which government is keen to encourage, and for those reasons we would ask that a simplified more tolerant system is applied to small dischargers.

We would suggest that an appropriate definition of small discharges might be:-

either a) not more than 500 m^3/day

or b) not exceeding 1% of average DWF in the receiving water.

Para 62

We would support the view that total loads by mass may be a desirable parameter to control. For many years industry has been exhorted to reduce water consumption - success in this can and has lead to situations where mass/volume limits in a consent have been exceeded, even though the total mass discharge may have been reduced. We would recommend that if there is evidence of long-term compliance with mass limits, occasional excursions outside the limits should be acceptable.

Paras 64/65/124

We would ask that interpretation of these concepts does not put U.K. industry at a disadvantage vis-a-vis our competitors in Europe and elsewhere. The recent DoE publication on the environment states that, whilst 95% of U.K. rivers are classed as clean, only 75% of EC rivers come into that category. In real life occasional infringements will happen and the U.K. concept of consents being a maximum rather than an average or a percentile has meant more rigorous standards here. Whilst appreciating the result has been cleaner rivers, it has meant transfer of industry to countries with a more relaxed attitude to implementation, as distinct from its published standard! If industry disappears, who generates wealth?

Cont./....

Recommendation 15

Whilst accepting that BOD_5 is an arbitrary parameter not suited to continuous monitoring, we are concerned about two aspects of this recommendation.

a) The cost and reliability of automatic equipment for measurement of TOC, Turbidity and ammonia when used to monitor small industrial dischargers whose size may not justify having appropriately qualified staff on site.

b) Correlations established between TOC and BOD_5 ratios for STW's may have little relevance to industrial discharges. This could mean that the change was not neutral but much more lenient or restrictive. We would ask that due consideration is given to this, particularly for small discharges, see above.

British Nuclear Fuels plc

Head Office: Risley Warrington Cheshire WA3 6AS
Telephone: Padgate (0925) 832000 Telex: 627581
Direct Dial (0925) 83

29 OCT 1990
2441

Your ref: Our ref: Ext.

25 October 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON
SE1 7TL

Dear Jan

"DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

Thank you for the opportunity to comment on your report on Discharge Consent and Compliance Policy. I felt that this was a very useful report and was timely in view of the mixed approach to setting discharge consents which has developed over the years. I do however have a number of specific comments and some general observations on the report, which I hope you will take into account in further developing the NRA's policy in this area.

My specific comments are as follows:

Recommendation 1, Page 11: It is important that the collection and presentation of data on consents and compliance should be done in a consistent manner across all NRA regions.

Recommendation 3, Page 12: In practical circumstances it is clear that consents will not specify limits on all species which can be detected at trace quantities in the effluent. Therefore it is important to establish that the presence of a particular potentially damaging determinand in effluent, perhaps at the level of parts per billion but which is not specifically limited by the consent, does not represent a breach of consent conditions. Clearly, if "pollution" in the sense of environmental damage is caused by a constituent not specifically limited by the consent that must represent an offence; equally, the presence of low concentrations of such constituents at levels far below those of environmental significance in effluents must be recognised as admissible provided of course that adequate consideration to these has been given in the consent setting process.

Paragraph 47: Whilst it is true that the load or discharge rate is almost invariably measured by the simultaneous measurement of concentration and volumetric flowrate, it does not logically follow that consent limits have to be framed in terms of separate limits for flowrates and concentrations of substances. In many circumstances it is likely to be more sensible to

frame the consent limit directly in terms of load, recognising that this will require the measurement of both concentration and flow from which the load can be calculated. In some circumstances, effluent concentrations can be increased by desirable process changes, such as the reduction in water usage by the plant, which reduce flow rates and hence do not affect the environmentally significant quantity which is the load. In these circumstances consents set in terms of separate concentration and flow limits can be a positive disincentive to site operators to economise on the use of water.

Paragraph 51, Page 18: Likewise, it does not follow that an absolute limit (defined simply as a limit which it is an offence to exceed at any time) should necessarily be related either to concentration or to instantaneous spot sampling. I understand that the linkage in paragraph 51 relates to the historic sampling procedures adopted by the water authorities, and to the legal background connected with "tripartite" sampling. However I see no reason in principle why absolute limits could not be set in a variety of different ways.

Recommendation 8, Page 19: I welcome this recommendation and the discussion in the preceding paragraphs which points out the difficulties created by the earlier approach in which limits in industrial consents are set in absolute terms, but compliance judged on a 95 percentile basis. Indeed I feel the situation has been more confusing than that, in that there has been a tendency for regulators to look at the discharge performance of site and seek to set the consent limit at the 95 percentile of the observed distribution. This has simply had the effect of placing operators in the position where they are bound to be in breach of statutory limits 5% of the time. I therefore welcome the setting of genuine absolute limits in consents, clearly defined as something separate from the 95 percentile point. However it is also essential that these limits be set in such a way as to both protect the environment and permit the site operator to control activities in such a way as to secure compliance. I will return to this point in my general comments.

Paragraph 58, Page 20: The statistical argument supporting the adoption of the 80 percentile in preference to the 95 percentile should be made available for comment.

Recommendation 9, Page 20: In the absence of the statistical argument referred to above, it is not possible to comment knowledgeably on whether the application of 80 percentile limits, 50 percentile limits, 95 percentile limits or simply a limit on the average concentration of constituents in effluent over a period is the most appropriate method of limitation. In practice I believe that the lack of knowledge of the real shape of the underlying distribution to which individual sampling results belong is likely to limit the validity of the more sophisticated statistical arguments.

Recommendation 10, Page 21: I agree that in many circumstances the best way of controlling the environmental effects of discharges is to place a limit on the permissible load over a period. I would observe that this would satisfy all or most of the points argued as the reason for imposing percentile limits in addition to absolute limits and would avoid the necessity for detailed statistical arguments and for the use of complicated look-up tables in establishing compliance. I would therefore encourage the use of load limitation as the primary method of securing long term control of effluent quality. I would also observe that for discharges where a load limitation is applied it should not be also necessary to apply 50 percentile or 80 percentile limits in addition to an "absolute" limit.

Paragraph 64, Page 21: I note and endorse the conclusion that many current consents are not set in a manner consistent with the meaning of "absolute" limits and that reconsideration of the consent limits in that light will be necessary. I also agree that the setting of absolute limits must take into account the circumstances obtained for each individual discharge, and I will return to this point in my general comments.

Recommendation 11, Page 69: I made the point earlier in relation to paragraph 47 that in most cases the objective of effluent control should be to control the load, or the product of concentration and flowrate. It therefore does not follow that numeric consents must automatically include absolute limits for instantaneous effluent flow; discharge of large quantities of essentially clean water may be no environmental significance whatever.

Recommendation 15, Page 27: I endorse the qualifications which you have made in preceding paragraphs concerning the necessity for gathering data over a long period before new determinands are introduced into consents in place of old determinands for which there is ample information on trends and time variation.

Recommendation 16, Page 27: The category of discharges to which this recommendation applies could perhaps be made clearer.

Paragraph 94, Page 30: The wording of the underlined sentence in which the role of non-tripartite sampling in court proceedings is discussed is unclear. Clarification is needed on the types of samples which would be admissible in evidence in respect of prosecutions connected with breaches of absolute limits, percentile limits, and load limits.

Paragraph 98, Page 31: The use of three or four month rolling periods as a basis for assessing compliance with percentile limits is likely to be problematic if relatively few compliance samples have been taken during this period. The look-up tables showing compliance against various percentile regimes are questionable when only small numbers of samples are involved; it would follow that large numbers of samples over a three month period would be necessary to adequately judge compliance against percentile limits.

Paragraph 101, Page 32: This paragraph appears to contradict earlier statements that tripartite sampling would be needed to bring a prosecution for non-compliance. As noted earlier, clarification is needed as to the status of routine and tripartite samples and their relevance as evidence for prosecution in respect of breaches of the various types of limit.

Recommendation 21, Page 33: The comments above apply.

Recommendation 22, Page 33: My previous comments about the necessity for adequate numbers of samples to judge compliance with percentile limits apply.

Recommendation 23, Page 33: This is an important point especially for discharge consents with a large number of determinands. I fully endorse this recommendation.

Recommendation 28, Page 37: I fully endorse the necessity to have a clear explanation of the meaning and interpretation of percentile limit exceedances.

Recommendation 30, Page 40: The responsibilities of the individual nominated on discharge consent forms should be made absolutely clear. As written, I read the responsibilities as being those essentially of liaison with the NRA concerning the discharges and issues connected with compliance. It is most important that this nomination should not be seen as defining personal liability in criminal law for any breaches of the consent.

As a general observation, the paper does not make it clear what is the status of the various types of limits (absolute limits, percentile limits, load limits) in relation to prosecution for breach of conditions. It is quite clear from the report that breach of an absolute limit will result in automatic prosecution; it is less clear how breaches of percentile or load limits would be treated. Further clarification on this point would be helpful.

My main point however relates to how the limits might be set in relation both to environmental criteria and to the performance of process plants being regulated. There seem to be two broad objectives connected with the setting of limits in consents namely:

a) Protection of the environment noting the need for short term protection (acute toxicity effects) and long term protection (compliance with environmental quality objectives and avoidance of accumulative effects). Environmental parameters would determine what the upper bound of the allowable discharge should be.

b) Encouragement of the site operator to manage his process prudently and efficiently in terms of effluent performance. In this respect allowable discharges will be set by reference to the capabilities of the process and the effluent treatment methods used.

A prime need of the operator is to have a consent containing limits which provide an envelope within which the plant or process can be operated, taking account of the variation which would be expected even in a prudently operated plant. In other words, the operator will need some degree of margin between the limits set in the consent and the value of those same parameters experienced during normal plant operation.

Absolute limits as you define them, that is limits on instantaneous concentration of determinands in effluent, a single breach of which represents a prosecutable offence, relate to a parameter which is likely to be particularly variable during normal process plant operation. In these circumstances a site operator would be looking for a substantial margin between the absolute limit and the normal value of the parameter during process operation. The magnitude of the margin would depend upon the nature of the process, the variability of the parameter under consideration, and a number of other factors. Of course the upper bound for the limit would be set by environmental considerations as indicated above.

For percentile or load limits, similar considerations apply but since those types of limit are more related to the long term performance of the plant there is inevitably a greater degree of operator control involved and the margins required would therefore be smaller than those required in respect of absolute limits. Some margin would, however, still be needed to recognise the variation in performance which could be expected in a prudently run facility and which can arise for a variety of sources including variation in process throughput. Once more, case by case consideration would be needed to establish appropriate values for the limits and again environmental considerations must necessarily define the upper bound of acceptable discharge.

If you were to combine the philosophy I have outlined with the policy set out in your paper I think you would have a good basis for managing effluent discharges and achieving environmental objectives. I would be pleased to discuss the points I have raised with you at length at any time, but I would also make the positive suggestion that in further developing your policy on discharge consents and compliance that you do establish a dialogue with industry, preferably through the CBI.

I do not propose to publish this response or make it available to the media although I will provide copies to anyone who requests it. I have no objection to NRA making any part of it publicly available.

I hope these comments have been helpful to you in the development of your policy.

Yours sincerely

R J BERRY (DR)
Director of Health, Safety
and Environmental Protection

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Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

5 November 1990

Dear Dr Pentreath

"DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

We have studied this document with considerable interest and are grateful for the opportunity to be able to comment. We also valued the opportunity for a discussion of this and other aspects of NRA policy with Peter Chave recently, when he came to talk to our Environment Committee. That was of considerable benefit and we have modified our proposed response after reflection of that discussion.

2 This industry is a large volume discharger and we agree with moves towards better identification of the total impact. In general, we support the main principles of the recommendations as we recognise that NRA must show that a credible system of discharge control exists. Dischargers and the many individual consent agreements that have been in operation over the years all need to be identified and an open arrangement agreed for the future. We also agree with the principle of environmental objectives. Equating emission limits to equal competitiveness is overstating the position, not least as the water environment is not uniform internationally. However, we do agree that water quality should not be prejudiced further by toxic discharge and we support the approach used in the Red List, although practicalities are difficult.

3 We consider that our industry reflects one of the central debates in the Report, that of developing a realistic approach to high volume, minimal toxicity discharges. (We use the word "minimal" since the absence of any substance cannot be guaranteed.) Continuous discharges pose problems for identifying Red List substances at trace levels, but it will be far more difficult to cover others that exist at barely detectable levels. Linking this to the proposal that no substance may be discharged unless consented would make a scheme unacceptable to industry and probably unworkable so far as NRA is concerned. For instance, the debate on dioxin occurred largely because of analytical improvements that picked up a raw material contaminant passing through our processes. Whilst we urged higher quality control on our suppliers, contaminants at almost molecular levels will be a permanent problem, as spot analytical techniques become more sophisticated. We understand that consideration may be given to setting limits on total toxicity and we would welcome further discussion on this.

PAPERMAKERS HOUSE, RIVENHALL ROAD, WESTLEA, SWINDON SN5 7BE. TELEPHONE: 0793 - 886086 TELEX: 445759 FAX: 0793 - 886182
THE BRITISH PAPER & BOARD INDUSTRY FEDERATION LIMITED A COMPANY LIMITED BY GUARANTEE REG. No. 122788 IN ENGLAND REGISTERED OFFICE: PAPERMAKERS HOUSE, RIVENHALL ROAD, WESTLEA, SWINDON SN5 7BE. DIRECTOR GENERAL: W.J. BARTLETT SECRETARY: L.A. FRYER

4 Being an industry that discharges for 365 days on a 24 hour cycle, we support the suggestion of improved continuous monitoring using load based criteria. We appreciate the role of spot samples, but it is of questionable relevance as a measure of polluting potential. The only effective method is to have a monitoring scheme that records in relation to the production cycle. Some of our mills are moving in this direction as the most accurate statistical support to discussions within their local communities. These are increasingly based on total annual pollution load. We submit that NRA has similar objectives and that there is scope for working to a load based average for non-toxic content with a maximum short term limit.

5 Future terminology needs further development, as is suggested in the Report. Our industry is already involved in a similar exercise with the European Commission and a compatable basis will be vital. We should be pleased to discuss these further with NRA. For example, we question the relevance of both turbidity and TOC, as practical measures.

6 We are also concerned about the implications for surface run-off. Pollution from this cause must be considered, but there are practical problems in endeavouring to control short periods of intense rainfall or the resultant problems of snowfall. It would be unrealistic to design plant capacity against circumstance that might arise only rarely. There must be managerial systems of control, of course, but there is a limit to an open ended commitment.

7 Recommendation 30 suggests named contacts within companies. This applies in other fields, of course, so is not difficult to accept, but the role must clearly indicate whether it is only as a contact or one of corporate responsibility.

8 Overall, we consider that the most effective method is to lay down the environmental objectives and associated timescales and then agree programmes with the companies affected. Some will have already made the necessary investment, of course, as they are sensitive areas. However, NRA will need to liaise closely with companies elsewhere, as substantial improvement can be anticipated as being necessary. This will be significant for corporate business plans and must be allowed for well in advance. We are encouraged that the Report appreciates the need for this approach, as continual change to short term objectives will not benefit either NRA or dischargers.

9 It would not be our intention to publish this letter and we have no objection to abstracts being used provided they are unattributed.

Yours sincerely

D J Gillett
Head of Health and Safety

BRITISH TROUT ASSOCIATION

104 Parkway, London NW1 7AN

Tel: 071-911 0313
Fax: 071-911 0315

RECEIVED
16 NOV 1990
Job File
Reply

Dr John Bowman
Chief Executive
National Rivers Authority
Rivers House
30-34 Albert Embankment
London SE1 7TL

31st October 1990

By Messenger

Dear Dr Bowman

The British Trout Association (BTA) was reformed on October 1, 1990. The new Association will extend and build on the work of the previous organisation. In addition to the work of promotion and publicity, our new enterprise will actively represent the interests of British Trout Farmers in matters related to representation and technical activities.

The new organisation has had a massive vote of confidence from trout farmers who have substantially increased their contributions to this voluntary enterprise. Concurrently, the Fish Farming Committee of the NFU has stood down so this organisation can take on the activities which it carried for fish farmers.

I am the Chief Executive of the New British Trout Association and we now have offices in North London to fulfill the enhanced role sought by our members.

In future we trust you will consult us on water matters relevant to fish farming, as well as sending copies to the NFU who will be advising us on political matters.

Several of our members sit on regional NRA committees, but we have not, in the past, been consulted at national level. I trust this will be done in future.

We understand that submissions on the recent Kinnersley Report are required by today. In general we recognise this to be a good report which will largely be beneficial to trout farmers. However we realise that it is addressed mainly to sewage and industrial waste dischargers. The interests of trout farmers are clearly different from major dischargers. We trust that the degree of monitoring and associated charges will be appropriate to fish farmers recognising that statistically they are not significant polluters.

The NRA clearly recognise the unique role of Britain's Rainbow Trout Farming business by highlighting in your advertising campaigns that farmed Rainbow Trout is the symbol of water purity.

I trust that we can build a successful working relationship between our two new organisations to our mutual benefit. We look forward to the opportunity of discussing these points with you and your collegues.

Yours sincerely

Jim Munday
Chief Executive

British Trout Association comments on the NRA proposed scheme in respect of discharge consent and compliance policy - July 1990.

General:

1.
The British Trout Association represents the majority of fresh water fish farmers in England and Wales. Whilst numerically they are a small number of dischargers, their entire business is dependent on water and the river environment.

2.
The Kinnersley Report devises proposals to cover all dischargers however in the specific instance of trout farmers, the proposals should be appropriate to the discharger. It is inappropriate for trout farmers to pay for stringent monitoring when they are not significant polluters.

3.
We therefore expect the NRA to consult the British Trout Association formally on these matters, which have such a direct impact on our members businesses. The impact of the proposals may be fundamental both to trout farm practice and the viability of their operation.

4.
Unfortunately the period we had for consultation with our members has been limited to an unsatisfactory period of one month due to the difficulties experienced in obtaining copies of the report.

5.
We would have preferred the opportunity to consult with the NRA at an earlier stage to take into account the special case of water users such as trout farmers, whose interests are very different from sewage and trade effluent dischargers.

6.
Several of our members sit on regional NRA committees, but we are not consulted on very important national issues. This could be taken to suggest some window dressing for political ends rather than taking a serious interest in a vital group who depend 100% on the river environment for their livelihood.

Specific Comments

7.
Even after a very short period of consultation detailed comments from our regional representatives run into many pages. There are many points of technical detail and interpretations which we trust can be resolved after due consultation. However most of the fundamental points, the main ones are included in the following summary:-

Charges
The report states that any discharger complying with a consent is not a 'polluter'. Statistically fish farmers are not significant polluters. This is confirmed by NRA regional data. It seems quite inequitable that someone who observes an imposed limitation on a legal activity should then be charged disproportionate costs to monitor this activity.

Absolute Discharge Levels
For fish farmers, especially on spate rivers the water abstracted can change dramatically with changing season and weather conditions. Frequently water inflow contains very high levels of suspended solids, high levels of BOD and other ingredients. Water quality out is very many dependent on water quality in. Can we assume that absolute levels will be incremental on water quality abstracted?

Operation
Some recommendations imply that NRA seeks to impose mandatory working procedures on fish farmers. Are your staff qualified to advise on fish farming?

It is suggested that settling ponds may be a legal requirement. Why? settling ponds are not normally needed on fish farms to comply with discharge consent levels!

Monitoring
The suggestion of monitoring flow and effluent quality on a continuous basis appears to be a very expensive exercise. Most fish farms could not afford such equipment. It may seem desirable for sewage works, chemical factories and the like but it is not appropriate for the fish farm discharges.

Sampling
The cost of frequent sampling again raises the question of it's appropriateness to trout farmers. The report should follow its comment "Sampling programmes need to be economical" and be appropriate to the requirements of the discharger. We recognise the need for random sampling but unpredictable visits by sampling staff especially in remote areas by night, may be dangerous if they are mistaken for poachers or thieves.

If the NRA and the trout farming industry are to work together as guardians of the environment it is essential that as a matter of course dischargers are given the results of all tests, for which they pay. We do not want the first contact to be an "Action Warning".

BOD and Suspended Solids
It is felt that these determinands are more relevant to measurement of water quality rather than the suggested TOC and Turbidity. The latter being suggested solely for ease of measurement.

Percentile Limits
We believe that these may be more applicable for discharge continually monitored from trade and sewage effluents rather than fish farms.

Designated Person/s
Whilst the discharger may be required to nominate a person for day to day contact. The responsibility for any failure should be with the corporate body. The NRA should also provide a similarly named responsible contact.

Pollution Incidents
It should be made clear in the register of pollution incidents when guilt is proved. Many pollution 'incidents' are groundless. Recently a report of 16 pollution incidents attributable to fish farming in one region all proved to be false alarms. This can and does lead to misrepresentation and unjust criticism in the media. This reflects unfairly on our industry.

8. Charges
We are extremely concerned that the charges that may wish to make are inappropriate to the requirements you aim to satisfy.

In the start-up of any organisation, such as the NRA, there will be the temptation to include everything that you may feel is desirable. This is probably done to cover all eventualities and circumstances.

Charges should relate to the job to be done and not in setting up a massive 'police force' which assumes all fish farmers to be guilty even if proved innocent.

Fish Farm production is related to the volumetric consent. It should be noted that this also reflects individual farmers ability to pay water charges.

Comparison of similar charges in other EC countries and also in Scotland and Northern Ireland are imperative if the trout farming industry of England & Wales is not to be at a significant commercial disadvantage.

When charges are compared they should be with all water charges including abstraction, discharge, monitoring, sampling and any other costs recovered from fish farmers as water users.

JRM/1
October 31, 1990

Thomas Harvey House
18 Colegate Norwich Norfolk NR3 1BQ

telephone Norwich (0603) 610734

Broads Authority

Special Statutory Authority

Chief Executive M Aitken Clark

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE17 1L

29 OCT 1990
2440

our reference: FJM/LJC

your reference:

date: 26 October 1990

Dear Dr Pentreath

Broads Authority Response to NRA Report - "Discharge Consents and Compliance Policy: A Blueprint for the Future"

The Broads Authority is charged with coordinating the management of the Broads, an internationally important wetland and National Park. We therefore welcome the opportunity to comment on this report which has implications for water quality control, an essential element of restoration management in the Broads.

General

We welcome the report and the general spirit of its recommendations relating to more effective discharge controls to the water environment. We congratulate the authors of the report for presenting this technical subject in a comprehensive, readable and interesting way.

Comments given below are made in the light of particular experience in the Broads area. Where no reference is made to a recommendation it can be assumed that we concur with its content.

Recommendation 3

Clarification of controls in respect of pollutants not covered by numeric consents, eg ammonia, is welcomed to cover temporary but environmentally damaging discharges.

Recommendation 4

Use of prohibition notices should be reviewed according to vulnerable areas in each catchment, eg proximity of septic tanks to freshwater lakes or grazing marsh dykes of conservation value. In the Broads, the NRA is currently reactive in its approach to such pollution incidents and identification of potential problems would enable a more preventative approach in future.

All correspondence should be addressed to the Chief Executive

Recommendation 6

A tightening up on maintenance of pollution control facilities is welcomed, to ensure a sustained effort, adequate staff resources and training. Failure to address these aspects has limited the success of the phosphorus reduction programme at sewage treatment works in the Broads to date.

Recommendation 8

We welcome the introduction of absolute limits for numeric consents to enable more precise and objective control of discharges.

Recommendation 9

We recognised that the use of percentile limits in addition to absolute limits is complementary, especially where consideration of chronic or cumulative effects is important. However, this document does not define "environmentally significant discharges" to which this recommendation refers. The text mentions "vulnerability" and "carrying capacity" of the receiving waters. It is suggested that, in addition to these criteria, the desirability of water quality improvement or restoration should be a criterion.

Recommendation 10

The introduction of limits on loads is welcomed. This has relevance to the Broads where broads which are relatively isolated from the river system have long residence times.

Recommendation 11

Numeric consents on flow will help to make controls more meaningful in ecological terms.

Recommendation 13

The bringing of unconsented but environmentally damaging discharges into the consent system is welcomed.

Recommendation 14

Consistency of application of consent limits for ammonia is welcomed. However, given the known widespread and damaging effects of excessive ammonia discharged, it is suggested that such numeric consent levels for ammonia should be set for all environmentally sensitive situations. A recent campaign to control ammonia discharges from pig units along the River Waveney by the Anglian Water Authority and MAFF, has resulted in significant environmental benefits.

Recommendation 15

We have some concern over the replacement of determinands BOD and suspended solids with TOC and turbidity, solely on the basis of ease of measurement. The parallel assessment of these factors over 4 years to evaluate the suitability of these changes is therefore welcomed.

Recommendation 16

The use of toxicity tests is believed to be complementary to other monitoring checks.

Recommendations 17-20

These recommendations are laudable, but obviously depend on adequate staffing and resources which currently limit these activities within the NRA.

Recommendation 22

The provision for reduction of time periods for assessment of compliance of discharges to sensitive waters from 12 months to 6 or 3 months is welcomed.

Recommendation 23

This clarification of procedure is welcomed.

Recommendation 24

The provision of continuous recorders is a vital tool to assessment of compliance. The need for these should be assessed by the NRA per catchment and a timetable for their introduction prepared, rather than providing them as and when resources allow. Alternatively, as suggested, they should be a condition of a discharge consent for environmentally sensitive discharges, although this self-monitoring has obvious disadvantages.

Recommendation 25

The retention of the NRA use of tripartite checks is essential in view of the likely increase in self-monitoring by dischargers. Recommendation 26 is also essential to ensure accuracy of monitoring procedures.

Recommendations 27-32

These recommendations will help to make dischargers more aware of their obligations. Action warnings are likely to precipitate some remedial works. This was a technique successfully used by Anglian Water concerning piggeries along the River Waveney.

Recommendation 33

The implementation of recommendations catchment by catchment makes good sense for practical reasons and will enable work to go on alongside an educational programme. The list of priority areas (Paragraph 143) should include those areas where a significant improvement in water quality objectives is deemed appropriate for environmental reasons. A clear timetable for implementation would be welcomed.

Other

We appreciate that this report does not cover the methodology by which new absolute consent limits will be set. Obviously, the success of the suggested changes to the compliance system rests on this review process. We therefore hope that the follow-up report will be distributed widely for consultation.

We are very willing to provide further information regarding any comments made above or in relation to the particular situation of the Broads system. We have no objection to your use or reproduction of the above response.

Yours sincerely

Jane Madgwick

Jane Madgwick
Assistant Broads Officer (Conservation)

CHEMICAL INDUSTRIES ASSOCIATION

01 NOV 1990

2693

Dr R J Pentreath
National Rivers Authority
30-34 Albert Embankment
London
SE1 7IL

Our ref: 4411/6

October 31, 1990

Dear Dr Pentreath

"DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

CIA is grateful for the opportunity to comment on the NRA proposals contained in the above document.

Our detailed comments are attached and you will see that we generally support the NRA recommendations. We find the document is helpful and constructive. However, we do think there are some omissions and inevitably the recommendations raise a number of technical issues which will need to be further explored. CIA would, therefore, welcome a detailed discussion with NRA on the issues raised by the document.

We will not be making our response available to the media as a matter of course but would be prepared to give it to journalists on request.

We have no objection to the NRA making our response publicly available. However, if any extracts are used we would wish them to be seen in the light of our general comments.

Yours sincerely

Mrs D E Brown
Senior Environment Executive

DEB15

1965 - 1990 Twenty-five years of commitment

Kings Buildings, Smith Square, London SW1P 3JJ Telephone: 071-834 3399 Telex: 916672 Fax: 071-834 4469

Director General: John C L Cox, *General Secretary:* C R Brooks
Directors: T D Culpin (Business Development), R J Grainger (Product & Regulatory Affairs), J S Foulds (Employment Affairs) G F Liardet CB CBE (Public Affairs)
Chemical Industries Association Limited Registered Office as above Registered in England No. 860702

Chemical Industries Association

DISCHARGE CONSENTS AND COMPLIANCE POLICY

Introduction

We have read with much interest the NRA review entitled "Discharge Consent and Compliance Policy: a blueprint for the future". The consultation is a very welcome one. Since the change in regime brought about by water privatisation CIA has urged that the opportunity be taken to correct current deficiencies in the system and to ensure a fair and equitable approach to discharge consents. CIA is anxious to ensure that any information which is placed on public registers is publicly credible and at the same time does not lead to an undue burden being placed on industry.

General Comments

In many ways the document is a good and helpful one, with many of the issues being discussed in a clear and constructive manner. However, there are some significant omissions.

Firstly we were surprised that paragraph 1 of the Executive Summary contained no reference to quality objectives, which are the keystone of the UK approach to water pollution control. It was disappointing to us that there is no mention of EQOs and EQSs and the important issue of how discharge limits are arrived at from them. What is environmentally acceptable (see paragraph 22) needs to be carefully defined.

Secondly we welcome the attempt to discuss the issues relating to the way limits should be defined (chapter 4) but consider that it is a subject which needs handling in greater depth and with a better definition of how conclusions were reached. For example there is no explanation of how the curve on page 17 was derived and we question the comments at the top of that page. As it stands there is a major gap in the explanation and the way in which limits are derived needs much further discussion.

Thirdly we note the recommendations about various test methods and agree with the general thrust. However, there needs to be more discussion about the types and range of tests to be used, particularly where biological methods are used.

Comments on Recommendations

Recommendation 1: We agree.

Recommendation 2: We welcome the review and the uniformity it will produce. Some guidance on what constitutes an alteration in scale of character of discharge would be helpful.

Recommendation 3: We agree.

Recommendation 4: We agree.

Recommendation 5: Before we can comment constructively we would need to have more detail of the intentions of NRA.

Recommendation 6: We agree.

Recommendation 7: We agree.

Recommendation 8: CIA has for some time taken the view that consents should include an upper limit which must not be exceeded together with an average limit which has to be achieved. This type of approach protects the receiving water from excessively large amounts of pollutants whilst recognising the fluctuations which can be expected to occur in any manufacturing process.

Recommendation 9: It follows from our comments on Recommendation 8 that we agree. We are very content that NRA has embraced this tricky issue and intends to formalise its approach. We have had considerable misgivings about the current use of the 95 percentile approach.

Recommendation 10: We believe that this is a sensible approach but careful definition of the limit and a justification are necessary.

Recommendation 11: We agree.

Recommendation 12: We agree.

Recommendation 13: We agree.

Recommendation 14: We agree.

Recommendation 15: We agree. However, "turbidity" could be contentious, because it is difficult to define.

Recommendation 16: This seems to be a sensible approach but a range of agreed tests will be needed. We would be happy to discuss this further with NRA. We have currently some reservations about microtox testing which is easy to carry out but which does not really give an indication of what is really happening .

Recommendation 17: We agree.

Recommendation 18: We welcome dialogue with the discharger. We hope that NRA might be prepared to go one step further and inform discharges of the details to be placed on the public register. Dischargers would wish to cross-check their own results. It is already the practice for some NRA officials to inform sites on a monthly basis of the results obtained on discharges. It would be appreciated if this procedure could be formalised and extended.

Recommendation 19: The way in which samples are taken and analysed needs careful consideration in the light of information placed on public registers. We consider that there is a case for specifying sampling techniques and analytical method performance criteria as part of the consent. We welcome the provision of detailed guidance on sampling frequencies but believe that this should be extended to include sampling techniques and analytical methods.

Recommendation 20: We agree.

Recommendation 21: Whilst we do not disagree with this approach, we stress the need for proper quality control. Every attempt should be made to eliminate analytical error and contamination of samples. Single samples should not be used to assess compliance.

Recommendation 22: This recommendation is particularly relevant in the case of continuous monitoring.

Recommendation 23: We agree.

Recommendation 24: We regard continuous monitoring as a management tool rather than a regulatory control mechanism. Continuous monitors are not completely reliable, there are calibration difficulties and problems of interpretation. Therefore, whilst we have no objection to discussing the results of continuous monitoring with NRA representatives we do have some concerns about how the results will be handled in the context of public registers. We would welcome further discussions on how these very real practical problems might be overcome.

Recommendation 25: We agree.

Recommendation 26: See our comments on Recommendation 24. We need to know what validation procedures will be used and how the results will be handled on the public registers. An explanation of the intentions of NRA with respect to remote interrogation of equipment would have been appreciated.

Recommendation 27: As indicated above we would wish to discuss this issue with you.

Recommendation 28: It would be very helpful if the NRA was to produce a booklet for the general public explaining this and other basic issues. We also believe that it would be helpful for a general comment on the consistency and reliability of the instrumentation to be placed on the register with any results.

Recommendation 29: This is a reasonable statement.

Recommendation 30: We welcome dialogue between NRA and dischargers and see considerable sense in nominating a contact at an appropriate level in the management structure.

Recommendation 31: We agree.

Recommendation 32: We agree.

Recommendation 33: We welcome this approach with the qualification that there is a need to coordinate the activities to ensure consistency of approach.

Conclusion

The document is a thoughtful one which is conceptually sound. However, it inevitably raises a number of technical issues which will need to be further explored

DEB/27
31st OCTOBER 1990

THE CHINA CLAY ASSOCIATION

Secretary:
M. GOWAN
Administrator:
MISS D.M. ROWE

TELEPHONE: ST. AUSTELL 74482

John Keay House
St. Austell
PL25 4DJ

30 OCT 1990
2464

MG/DMR/553/90

Your Ref: Our Ref: 29 October 1990

Dr. R.J. Pentreath,
Chief Scientist,
National Rivers Authority,
3-34 Albert Embankment,
London SE1 7TL.

Dear Sir,

DISCHARGE CONSENT AND COMPLIANCE POLICY:
A BLUEPRINT FOR THE FUTURE

This Association represents all the producers of china clay in the United Kingdom.

We have welcomed the opportunity to study the Report and to make comment upon its Recommendations. The establishment of a set of guidelines to support the Authority's approach to consents and compliance is to be encouraged and our comments are therefore made in the spirit of improving its concept so that a good and reasonable environmental control can be sustained.

Our detailed comments are as follows:-

Recommendation 1 We would not recommend that the Authority should publish "estimates of the degree of compliance among those regularly sampled." In our view estimation will lead to data being incomplete and will allow for a misleading interpretation to be made.

Recommendation 3 We accept the importance of removing any scope for misunderstanding but we consider it essential that any determinand should be clearly specified in the consent. If the Authority should seek to require a control of any kind then it should be clearly identified from the start.

Recommendation 9 To give proper effect and support to such a statistical approach, a statement concerning sampling will be required. This, we consider, is necessary to give validity to the basis.

Recommendation 10 Generally, determinands should be set having regard to the ability of the receiving waters to accommodate the discharge.

Recommendation 13 We consider that care should be exercised in the application of this principle. It may be reasonable to contain and control substances that may be released in such conditions because of the activity of the quarry process over which the surface run-off passes. However it would appear to us not to be reasonable to expect the controls to extend to the limitation of elements that would otherwise naturally be released from the ground.

Recommendation 15 We accept the suitability of TOC but would emphasise that turbidity is not a satisfactory measure with which to determine a consent condition for mineral workings.

Recommendation 17 This is acceptable as a general principle provided that no unreasonable costs are imposed upon Industry to allow for it. Essentially for the safeguard of sampling staff as well as quarry management, agreed routes of access to sampling points should be determined and maintained.

Recommendation 18 The provisions for continuous monitoring are reasonable provided that the Authority has full regard to its cost. It is frequently used in this Industry at present to monitor flow, temperature, ph and suspended solids but even so it is very expensive both in site work and equipment. If the aim were to extend such monitoring to many other elements then the costs would become exorbitant.

Recommendation 27 We welcome the principle that the Authority should indicate clearly which data they will or will not rely upon as evidentiary. We understand and sympathise with the concern that many dischargers have concerning the perceived danger of prosecutions arising from their own monitored data passing into the public domain.

Recommendation 29 We welcome and support this approach.

Recommendation 30 We object to this proposal as it would not be suited to the management systems used predominantly in this Industry. The day to day site management will be shared by a number of managers as china clay production is a continuous operation. Therefore for good liaison between Authority and Company as well as to allow for the better control internally, all formal notifications should be to a particular Officer or to a Company Secretary as may be agreed in liaison between the parties.

Recommendation 32 We are not convinced that a formal Action Warning of this nature is either necessary or appropriate. Warnings can be given in the "on site" contacts made by Pollution Inspectors or in normal correspondence between executives of the Authority as a public organisation and a discharger. The problems would be compounded if details of formal Action Warnings were to be entered upon the public register.

Recommendation 33 We strongly support this principle and would advocate that it should be given a first priority in the matter of consent and compliance policy.

We trust that these comments will assist further consideration of these matters. We do not propose to make our response available to the media but would not object to the Authority making it available to the public if that were considered appropriate and necessary.

Yours faithfully,

Secretary.

CIBA-GEIGY PLC
Hulley Road
Macclesfield
Cheshire SK10 2NX

CIBA–GEIGY

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2501

Telephone: Macclesfield (0625) 21933
Telex: 667336
Fax: (0625) 619637

Our ref:
Your ref:

Dr E J Pentreath
Chief Scientist
National Rivers Authority
30/34 Albert Embankment
London SE1 7TL

31 October 1990

Dear Sir

Discharge Consent & Compliance Policy :
A Blueprint for the Future

We refer to your letter of 26 July last and set out below our comments on some of the recommendations. We welcome having the opportunity to comment. We do not propose to publish this, our response to the consultative document. If you wish to publish in total or in part we must request that you first obtain our consent so that in every such situation we may approve the intended use, knowing the context in which it will be used and the identity and date of publication. Our consent will not be unreasonably withheld but our prior agreement must be sought in every case.

We welcome proposals leading to improvements in the aquatic environment but have reservations/queries on the following recommendations:-

Recommendation 2

We accept that the application form constitutes the data base from which the consent parameters will be derived, but this should not preclude dialogue and discussion between the discharger and the NRA before the consent is finalised. These contacts are important. With regard to para (ii) of Recommendation 2 there needs to be a clear understanding of what the NRA means by "any alteration in scale or character of the discharge" as this could have considerable impact on multi-product speciality organic chemical operations. The important factor must surely be the environmental impact on receiving waters.

Recommendation 6

Maintenance is an important aspect of good management, and we accept this as our routine responsibility.

We are concerned about the inclusion of these aspects of management in the consent conditions. If maintenance problems result in non-compliance with the consent conditions then, and only then, has the discharger 'committed' an offence.

Registered Office: Hulley Road Macclesfield Cheshire SK10 2NX
Registered in London Number 170 180

Recommendation 8

The concept of absolute limits needs to be linked to a clear definition of what constitutes an infringement where there is continuous monitoring (e.g. 1 second, 1 minute, 1 hour...?). Discharges who have continuous monitoring would be at a disadvantage to those whose compliance is based on random checks - see comments on 24-27.

Recommendation 9

There must be a clear understanding about what is meant by an "environmentally significant change". This could well vary depending on the nature of the receiving waters. The definition of this term must be capable of being understood by the public.

Recommendation 10

Careful definition of the limit and a justification for same are necessary.

Recommendation 15

In considering moving towards new parameters, a sufficient period of parallel assessment will be necessary to ensure the appropriateness of any new parameters, establish test methods etc. New parameters will presumably not be included in the consent conditions during the period of parallel assessment.

Recommendation 16

A range of tests will have to be considered and there should be early dialogue.

Recommendation 18

There must be effective communication between the discharger and the NRA at all times. Dischargers need to know what details are to be placed on the public register. In the event of samples being out of compliance it is vital for the discharger to be aware of this immediately (say within 24 hrs) i.e. before the information is placed in the public domain via the registers. Dischargers need to be able to cross-check results.

Recommendation 19

Sampling methods and strategies and analytical methods need careful consideration given the extent to which results are to be available to the public.

Recommendation 21

Any sample used for assessment of compliance must be taken by professionally accepted methods to ensure they are representative.

Recommendation 22

This is relevant for interpretation of data of samples taken continuously. There should be further consultation how such results should be interpreted.

Recommendations 24-27

We are particularly interested in these recommendations because of our current appeal against the imposition of a continuous monitoring consent condition at our plant in Duxford, Cambridge.

Continuous monitoring is a useful management tool for dischargers. We strongly believe that such monitoring, particularly with "remote interrogation" (telemetry) by the NRA should be kept out of the formal regulatory system until the following conditions (1) - (3) are met in full.

1) Much clearer guidelines have been established on the circumstances under which continuous monitoring with remote interrogation should be made a formal consent condition. The expression in Recommendation 24 that it should be promoted "where technology and circumstances make that possible" is unsatisfactorily vague. Such equipment is very expensive to install and maintain. The mere fact that large companies like Ciba-Geigy can technically afford to install such equipment should not, we believe, be used as a parameter in deciding whether such a consent condition should be imposed. There should be clear and unarguable technical reasons why discharger A should be required to accept such a condition and discharger B should not.

2) The extent to which the NRA is statutorily required to place data obtained by continuous monitoring onto the public register has been formally clarified. Para 114 suggests that the registers contain only a full record of NRA initiated sampling of consented effluent discharges: Water Act 1989 S.117 (1) (e) (ii) states that the register must contain prescribed particulars of "such information with respect to samples of water or effluent taken by any other person and the analyses of those samples as is acquired by the Authority from any person under arrangements made by the Authority for the purposes of this Chapter" NRA Anglian Region wrote to our Plastics Division at Duxford on 1st June 1990 stating in effect that, under the terms of this subsection, any information acquired by a telemetry link would have to be made available to the public via the register. Our own lawyer agrees with this interpretation. This appears to be at variance with Recommendation 27 which implies that the NRA has some discretion in selecting data to appear on the register. Where is the statutory authority for this?

3) General guidance has been given on the extent to which data appearing in the public register as a result of remote interrogation of continuously monitored data is admissible in criminal proceedings.

We do not believe that this is a matter which should be left to the Courts to decide. Although the NRA may give an assurance that it does not intend to use certain data as evidence such an assurance would not benefit a discharger in the event of a private prosecution. The matter is important because in any continuous monitoring system there are likely to be occasional 'blips' above a consent limit, perhaps lasting for only a few minutes, which would give rise to no environmental damage at all but which could possibly give rise to an inappropriate prosecution.

Rules and guidelines must be developed to ensure that there is a consistent approach to the determination of the accuracy of the monitoring equipment and validation of the results. In a system which takes a large number of samples in the course of a year there should also be some guidelines on the level of deviation required before a prosecution would be considered appropriate.

Recommendation 33

The introduction of a Catchment basis can only be foreseen when the policy, evaluation, interpretation etc has been agreed on a national basis.

We trust these comments will be of assistance. The document raises a large number of very important issues. It is hoped that there will be opportunity for further discussions.

Yours sincerely

Dr I G Laing
Director of Health, Safety & Environmental Protection
IGL1/ED'A

Confederation of British Industry
Centre Point
103 New Oxford Street
London WC1A 1DU
Telephone 071-379 7400
Facsimile 071-240 1578
Telex 21332

Director-General
John M M Banham

Deputy Director-General and Secretary
Maurice Hunt

CBI
Silver Jubilee
1965-1990

Ref: TL/PS/157
Dir: EAD

02 NOV 1990
2491

31 October 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

Dear Mr Pentreath

NRA Discharge Consent and Compliance Policy: A Blueprint for the Future.

Following consultation with our members, the CBI has produced a written response to NRA proposals on discharge consent and compliance policy. I enclose a copy of this paper for you.

Whilst we welcome the NRA's intentions for a consistent and clearly understandable policy on discharge consent and compliance, we have a number of concerns over the proposals which we have detailed in our response.

Yours sincerely

Dr E F Thairs
Deputy Director
Employment Affairs
(Environment, Health and Safety)

Confederation of British Industry
Centre Point
103 New Oxford Street
London WC1A 1DU
Telephone 071-379 7400
Facsimile 071-240 1578
Telex 21332

Director-General
John M M Banham

Deputy Director-General and Secretary
Maurice Hunt

CBI
Silver Jubilee
1965-1990

EHS 461 90 **OCTOBER 1990**

CBI COMMENTS ON NRA DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

1. We are grateful for the opportunity to comment upon the NRA recommendations for intended national policy, and hope that this is a signal for early consultation with industry on all future NRA policy issues. We urge the NRA to ensure that this is so; proposals which impose specific requirements on industrial dischargers, and associated charges, particularly concern us.

2. Whilst we support the NRA intention to provide a more consistent approach to discharge consents, we must stress the need to ensure that the policy sets achievable limits for discharges within an acceptable timescale, so that capital and revenue costs required by industry to comply with the policies may be absorbed gradually.

3. NRA policy issues are of relevance to many sectors of industry. It is vital that monitoring techniques and compliance standards are practical and feasible to implement, and are done so at an acceptable cost to industrial dischargers.

4. We welcome the NRA's intention to produce a clear statement of policy. However, the current document does little to clarify the division of responsibilities between NRA and other control authorities with water related duties. We welcome further consultation with NRA on this and other issues detailed below, where clarification is still needed.

5. Our comments on specific points of policy are detailed below. We wish to draw particular attention to the following: (i) that BOD/COD and suspended solids should remain as the parameters used for testing consent compliance; (ii) that continuous self monitoring should remain optional; (iii) that care should be taken in setting absolute and percentile limits for testing consent compliance to ensure they are environmentally justified and practical; and (iv) the importance of the NRA having regular liaison with dischargers, involving the transfer of information and provision of guidance.

INTENDED NRA POLICY SUPPORTED BY INDUSTRY

6. We welcome guidance from the NRA to potential dischargers on completing application forms for consent. Guidance should tie in with, and ideally refer to, relevant guidance on the implementation of the Environmental Protection Act, thus preventing confusion and unnecessary use of time and resources to understand the forms. (Recomm 2).

7. We approve the approach that numeric consents should be self contained in their drafting, and agree that misunderstanding over non-specified constituents of a discharge must be ironed out. Whilst we fully support the NRA principle to safeguard the environment from discharge related pollution incidents, we would welcome further discussion with NRA, particularly with regard to possible additional process plant requirements and liabilities for industrial dischargers. (Recomm 3).

8. Advice from the NRA on consent requirements for septic tanks is welcomed, providing that it is consistent throughout the ten NRA regions. (Recomm 4).

9. We fully support the recommendation that NRA should examine temporary or 'special situation' discharges for their pollution potential. We agree that all discharges should be consented and examined as a matter of course and that the NRA would require considerable time and resource to achieve this. (Recomm 13).

10. We accept the principle that consistent limits for ammonia ought to be applied to relevant consents, particularly to bring the requirements on all dischargers in line with those already imposed on the water industry. (Recomm 14).

11. We strongly believe that regular liaison between NRA and the discharger can facilitate compliance with acceptable and achievable consent conditions, and that it is essential to ensure good environmental quality control. The transfer of information is especially important where charges are involved. NRA records can be easily copied to the discharger, reducing the need for prolonged assessment of results between the parties as contentious are raised at an early stage as possible. (Recomm 18).

12. Sampling programmes must be entirely appropriate to the discharge consents to which they are applied. This is also true for accident and emergency situations. We fully support the intended work to be carried out by the NRA Sampling Group, and that NRA sampling procedures and associated charges are subject to regular external auditing. In addition, whilst we understand that all samples may be used in assessing compliance, we must stress that they be taken as tripartite. This is particularly important where they could

be used in assessing non-compliance with consent conditions. (Recomm 19, 20, 21).

13. We approve the NRA recommendation to keep the counting of exceedences against percentile limits separate for each determinand having such limits, and NRA intention to provide relevant guidance to consent holders, believing it will minimize confusion arising over non-compliance with discharge consent conditions (Recomm 23).

14. We fully support the NRA proposal to indicate to dischargers the information which will appear on the register; we would add that the NRA should allow a period for the discharger to comment if he so wishes. We urge the NRA to adopt this as standard practice in all regions. (Recomm 27).

15. We believe that the NRA provide guidance on the meaning and interpretation of percentile limit exceedences, to ensure complete comprehension by the consent holder, and ensure that misinterpretation of data by the public is minimised. This can be assisted by the incorporation of the standard note into each register. (Recomm 28).

16. The proposal that all relevant circumstances including records of care need to be considered by the NRA in deciding on prosecution is most welcome. (Recomm 29).

INTENDED NRA POLICY NOT ACCEPTED BY INDUSTRY

17. We strongly disagree with the proposals to require dischargers to provide to the NRA information from their maintenance records. The NRA's enforcing powers are to ensure that the consent is being complied with and this should be carried out through discharge and receiving water. monitoring. The maintenance records are solely the concern and responsibility of the site operator. (Recomm 6).

18. Although we understand the NRA's wish to gather and analyse any necessary information before deciding on the compliance parameters to be used, we are very concerned over the implications for industry should the proposed changes to parameters be implemented. The choice of parameters should reflect their measure of environmental effect - not the ease of arriving at numerical values. We therefore do not accept TOC and turbidity as the general bases of control or charging, despite their relative ease of measurement. We accept that in some circumstances parameters other than BOD or suspended solids may be more appropriate: however, we would ask the NRA to produce a table indicating where and why such paramaters are necessary for different sectors of industry. The NRA must bear in mind the need for consistency

and forward planning: companies have made investments, some very recent, in equipment to measure BOD and suspended tests. (Recomm 15).

19. We accept the right of NRA to make unscheduled monitoring visits. However, there can be health and safety difficulties from entering unmanned sites or of visits at night or weekends. Companies can assist the NRA officer by being on hand to provide current information relating to the site discharge practice, and should generally be given advance warning of visits. (Recomm 17).

20. We cannot accept a rolling time approach to consent compliance which is less than 12 months which we believe would introduce the problem of seasonal variation, for example through spring overloading problems of biological filters. In addition, we do not accept that the current frequency of sampling is sufficient at the present level if anything higher than a 50 percentile limit is endorsed. It is imperative that any samples used for assessing compliance are routinely taken, and not done so under special or uncharacteristic circumstances. (Recomm 22).

21. We do not accept that the employee's name should appear on the application form for consent. The position title only of the appropriate employee would be more relevant, as staff changes would immediately render the consent form incorrect. (Recomm 30).

22. We believe that warning notices from the NRA would be considerably more effective in ensuring compliance with consent condition if initially they are informal. However, should they be formally issued, appearing also on public registers we urge the NRA to provide further clarification as to the time period that this information will appear on the register, and whether they will include data from the dischargers own self monitoring equipment, and information given to NRA voluntarily. (Recomm 32).

INTENDED NRA POLICY REQUIRING FURTHER CLARIFICATION

23. We urge the NRA to provide further clarification on the particular issues detailed below, and welcome the opportunity for discussions with the NRA on these matters prior to the policy recommendations being adopted.

24. Whilst the NRA intend to publish data about consents, we suggest that this could be done on a national scale with data in one publication. There are implications, in legal and public relations terms, for industrial dischargers should such data be published, particularly so where estimates of the degree of compliance are intended. This is of extreme concern to us and we welcome further information on the

intentions of NRA, and the related costs of carrying out the work. (Recomm 1).

25. Absolute limits for individual discharges must be scientifically justified and neither more lax nor more stringent than is necessary to protect the environment. They must be fair, achievable and consistently enforced. We urge the NRA to publish national guidance on determining absolute limits, and thus provide for a transparent system taking on board the criteria mentioned above. We also believe that the current absolute levels used in consent conditions would need to be increased where percentile limits are also to be used. (Recomm 8).

26. Further justification is needed for adopting 80 percentile limits in addition to the absolute limits for some discharges. We cannot support the overall recommendation which appears to be a tightening of consent, adding to the complexity of compliance schemes, until we know how the NRA intends to define 'environmentally significant discharges'. (Recomm 9).

27. Conditions requiring dischargers to comply with limits on loads and maintain records of the mass of a substance discharged over a given time period increases the complexity of monitoring and administrative arrangements, and could place unjustifiable resource and financial burdens upon the discharger. We require further clarification from the NRA as to discharges to which these conditions will apply, to secure the requirements are justifiable in environmental terms.

28. We find it difficult to envisage how compliance with limits for instantaneous flow could be monitored, and what action could be taken to prevent this occurring. We urge the NRA to ensure that limits will not be applied to discharges significantly influenced by rainfall. Whilst we believe that for discharges influenced by rainfall should be as specific as possible the worst case flow should be incorporated into consent conditions, the cost of considering further rainfall conditions should be justified in all cases. (Recomm 11 and 12).

29. We wish for further clarification on the definition of environmentally significant discharges, and the criteria to be used to determine such a discharge. Whilst any test and monitoring regime chosen for testing toxicity of discharge components must be practical and feasible to implement at an acceptable cost, we must point out that environmental quality objectives for controlled waters already take toxicity into account. (Recomm 16).

30. The same term used as a criteria to determine which discharges could be subject to continuous monitoring techniques, also requires further clarification. Continuous

monitoring could only be viable for particular parameter tests, namely TOC and turbidity,. Not only does such monitoring have legal and public relation implications for discharges, but possible cost implications too, particularly where the NRA wish for the equipment's accuracy record to be independently checked. (Recomm 24 and 26).

* * * *

Industry is fully in support of the NRA intentions to establish a national discharge consent and compliance policy, which is both environmentally effective and feasible and practicable to implement. Whilst we welcome the NRA proposal for regular and consistent liaison with dischargers, we remain concerned over the paramaters used for assessing consent compliance, limits chosen for discharge constituents, and the more towards continuous monitoring. We would welcome further consultation with the NRA on these matters.

Ref: PS/145/RH

COUNTRY LANDOWNERS ASSOCIATION

2nd October 1990
AFL/kjg/WAP/7

04 OCT 1990

Dr R J Pentreath
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

Dear Mr Pentreath,

Re: "Discharge Consent and Compliance Policy: A Blueprint for the Future"

Thank you for your letter of 26th July enclosing a copy of the above report and inviting our Association to comment.

We welcome the decision by the NRA to review and revise the present discharge consent procedure and policy, which, as the report acknowledges, is very much the result of patching and amendment over a period of nearly 40 years.

We do not propose to comment on all the recommendations but we particularly welcome those relating to control over discharges from sewage treatment works. Riparian owners probably suffer more from the sewage pollution of rivers than other sectors of the community. Moreover there is certainly a feeling of considerable injustice at the disparity of treatment as between farmers and sewerage undertakers in regard to pollution. In particular the fact that water authorities and sewerage undertakers have been given relaxed discharge consents in recognition of the lack of investment in their treatment works contrasts sharply with the position of farmers who, as a result of Government and EC control over product prices, cannot afford to finance improvements in their control structures. We hope that the sewerage undertakers will be kept strictly to the timetable set by the Secretary of State for the improvement of sewage treatment works and that the present relaxed conditions will be brought to an acceptable level as quickly as possible. The aim must be to set absolute limits which will ensure that the receiving water is at all times capable of maintaining a healthy fish population.

Individual recommendations of a general nature which we specifically support are:

Recommendation 1 - the provision of resources to analyse and publish data about consents, and sampling results.

Contd..

Belgrave Square, London SW1X 8PQ Tel. 071 235 0511 Fax 071 235 4696 Director-General: Julian A. Anderson

2nd October 1990
AFL/kjg/WAP/7

Recommendation 8 - numeric consents should include absolute limits.

Recommendation 18 - the discharger should be made aware of sampling results.

Recommendation 32 - formal Action Warnings should be introduced.

Recommendation 33 - the recommendations should be implemented on a catchment basis.

Our main concern however naturally relates to the policy and procedures affecting landowners, farmers and rural areas generally. We offer the following comments:

1. Paragraph 33 of the report suggests that surface water drainage should be subject to discharge consents if there is a possibility that the discharge may be polluted. This causes us considerable concern since virtually every outfall from a field drainage system may at times be polluted either by organic matter (slurry, manure or sewage sludge) or by agro-chemicals which remain in the soil (for example after a dry summer) and may be carried through into field drains or ditches in autumn or winter rain. There are tens or, more likely, hundreds of thousands of outfalls or discharges in this category and it would be quite unacceptable for them all to be subject to the consent procedure. We think that it should be made clear that such outfalls require consent only in special circumstances and that those circumstances should be clearly defined in NRA guidelines to be agreed with the CLA and NFU.

2. We fully support Recommendation 4 in relation to septic tanks, but we stress the need for the proposed leaflet to be couched in terms which will clearly indicate to householders and farmers the precise circumstances in which a consent will be needed. As a corollary to this recommendation we assume that where, as a result of the new guidelines, existing consents are found to be unnecessary the dischargers will be informed accordingly and the consents revoked.

3. We feel very strongly that numeric consents are not appropriate for farm effluent or septic tank discharges. It is a fundamental precept of law that it should be framed in such a way that those persons who are subject to the law can reasonably be expected to understand what is required of them. It has been brought to our attention recently that a number of existing consents for farm effluent are in numeric terms with references to permitted levels of BOD and suspended solids. These terms mean nothing to the farmers concerned, but even if they understood the terms they would have no way of knowing (other than by taking regular samples and having them analysed) whether their discharge was within the permitted limits. We consider therefore that

Contd..

2nd October 1990
AFL/kjg/WAP/7

all farm effluent consents should be in descriptive terms - specifying for example the treatment to which the effluent should be subjected before discharge and the regular maintenance which should be carried out. Where appropriate the maximum number of animals which the system should carry could also be specified. We must emphasise that our members feel most strongly on this point and we hope therefore that the NRA will accept it.

4. We assume that there will be no question of Recommendation 24 (constant monitoring) applying to farm discharges. Where special circumstances suggest that the fitting of such devices would be appropriate, the cost of fitting and maintaining them must not be unreasonable in relation to the profitability of the business concerned.

Finally, I have been asked to say that while the Association supports wholeheartedly the attempts by the NRA to improve the quality of our rivers, we must emphasise the dangers of the policy of perfection which appears to lay behind the report. Such a policy cannot be applied to any farming activity because virtually all agricultural operations depend upon a whole range of natural conditions which cannot be controlled or predicted. We appeal to the NRA to recognise this fact in developing its policies and procedures.

We do not propose to publish this response, although we may make some references to the main points in published material. We have no objection to its release by the NRA.

Yours sincerely,

A F LONGWORTH
Water Adviser

cc. EC
JAA
TS

P.S. We would very much welcome the opportunity to discuss these points and the proposals for charging for discharge consents with you. I gather that your diary is full for the next 2 weeks and I am then on holiday until 5th November. Perhaps you could suggest a date after that for a meeting?

DERBYSHIRE
County Council
Supports Nuclear Free Zones

John Raine
County Director
County Offices
Matlock
Derbyshire DE4 3AG

Telephone Matlock (0629) 580000
Extension 7372
Ask for Mr R Brown
Our ref RB/44
Your ref
Date 30 October 1990

31 OCT 1990
2680

Dr J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

Dear Dr Pentreath

Discharge Consent and Compliance Policy A: A Blueprint for the Future

At its meeting on 24 October 1990, the Planning and Countryside Committee considered the above document.

The Committee welcomed in principle the recommendations of the report and made the following comments:

a) There needs to be full consultation with all interested parties to ensure that standards are generally acceptable.

b) Recommendation 5: Discharge consents should include measures to control foaming and colouration where appropriate.

c) Recommendation 8: There is concern to know the criteria by which the absolute limits will be set. Members of the Committee seek reassurance from the NRA that the exercise will not lead to a further relaxation of consents. It is understood that absolute limits will be set locally by the ten NRA Regions. In view of this, it is suggested that national guidelines should be prepared to ensure that there is consistency in setting these limits throughout the Regions.

d) Recommendation 29: Whilst it is accepted that other factors besides sample results, such as the co-operation of companies and planned improvements, will affect decisions to prosecute offending firms, it is considered that the NRA should take strong action to tackle cases of pollution swiftly and effectively.

I should be grateful if you would inform me of any changes which are made to the report's recommendations as a result of consultation with interested bodies so that I can keep the Planning and Countryside Committee informed of progress.

Yours sincerely

John Raine

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FAX: (Group 3 Auto) St. Austell (0726) 623019

MJP/DMR

30 October 1990

Q.L. Gray, Esq.,
Secretary and Solicitor,
National Rivers Authority,
South West Region,
Manley House,
Kestrel Way,
Exeter EX2 7LQ.

Dear Mr Gray,

DISCHARGE CONSENT AND COMPLIANCE POLICY:
A BLUEPRINT FOR THE FUTURE

Following upon our earlier discussions in the Regional Rivers Advisory Committee I would like to record the following comments upon the Recommendations made in the Kinnersley Report.

Recommendation 1 I would not recommend that the Authority should publish "estimates of the degree of compliance among those regularly sampled." In my view estimation will lead to data being incomplete and will allow for a misleading interpretation to be made.

Recommendation 3 I accept the importance of removing any scope for misunderstanding but consider it essential that any determinand should be clearly specified in the consent. If the Authority should seek to require a control of any kind then it should be clearly identified from the start.

Recommendation 9 To give proper effect and support to such a statistical approach, a statement concerning sampling will be required. This, I consider, is necessary to give validity to the basis.

Recommendation 10 Generally, determinands should be set having regard to the ability of the receiving waters to accommodate the discharge.

Recommendation 13 I consider that care should be exercised in the application of this principle. It may be reasonable to contain and control substances that may be released in such conditions because of the activity of the quarry process over which the surface run-off passes. However it would appear to me not to be reasonable to expect the controls to extend to the limitation of elements that would otherwise naturally be released from the ground.

Recommendation 15 I accept the suitability of TOC but would emphasise that turbidity is not a satisfactory measure with which to determine a consent condition for mineral workings.

Recommendation 17 This is acceptable as a general principle provided that no unreasonable costs are imposed upon Industry to allow for it. Essentially for the safeguard of sampling staff as well as quarry management, agreed routes of access to sampling points should be determined and maintained.

Recommendation 18 The provisions for continuous monitoring are reasonable provided that the Authority has full regard to its cost. It is frequently used in this Industry at present to monitor flow, temperature, ph and suspended solids but even so it is very expensive both in site work and equipment. If the aim were to extend such monitoring to many other elements then the costs would become exorbitant.

Recommendation 27 I welcome the principle that the Authority should indicate clearly which data they will or will not rely upon as evidentiary. I understand and sympathise with the concern that many dischargers have concerning the perceived danger of prosecutions arising from their own monitored data passing into the public domain.

Recommendation 29 I welcome and support this approach.

Recommendation 30 I object to this proposal as it would not be suited to the management systems used predominantly in this Industry. The day to day site management will be shared by a number of managers as china clay production is a continuous operation. Therefore for good liaison between Authority and Company as well as to allow for the better control internally, all formal notifications should be to a particular Officer or to a Company Secretary as may be agreed in liaison between the parties.

Recommendation 32 I am not convinced that a formal Action Warning of this nature is either necessary or appropriate. Warnings can be given in the "on site" contacts made by Pollution Inspectors or in normal correspondence between executives of the Authority as a public organisation and a discharger. The problems would be compounded if details of formal Action Warnings were to be entered upon the public register.

Recommendation 33 I strongly support this principle and would advocate that it should be given a first priority in the matter of consent and compliance policy.

I trust that these comments will assist further consideration of these matters.

Yours sincerely,

M.J. Pemberton.

Dr. M.J. Pemberton

1042
31/10

ENVITECH Ltd.
Branton House,
1a. Gower Street,
Cathays,
Cardiff. CF2 4PA.
Tel: 0222-229982
Fax: 0222-229993

ENVITECH *Innovation in Environmental Technology*

ational Rivers Authority
30-34 Albert Embankment
London
E1 7TL

Date 30/10/90

Dear Sirs,

Re: NRA Report, Water Quality Series No.1, "Discharge Consent and Compliance Policy: A Blueprint for the Future" - July 1990

have received a copy of the above report and studied it's contents closely. We would like to make some comments on it and it's recommendations which we hope will be viewed constructively and included in your evaluations and consultations regarding future policy.

We would firstly like to make some general points before moving on to specific aspects of the report:

We as a company specialize in the supply of innovative new technology applicable to on-line monitoring of liquid effluents for a variety of parameters. Hence we feel our experience and data obtained in this particular field could be valuable to the NRA. We welcome the acknowledgement that automatic on-line monitoring would be a significant step forward particularly for environmentally sensitive discharges (Recommendations 24-26). At present we are exclusive UK agents for a range of instruments as developed and manufactured by Siepmann und Teutscher GmbH in Germany. This range of instruments includes:

- BIOX 1000 on-line BOD monitor
- Phoenix on-line COD monitor
- STIPTOX on-line toxicity monitors

The first BIOX-1000 instrument to be installed was in Germany in 1983, the first in the UK in 1987 and now there are over 300 in operation throughout Europe. The BIOX-1000 was developed as a result of a German government sponsored project to measure the BOD in-situ within a river bed on a continuous basis. However, it proved not possible to obtain in-situ the reproducibility required and so the BIOX-1000 was designed to provide a constant, computer controlled environment. The result of this project was an instrument capable of providing a BOD in 3 minutes with a precision ten times that of the BOD5 test, an NRA officers dream! In addition, a feature which perhaps is as important as the test itself, the designers were able at the outset to construct the sample handling and analytical sections of the instrument specifically with waste effluent streams in mind with a result that approximately an hour per week or two weeks is all the maintenance required when monitoring wastes even when they are as potentially difficult as crude sewage.

Company Registration No: 2404718
Registered in England and Wales
Regd. Office: The Grove, Gelliha, Blackwood, Gwent. NP2 2QE

Directors:
C. Genner BSc. MSc. PhD. M.I.W.E.M.
J.G. Pickering BSc. MSc.

We accept that this trial was far from ideal in assessing the relevance of replacing BOD with TOC but perhaps gives a helpful insight into the problems that will be found.

Within paragraph 83 the recommendation that a 4 year period of parallel assessment of various parameters is suggested before any recommendations are implemented. This seems an eminently sensible course of action based from our experience.

Some of the Water Service companies appear to be carrying out this kind of assessment. We have just received orders for a number of instruments from such a company for mounting in mobile monitoring stations alongside other instruments, including TOC, such that in depth studies can be carried out.

It has to be said that variation between these methods is logical, since inherent correlation is to be expected between a chemically and a biologically based oxidation measurement (Jones 1972). We also have to say here that most, if not all of the NRA personnel we have had discussions with, would agree with our views on the limitations of TOC as measurement.

If we consider the discharge from a municipal sewage treatment plant, a typical consent limit on BOD may be 20mg/l. Such an effluent may have a COD of 100mg/l on average since virtually all remaining carbon is by definition somewhat recalcitrant and resistant to biological attack. Major problems may occur in the receiving water course if the BOD rises to 30mg/l. Such a change may not cause any significant change in the COD of the flow. Therefore the definition of the COD test, as an assessment of the effect of a discharge upon a water course, is totally unsuitable for its protection. The same would be even more true for a TOC value as it is based upon assessment of a very similar parameters.

The TOC method gives a measurement of the organic carbon content of a pre-treated sample. Pretreatment usually takes the form of filtering out solids. This filtering step requires considerable operator input in order to maintain satisfactory operation. The result provided by the instrument therefore effectively refers to the soluble fraction and not the whole sample. This obviously has implications on interpretation of the result.

It is largely recognized that the BOD of sewage effluents is primarily due to suspended flocculated bacteria indicative of impaired plant performance most of which would be filtered out before analysis and not measured by TOC equipment. It would be ironical indeed that so-called automatic continuous monitoring would actually fail to measure a large proportion of the organics that would otherwise cause compliance failure.

Paragraph 80 claims that TOC is adaptable to on-line use unlike BOD. Practical considerations when compared with the Siepmann & Teutscher equipment means that it is much less adaptable. The development of these instruments has also overcome many of the shortcomings of the conventional BOD5 test, as is seen in Table 3 :

Table 3: Comparison between on-line TOC and BOD-M3 techniques

TOC	BOD-M3
Chemically based	Biologically based
Variable correlation with exisiting BOD-5	Good correlation with existing BOD-5
Continuous measurement - analysis time 3-10 mins	Continuous measurement - analysis time 3 mins
Maintenance variable due to:	Low maintenance due to:
- ultra-filtration required down to 50 microns as an additional extra and hence only soluble organics measured	- self flushing sample included to 0.5mm which does not effect correlation with Lab based test
- very small sample flow	- large sample flow through 1.25" plastic pipwork
- small diameter tubes for analysis (1-2mm i.d.)	- large diameter analysis pipework (8mm i.d.)
Reproducibility +/- 2-3%	Reproducibility +/- 2%
Reagents/ carrier gas required	No chemicals/ reagents required

These changes, together with the sample handling system, make the test more reliable than any TOC equipment and provide a result much more meaningful in terms of protection of the environment.

One of our customers recently commented that having installed on-line BOD monitoring it was evident that their treatment plant was regularly going out of consent over night. On reporting this the operator was told that since the composite samples taken for BOD-5 analysis and the regular daytime spot samples did not show this up it need not concern him! On-line monitoring could be a significant step forward in protecting our environment but without the will and pressure to act when limits are exceeded such techniques are turned simply into public relation exercises.

Increasingly in Germany it is recognized that on-line measurement should not just be used for monitoring but as an operational tool to improve the treatment process and actually reduce the requirement to monitor in the first place. Many occurrences of breach of consent can be traced back to a shock load from an industrial discharger to a municipal plant. On-line BOD monitoring on the inlet could, and is being used, to balance the load and so ensure a consistent F/M ratio. The NRA should recognize the real problems of treating waste from diverse, difficult to

quantify sources, and encourage the installation of such on-line instruments and other technology that will aid consent compliance by improving consistency and treatment efficiency.

Other alternatives e.g. UV Absorption methods provide no indication of inhibition or changes in chemical composition. Again the correlation with BOD5 is unproven and the effects of the necessary pretreatment put the value of the determination into serious doubt.

Paragraph 84 - Here the suggestion is made that certain high risk discharges should be monitored periodically for toxicological effects. We would suggest that such discharges, often by definition variable in nature, should be equipped with on-line toxicity monitors such as the TIPTOX instruments. These could be linked by telemetry systems to divert facilities (in addition to NRA telemetry systems) such that toxic discharges to water courses could be prevented.

Many other parts of the report would receive our support, e.g.:

- Encouragement of industrialists to be involved on a voluntary basis in on-line monitoring and see its use as a benefit (Rec.24 Para 121).

- Tripartite sampling should continue (Rec.25)

- Introduction of "Action Warning" system.

If we can summarize the main points covered in the above:-

1. The recognition of the benefits of automatic continuous monitoring is to be welcomed.

2. We accept the limitations of the present BOD-5 test but feel that the recommendation to replace it unilaterally with TOC would be a detrimental step for the protection of our environment since the biodegradability of the discharge would not be measured.

3. The design and construction of on-line TOC equipment and the requirement for ultra-filtration (50 microns) make it unsuitable for many waste streams and maintenance will prove to be labour-intensive. We are aware of some users of TOC equipment who have now replaced them with BOX-1000 units because of maintenance problems. In addition the BOD-M3 measurement at this site is accepted by the regulatory authorities in Germany for consent purposes.

4. On-line measuring equipment for BOD has been available for several years and since such equipment has been purpose built with waste streams in mind has proven it's reliability, accuracy and low running costs. The BOX-1000 on-line BOD monitor provides a result within 3 minutes which is approximately ten times more precise than the BOD-5. The Welsh NRA, having successfully tested the instrument, have included it's on-line measurement in one of the tightest consents within the UK.

5. We welcome the consultative nature of the report and the suggested 4 year evaluation period. However we have recently found that many see the report rather as statement of intent and as a result on-line monitoring using BOD or COD is being considered not relevant. Even though the industrialist often recognizes the benefit of using the best technique for the protection of the environment, and is willing to pay for it, it is ironical indeed that he is being deflected by the very organisation responsible for such protection!

Could we again emphasize that we welcome the initiative taken by Lord Crickhowell and the NRA. We would only ask that full account is taken of the kinds of points made above, points which have been wholeheartedly echoed by many NRA personnel we have spoken to on this matter over the last two or three months.

We look forward to further discussions and to your response to the above.

Yours faithfully,

Dr. Colin Genner

Jim Pickering

References

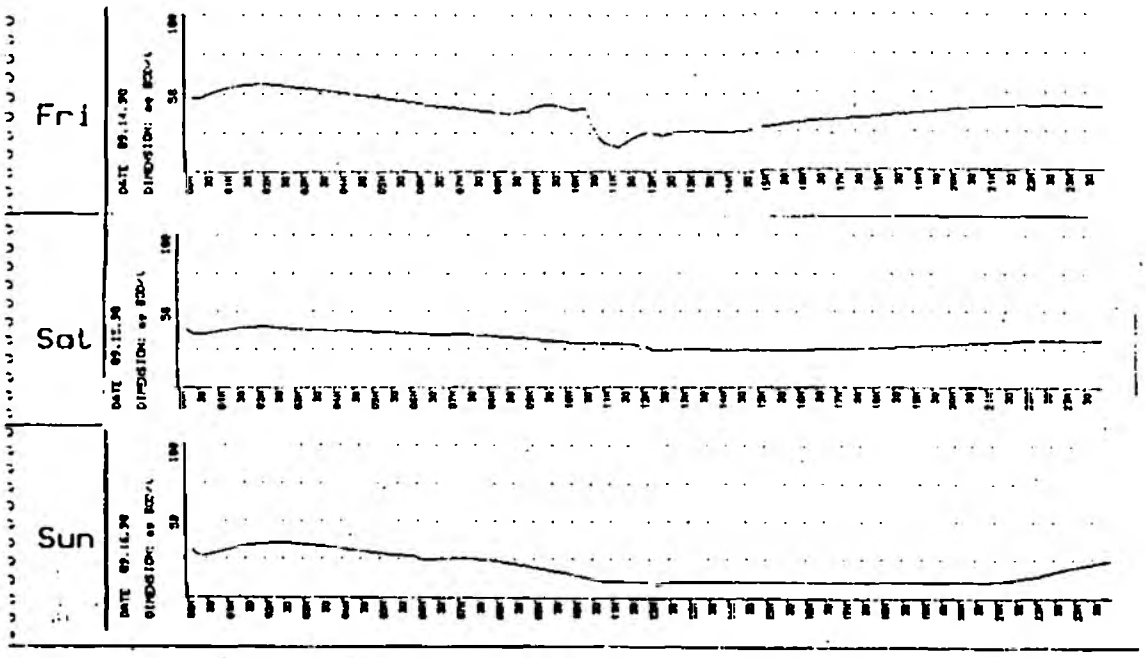
Bealing, D.J., "The five day Biochemical Oxygen Demand (BOD(5)) Test: An Appraisal and Possibilities for Replacement", WRc Report PRU 1954-M, October 1988.

Davies, E.M., " BOD vs COD vs TOC vs TOD", Water and Wastes Engineering, (1971), Vol. 8, p38.

Jones, R.H., "TOC: How valid is it?", Water and Wastes Engineering, (1972), Vol. 9, p32.

Fig A: Typical chart output from the BIOX-1000 at
A) Discharge from STW B) Inlet to STW

A) Discharge from STW



B) Inlet to STW

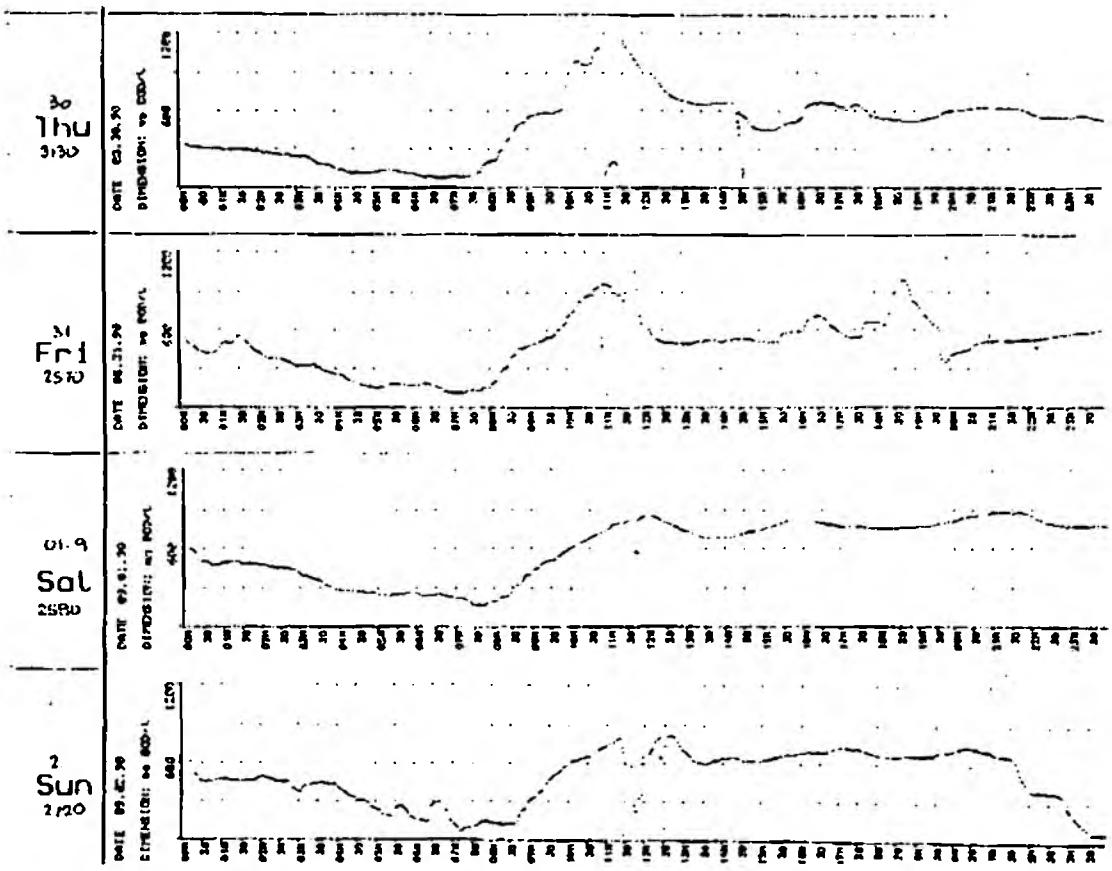


Fig.B British Tissues/Welsh Water Trial
Comparison of BOD-5, BOD-M3 and COD

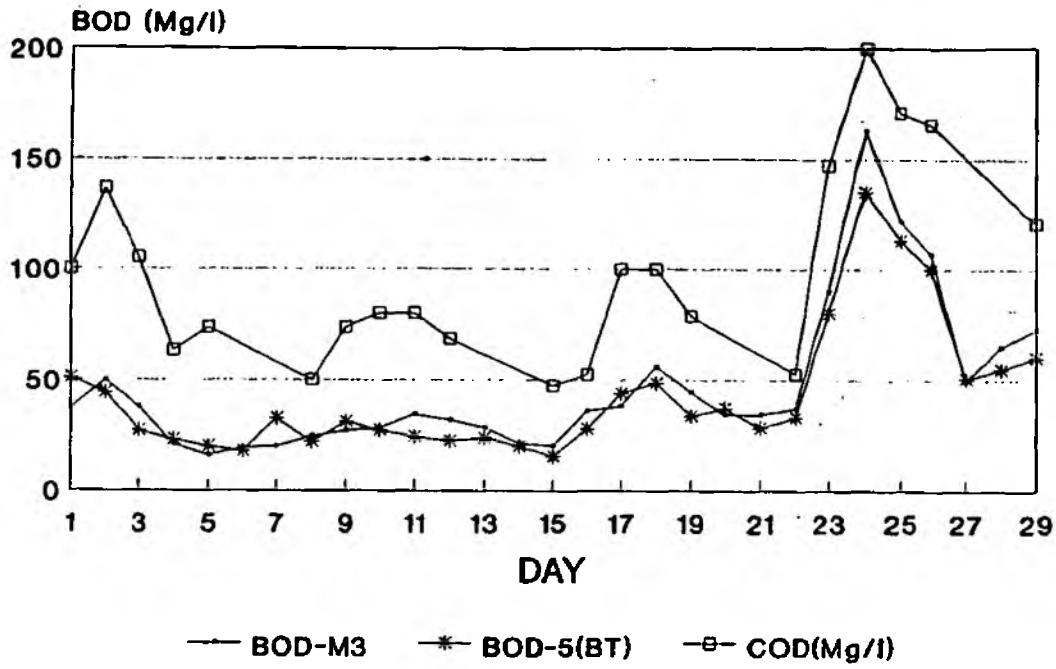


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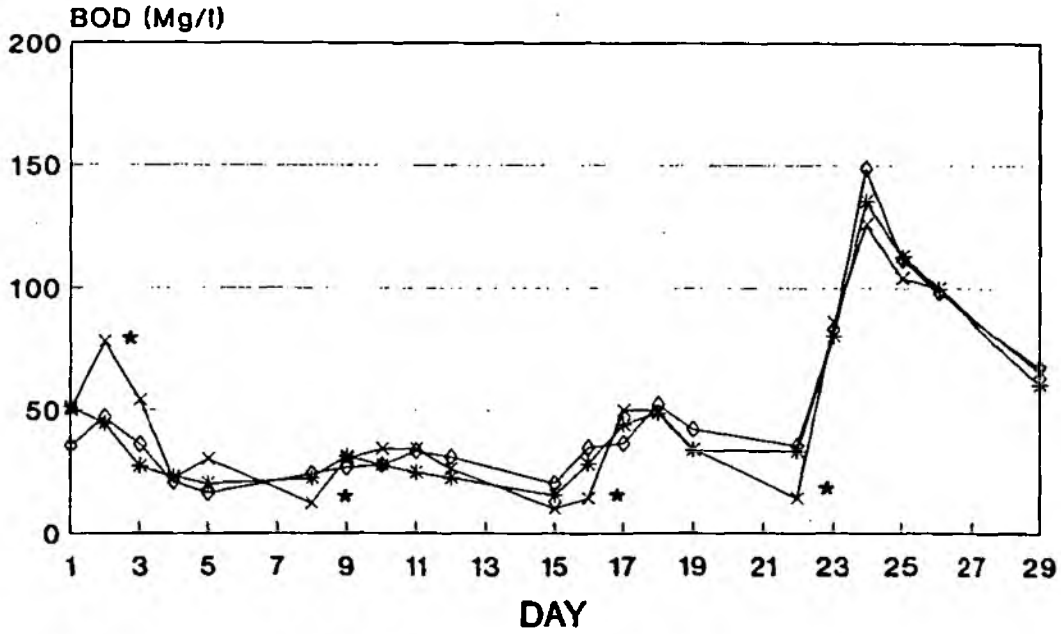
Fig.C British Tissues/Welsh Water Trial
Comparison of Actual BOD-5 with predicted values



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Friends of the Earth

31 October 1990

2492

R.J. Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

Dear Sir

"Discharge Consent and Compliance Policy: A Blueprint for the Future" - Friends of the Earth's Response.

We enclose our consideration of the report, and thank the NRA for the opportunity to submit comments.

Currently, we have no specific intention to publish this submission, but neither do we regard it as confidential. Therefore we have no objection to our response being made publicly available.

Numbers below refer to the paragraphs or recommendations as numbered in the consultation document. The summary of our explained position appears in the indented paragraphs.

Availability of Data

Paragraph 26 and Recommendation 1:

The "aggregation and analysis of data..." and "a better degree of public information and accountability" would be facilitated by totally computerising the public register data, which could be amalgamated at the headquarters of the NRA in London (or presumably some other designated location).

We have no objection to the recommendation as such, but would also add that publication of summary data (such as "estimates of the degree of compliance") should not preclude improvement to public access to raw data. If the suggested aggregation of data occurs, we can see no reason for not improving the public's access to the entire set of information and data from all regional and district offices via computer.

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The NRA should work towards improved public access to public register data, which should be coordinated with any unification or aggregation of computerised data or facilities.

Information from Dischargers

Recommendation 2:

This should go further. We are aware that currently consents may be reviewed only very infrequently, if ever, and that anachronisms can exist. For certain industries where changes in processes may be relatively frequent, then it would be reasonable to place decisions about the "scale or character" of the discharge beyond the judgement of the discharger and attach a consent condition which demands an annual return.

In some cases, consents for discharge should incorporate clauses requiring the discharger to submit annual returns on the nature of the discharge.

We note that the issue of consents to discharge allows for public participation. As shown to us, many of the applications for sewage treatment works variations in 1989 omitted considerable amounts of information which we thought necessary for consideration of the consent, such as dilution of the discharge in the receiving water or details of discharges of List I substances (handled by the Water Authorities and Her Majesty's Inspectorate of Pollution). Public accountability is hardly advanced by such omissions, and, in future, both the NRA and the discharger need to assure the public that all information will be disclosed.

Application forms should be designed so that both the discharger and the public understand the forms. An accompanying leaflet might fulfil this condition, if the redesign of the form proves awkward.

The public should have access to all the data on which the NRA bases decisions for consents to discharge.

Marine Outfalls

Recommendation 5:

The assignment of "specific and unequivocal" terms for "facilities and processes" in consent conditions only informs the public of the final decision. If to be of real public accountability, the National Rivers Authority should be involved at the design stage for any new works which will require a consent to discharge, and the considerations should be available for public scrutiny. Since the design should facilitate achievement of the desirable standards, the designation of those standards should surely precede the design phase, and should be explained in the consent conditions. Currently, it is not always clear whether the

design (including cost considerations) is setting the standards or the standards are imposing the design.

> **Where design and performance specifications are included in the consent conditions, the NRA should be involved at the design stage. Arrangements must also be made to allow public scrutiny and explain arrangements for monitoring and enforcement.**

Descriptive Consents and Maintenance Obligations

Recommendation 6:

If maintenance records are to be used for judging compliance with consent conditions, it follows that the public should also have access to such records. This is not the case now, even though the descriptive consents for sewage treatment works have clauses with respect to maintenance and operating procedures. This recommendation should be revised to make clear the procedure for public accountability both in terms of access to data and methodology for judging compliance.

Existing descriptive consents (at least for sewage treatment works) are notably lacking in enforceable conditions. The lack of any prosecutions for non-compliance with a descriptive consent or even inclusion in summaries of estimates of compliance also supports our contention that it is difficult to monitor compliance. Existing descriptive consents for sewage treatment works contain phrases such as "promptly", "as soon as possible" and "reasonably practicable", which make the consents unenforceable due to room for interpretation of these clauses.

Currently, although it is stated that descriptive consents apply to "discharges of minimal environmental significance", we are not aware of any guidelines as the required dilution. We see no reason why a small discharge into a small stream has necessarily less significance than a large discharge into a large stream. Dilution requirements, as well as population equivalent requirements, should be applied.

On descriptive consents for sewage treatment works, a House of Commons Environment Committee stated:

> "There is no way of judging effectively whether their effluent is satisfactory or not" (Third Report from the Environment Committee, Session 1986-87, Vol 1, HMSO, note 58, para 25, p xvi).

We also note that Government policy has stated that:

> "- standards and conditions imposed in consents should be clear and the criteria for compliance unambiguous;" ("The Water Environment, Policies and Procedures for the Control of Water Authority Effluent Discharges", statement by the DoE/WO, 29 January 1985).

The NRA should review the whole system of descriptive consents for sewage treatment works, and either convert the descriptives to numerical standards or incorporate far more clarity as to the judgment of compliance.

Absolute Limits

Recommendation 8:

We support the notion of absolute limits for all relevant determinands, but would emphasise, as discussed in the consultation document, that these should accompany percentile limits and not replace them (as per Recommendation 9).

Absolute limits should accompany percentile limits.

Percentile Limits

Recommendation 9:

During the recent Department of the Environment/HMIP review of consent conditions, some sewage treatment works were given long-term consent conditions which included a defined 12-month period with respect to use of the "look-up" table (eg, Aberdaron STW, Welsh Region, April 1 - March 31), rather than a rolling time period. We have not been informed of the rationale for this, but believe this practice should not be continued, and that all such consents should be revised. With a non-rolling time period, an effluent could be quite unsatisfactory for a year, but if that year fell into two time periods, the NRA's scope for legal enforcement of satisfactory standards would be curtailed. The system could also be open to abuse by a discharger who could manipulate effluent quality, knowing that any measurements would only have relevance in a particular time-period and not necessarily for a future twelve months.

The achievement of percentile performance standards and the use of the look up table should relate to a rolling time period, and not restricted to a defined twelve month period. All consents using time periods other than on a rolling basis should be revised.

Numeric Transitions

Paragraphs 65-67:

The procedure for any revision of consent conditions must be absolutely transparent in order to reassure the public that the revision is indeed truly "neutral". A truly neutral revision would also exclude the "rounding-up" of numbers, which we would decry in any case as a presumption in favour of the discharger rather than the receiving environment. However, this would have even more impact with 80 percentiles than with 95 percentiles. For example, if we consider Figure

The claims concerning the performance of the BIOX-1000 were greeted with some degree of scepticism in the UK as is shown by the quote from a WRC report (Bealing, DJ, October,.1988) " the information presented which compares results with BOD(5) has perhaps been selected to show the device (BIOX-1000) in the best possible light..."! However others in the water and waste industry have since been suitably impressed by the performance of the BIOX-1000 and to date, ten instruments are operating including some for fully treated domestic and trade effluent monitoring.

In fact, the Welsh Division of the NRA has to some extent led the way in the UK and written a new consent for a South Wales paper works which requires on-line monitoring of the BOD at the discharge point to the river. This function is now being carried out by a BIOX-1000 BOD monitor. This development only came about after extensive on-site trials carried out under the control and in conjunction with personnel from the then Welsh Water Authority, some of whom are now with the NRA. Also as a result of this successful trial, Welsh Water Services now use a trailer mounted BIOX-1000 for investigation of sewage treatment plant performance with great success (typical charts, see Fig.A).

With this background we find it surprising, to say the least, that the feasibility of on-line monitoring of BOD in general, and these instruments in particular, are not even mentioned in this NRA prepared report.

Although we obviously have a vested interest in this matter we hope that our views will be interpreted as being based on our scientific backgrounds and on the data referred to, particularly as it is based upon independently sourced information, and indeed, information in many cases prepared in conjunction with the Water Authorities or the NRA itself.

The general premise and raison d'etre for the report can only be supported and welcomed. We feel that any debate of this sort should only improve the potential protection of our environment and people's awareness of their effect upon it. However we feel that the form of the report may have already caused some problems. Having read the report carefully, many of its recommendations are to be wholly welcomed, particularly the consultative nature of the report. One of the report's major recommendations is that for a period of four years various determinands should be evaluated before any changes are implemented (see Recommendation 5). The document is unfortunately being used and quoted as though the debate and this evaluation period have been completed. Certain instrument manufacturers are quoting the report recommendations in order to promote sales of their instruments. We think that one of the reasons for this is that in Lord Crickhowell's preface he says that the report "provides the basis for consultation". However he then goes on to talk about implementation of the report's recommendations. Surely this decision as to whether the recommendations do become implemented can only be made following the results and consensus of these consultations.

In the following, response to specific clauses of the report is presented.

Executive Summary

We think that the only points we would comment on are in paragraph 2. 2(i) states that the compliance of industrial dischargers should change from "percentile" to "absolute". We would argue that the only way of ensuring total "absolute" compliance is to introduce on-line continuous monitoring. Paragraph 2(ii) goes on to recommend substitution of BOD with TOC. Our comments on this are presented below.

Paragraph 2 recommends the provision of continuous monitoring. This must be applauded but selection of the parameters to be monitored is paramount. If the wrong determinand is selected enforcement will be impossible. This concerns both the interpretation of the determinand and also the method and reliability of it's measurement. Adaptation of certain measurements into on-line determinands does with some instruments include a requirement for unreasonable levels of maintenance. Such aspects must be included in the decision such that the recommended parameters can be measured continuously and precisely with minimum "down time". Relevant to this is the view of certain senior NRA personnel that TOC for many applications would be totally unenforceable.

Chapter 1 - The Policy Group on Discharge Consents and Compliance

Paragraph 2 - This contains the sentence "Most of these uses (of rivers) depend on sustaining the natural health and ecology of water and in the open environment". The key words are "natural health" and "ecology" which are biologically based factors not chemical. Therefore assessment of possible changes should also include biological aspects.

Chapter 2 - The Context of this Report

Paragraph 9 - We accept that changes in the consent system have been made in a piecemeal way and of course attempts to rationalize strategy must be welcomed. However, some assessment of these past changes and the experience obtained could provide a useful data source to decide on future changes. We would draw attention to the implementation of an on-line BOD consent by the Welsh Division of the NRA as a good example of those changes which although implemented locally, may in fact prove invaluable and become implemented on a broader front.

Paragraph 12 - This refers to a National Water Council report published in 1978 which recommended linking consents to the use the river is to be put. Should some consideration also be given to the water content of the river at any time i.e. designing variable consents related to river flow? This would be sensible in certain circumstances rather than always relating discharge to dry weather flow.

Chapter 3 - The Purposes and Types of Consent

Paragraph 23(i) - This states that consents must be designed in order to prevent damage to receiving waters at all times. This "damage" as stated earlier would be primarily manifested by a biological effect and as such a biologically based determinand should be retained.

Paragraph 23(ii) - A consent must include aspects which will allow legal enforcement. If only chemical determinands are included in a consent, enforcement would be extremely difficult if there are any anomalies or ambiguities existing in the test method. Such anomalies could include removal of certain components, such as suspended solids, prior to the measurement as required by many on-line methods, or if toxic components are present.

Paragraph 32 - As specified by the Water Act, it is an offence to discharge any toxic component to a controlled water course unless you have a consent to do so. Some consideration of on-line toxicity monitoring should be given for certain high risk discharges.

Chapter 4 - Defining Limits

Paragraph 47 - There are many anomalies existing where consents are at present expressed only in terms of concentration. We therefore welcome the move to pay more attention to pollution load discharged. In one case a paper works has a consent to discharge around 35,000m3 per day at 250mg/l BOD i.e. 8.75 tonnes BOD/day. If they recycle more water, the volume discharged falls and the concentration will consequently rise. Even though the load does not change and is still well within 8.75 tonnes/day they exceed consent on concentration. This is an unfair situation which should be addressed. However enforcement of such revised consents will require accurate methods of assessing concentration and flow.

Paragraph 56(iv) - Emphasis is placed upon the nature of the variations of effluent quality. Such data can only be sensibly provided by use of reliable on-line monitoring of the relevant parameters.

Paragraph 57 - In general it seems very sensible to incorporate both percentile and absolute factors into a consent. But if the consent is to be enforced only on the basis of spot samples considerable thought needs to be given to designing the sampling strategy. In the past sampling frequency has left a lot to be desired.

Paragraph 66 - If exercises such as that described in this paragraph are to be of any value they must be based on large quantities of data. On-line monitoring would provide such data.

Chapter 5 - Limits to Flow and Choice of Determinands

Paragraph 78 and 79 - These paragraphs concern a discussion of the conventional BOD5 test and its limitations. Considering that the issue of replacement of BOD5 is one that raises much concern we feel that the paragraphs show a rather poor summary of the limitations of the BOD-5 test. A far better understanding is in fact found in the WRc report referred to (PRU 1954 M October 1988). Certainly it has to be accepted that the conventional BOD-5 test is open to many criticisms and has many limitations . However, to quote this WRc report and in the very next sentence to suggest the replacement of BOD by TOC is, we feel, very misleading. The statement "many effluent have a consistent relationship between BOD and TOC" is very controversial, not the least that the very WRc report closely referred to contradicts this "these relationships (i.e.TOC/BOD/COD) are unique to particularly sewages and the variable nature of sewage makes them unreliable". Many papers quote significant variation in BOD/TOC ratio (Jones 1972, Davis 1971). We agree that the BOD-5 test as a measure of the deoxygenating capacity of an effluent is an "over simplification" but it is the <u>only</u> test which attempts to assess this aspect based upon a biological effect. Furthermore as stated within the WRc report " oxidation events in situ are probably better reflected by BOD-M3 than by BOD-5".

The paragraph 80 "acknowledges" that TOC is no more useful than BOD for oxygen modelling. Surely since it takes no account of the form of the carbonaceous pollution and it's potential biodegradability, TOC is of very little use as an indicator of oxygen capacity <u>unlike</u> the BOD test.

The ratio of BOD to the other parameters is an area worthy of further discussion. The point is well illustrated by a trial performed by an industrialist, Water Service company and ourselves, to evaluate the correlation between the on-line BOD-M3 measurement and BOD5 and COD laboratory analysis.

Results of the study carried out with the cooperation of the Welsh Water Authority at the paper mill in South Wales are shown in Figure B. Presented are daily traces of the BOD5 values of the effluent flowing to the river as analyzed by the Paper Company laboratory and by the Welsh Water laboratory. Also shown are the results of the measurement as provided by a BIOX 1000 on-line BOD monitoring instrument.

As is evident excellent correlation is demonstrated between the instrument and the paper company results, R= 0.92. Welsh Water later admitted that discrepancies between these results and those from their laboratory were in all probability caused by the practice of storing samples for several days and only setting up the tests on Wednesday, Thursday and Friday in order to avoid the need for weekend working.

This exercise proved that good correlation can be obtained between the output from the instrument and conventional laboratory BOD5 analyses. Perhaps even more importantly the trial with BIOX-1000 proved the claims of low maintenance and ease of use. As stated above the paper company has now purchased an instrument and the Welsh NRA has been so convinced of the validity of its output that it has been written into the consent

document as a requirement of the consent. As far as we are aware this consent is one of the tightest in the U.K. and the use of such on-line technology is a significant step forward in the protection of our environment. Again we are surprised that no recognition is given in the report to the lead that the Welsh NRA has taken in this.

This data also shows some of the limitations of using an agreed ratio of a chemically based test such as COD to the BOD test in order to predict BOD-5 results. This study was carried out using the laboratory based COD test and samples analysed still contained suspended solids, a significant factor in paper manufacturing effluent. If it had been based on an on-line technique which requires removal of suspended solids, as does the TOC test, even greater discrepancies might be expected.

Table 2 shows the calculated predicted BOD-5 results from both the COD and BOD-M3 analysis compared to the actual BOD-5 results obtained. The average percent variation using COD was 33% while using BOD-M3 the variation was nearly half at 17%. More significantly was that on four occasions if COD analysis had been used to predict BOD-5 analysis, the error would have been greater than 50%, and 140% in one case. Interestingly the greatest errors seem to have occurred with the prediction at low BOD levels. Fig C shows graphical representation of this data.

Table 2: Data showing the use of COD and BOD-M3 to predict BOD-5 results

Day	COD Mg/l	BOD-M3 Mg/l	BOD-5 Mg/l	Ratio BOD-5 /COD	Predict BOD-5 from COD	% Variation	Ratio BOD-5/ BOD-M3	Predict BOD-5 from BOD-M3	% Variation
1	100	37	51	0.51	50	2%	1.37	35	44%
2	137	50	54	0.39	78	31%	1.08	47	15%
3	105	38	27	0.26	54	50%	0.72	36	25%
4	63	21	23	0.36	22	6%	1.10	21	11%
5	74	16	18	0.24	30	39%	1.13	16	10%
8	50	25	22	0.44	12	90%	0.90	24	8%
9	74	27	31	0.42	30	5%	1.14	26	18%
10	80	28	28	0.34	34	20%	0.97	27	0%
11	80	35	24	0.30	34	30%	0.69	33	27%
12	68	32	22	0.32	26	14%	0.69	31	28%
15	47	20	15	0.32	10	59%	0.76	20	24%
16	53	36	28	0.53	14	106%	0.77	34	19%
17	100	38	44	0.44	50	11%	1.15	36	21%
18	100	56	49	0.49	50	1%	0.88	52	6%
19	79	45	34	0.43	34	1%	0.76	42	19%
22	53	37	33	0.63	14	140%	0.89	35	6%
23	147	90	115	0.78	86	34%	1.28	83	39%
24	200	163	135	0.68	126	7%	0.83	149	9%
25	171	122	113	0.66	104	9%	0.93	112	1%
26	166	107	100	0.60	100	0%	0.93	98	2%
29	121	73	61	0.50	66	7%	0.84	68	10%
Averages =				0.48		33.21%	0.99		17.11%
Correlation R2=					0.87			0.92	

1 of the document, a rounding-up of a 95 percentile from 21 to 25 would permit less extra load to be discharged than would the rounding-up of the 80 percentile from 11 to 15.

Neutral revision of consent conditions cannot include the rounding up of figures for numerical convenience.

Any transition from a 95 percentile system to a 80 or 50 percentile system should allow the two systems to run simultaneously, so that data collected while one system is used can also be used retrospectively from the date of introduction of the new system. The transition should not allow dischargers a "holiday", which could happen if it was declared that data collected for the previous system could not be used in the new system, thus interrupting any rolling time period. Whilst we can foresee that a substantial revision of a particular set of consent conditions would necessitate interruption, the "neutral" type of revision ought to allow use of the analytical data collected for compliance under both 95 percentile and other percentile systems.

Any transition to a different percentile system should not have the effect of interrupting the enforcement of compliance.

We also note that many sewage treatment works received relaxations of consent conditions to the achieved standards prior to 1985 (when the public registers were opened); thus, "neutral" revision of standards set in such a way would perpetuate this expedient approach, which set consent conditions according to the effluent quality rather than the receiving water quality. A major overhaul of the consent system would provide good opportunity for review of sewage treatment work discharges, possibly, as suggested in the consultation document, on a catchment by catchment basis.

A major review of sewage treatment works consents should not perpetuate previously granted relaxations of consent conditions.

Paragraphs 61-68:

We are convinced of the need for review of consent levels. In a letter to a representative of Friends of the Earth Cymru, Professor Ron Edwards, Regional Board Member of the NRA Welsh Region, said:

> "We are concerned about the practice of exhausting the capacity of receiving waters to accept discharges..." (letter to R. Davies, FoE Cymru, 11 October 1989).

Currently, it is difficult, if not impossible, for an interested third party to discern the data and calculations used in setting consent conditions. The comments of Professor Edwards above and the comments of the NRA in paragraph 61 of the consultation document suggest that there are certain

stretches where further consents to discharge should not be issued.

Any consent review programme must use fully explained and transparent procedures.

Flow Measurement

Paragraphs 69-72 and Recommendation 11:

The measurement, recording and documentation of flow rates in the public register are essential to the system of monitoring and public accountability when maximum flow rates, maximum loads or flow limits are specified in the consent conditions.

Monitoring of discharges must include measurement of flow rates when consent conditions set standards for flow rates and/or loads, and the data obtained should be entered onto the public register.

Discharges Influenced by Rainfall

Recommendation 12:

Where flow rates are linked to rainfall conditions, it is difficult for the public to assess the significance of any measurements. If such consent conditions are not to be meaningless, the NRA has to judge flow rates for compliance.

Public register entries should be flagged so as to indicate whether the flow rates recorded at a particular site and time are as specified in the consent.

Choice of Determinands

Recommendation 15:

We have considerable doubts as to the suitability of Total Organc Carbon (TOC) as a substitute for Biochemical Oxygen Demand (BOD). While BOD measures oxygen depletion directly (and is therefore of direct relevance), TOC in no way measures oxygen depletion, and the potential for oxygen demand will vary enormously depending on the specific organic carbon compounds present. For one process treating an effluent of constant composition, an equivalence could be established, but its utility under changing circumstances and from site to site will be continually called into doubt. Therefore the need to establish and demonstrate a useful relationship will call for considerable commitment and resources for BOD/TOC parallel measurements. The proposal seems to us to be fundamentally flawed and advanced by expediency rather than consideration of pollution control and monitoring.

The NRA should reconsider the proposal to substitute TOC measurements for BOD assays.

Tripartite Sampling

Paragraphs 91-93:

Friends of the Earth is concerned about the use of both tripartite sampling and percentile compliance. The procedures involved in tripartite sampling are cumbersome and wasteful of human resources, and we have considerable doubts as to whether charging the discharger will fully compensate. The samples are also of limited time value as the relevant properties change, thus in many cases re-testing will not be possible. Since a series of failures in a time period is required (which in itself guards against a non-systematic error), and the look-up table allows the discharger the benefit of the statistical doubt involved in sampling, tripartite sampling is an unnecessary extravagance.

The NRA should seek repeal of Section 148 of the Water Act 1989 with respect to the need for tripartite samples for proving non-compliance with consent conditions which include percentile requirements.

Paragraph 94:

As we interpret paragraph 94, the consultation document is stating that it is possible to present in a court the analytical results of non-tripartite samples, if those results do not form part of the non-compliant samples. However, it is not clear to us whether the tripartite samples should include all those samples which are beyond the 95 percentile (or other prcentile as appropriate), ie, including the allowed failures of the look-up table, or just those samples which would cause the failure of the set beyond the allowed look-up table failures. We request clarification on this, and would also like to ask whether these points have been tested in law. If there is any doubt, the points should be clarified, if necessary with a test case, before firm sampling regimes are established.

The NRA should immediately establish the courts' requirements with respect to tripartite samples.

Continuous Flow Monitoring

Paragraphs 108-112:

The use of continuous flow monitoring, particularly where provided voluntarily by the discharger, raises serious questions about both the public availability of the data and the possibility that the data could not be used in court. The discussion in the consultation document of simultaneous continuous monitoring and more traditional "snapshot" sampling even suggests to us the possibility that the more truly representative continuous flow data (assuming established analytical accuracy) would not be acceptable to a court, while

the percentile compliance method, with accompanying look up table to compensate for the statistical uncertainties inherent in limited sampling, would be used. This would be rather perverse, and we would suggest that the NRA seek new regulations or laws if necessary to reflect new monitoring procedures.

Introduction of continuous flow monitoring should only follow clearly established expectations that the data can be available to the public and used in legal proceedings.

"Discharger" Monitoring and Public Registers

Recommendation 27 and Paragraphs 113-115:

The question of the courts' acceptance of data from the public register as evidence should be clarified. Currently, as we interpret it, the Control of Pollution (Registers) Regulations allow for the placing of data onto the public register no later than fourteen days after the final determination (Section 7(4)(a)), although the Regulations do not appear to require the withholding. If results are withheld for the possible eventuality of a court procedure, this means that the public may not know whether sampling is occurring, and may not know the results of that sampling for some considerable time. If dischargers are informed of the admissibility of their own data as evidence, then a corollary would be to inform the public likewise by flagging data on the public register. However, in at least one region we have been told that no tripartite samples are entered onto the register. If such samples are then not used in a legal procedure, is the withholding of data in breach of Section 7 (3) of the Regulations which require register entries to be entered within two months of the sample date?

The results of all tripartite samples should be entered onto the public register, and the admissibility of such publicly disclosed analyses of tripartite samples as evidence should be established.

Yours faithfully

Mary Taylor

Mary Taylor
Senior Research Officer
Water Pollution, Waste and Toxics Campaign

29 OCT 1990

Great Yarmouth Borough Council

ENVIRONMENTAL HEALTH DEPARTMENT

Greyfriars House
Greyfriars Way
Great Yarmouth
Norfolk NR30 2QE

Switchboard: (0493) 856100
Fax: (0493) 846415
Telecom Gold: END 072 & PHA 026

D. J. Hornsey, F.I.E.H.
Borough Environmental Health Officer

Our Ref: SUB/W/8/JDH/RAW

Please ask for Mr Hemsworth
Direct Line (0493) 846458

25 October 1990

Dr R J Pentreath
National Rivers Authority
Rivers House
30-34 Albert Embankment
London
SE1 7TL

Dear Sir

DISCHARGE CONSENT AND COMPLIANCE POLICY
"A BLUE PRINT FOR THE FUTURE"

A Sub-Committee of the Council's Environmental Health & Services Committee met on Tuesday 23 October 1990 to consider and make comments on the recommendations contained in the above document and I list the following points for consideration:-

1) Recommendation 19

Sampling programmes need to be cost effective in providing the essential information for the basis of enforcement or decision.

2) Recommendation 24

Monitoring should be through consent conditions and not be achieved by voluntary arrangements with dischargers.

3) Recommendation 25

The scale of sampling should be decided in local circumstances but the regime should be formally agreed with the NRA.

4) Recommendation 26

Comments should indicate the specific data needed.

5) Miscellaneous

Generally the Committee expressed the following views:-

a) There should be close liaison with Local Authorities over pollution matters since they have a role to play.

5) Miscellaneous (Cont....)

b) There is a need for publicity and consultation with Local Authorities concerning discharge consents which the Committee considered should be published in the local press when consent conditions were confirmed.

c) Following the proposals in the Environmental Protection Bill where Her Majesty's Inspectorate of Pollution will send details of local integrated pollution control consents to Local Authorities to include in their register, it is thought that a similar system would be an advantage if copies of consents for discharges were also sent to the Local Authority for retention in a Local Register.

d) The NRA should have a pre-emptive power where pollution is likely to or may result from a known type of process.

e) Discharges should be required to have a "Discharge Policy Statement" which should include details of the chemistry of the discharge as well as:-

i) discharge peak limits
ii) sampling regime
iii) emergency action
iv) a built in Quality Audit Control

f) When considering the local implementations of a discharge a wider "Impact Analysis" should be considered, eg sewerage discharged to a river affecting the Marine Environment.

Following the full meeting of the next Environmental Health & Services Committee on the 6 November 1990, the contents will be available to the media.

The Committee already meets with local representatives of the NRA and hopes their comments reflect their concerns about the water environment. They will be pleased to be consulted on other proposals and request future copies of consultative reports.

Yours faithfully

D J Hornsey
Borough Environmental Health Officer

2923

DB. –

Who is collating these? Ian Pentreath.

GREENPEACE

30-31 ISLINGTON GREEN, LONDON N1 8XE
TEL: 071-354 5100/071-359 7396
TELEX: 25245 GPEACE G · FAX: 071-359 4062

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9 NOV 1990

Dr. Brian Walters,
Severn Trent Region,
National Rivers Authority,
Sapphire East,
550 Streetsbrook Road.
Solihull. B91 1QT

12th November 1990

Dear Dr. Walters,

Please find enclosed our comments on the National Rivers Authority consultation document "Discharge Consent and Compliance Policy: A Blueprint for the Future". I apologise for the very late arrival of these comments but hope you will be able to incorporate them in your discussions.

We have no plans to publish our response, although it may be made available in the future if requested by the media, and we would not object to its being made public by the NRA.

Once again I apologise for the lateness of this response,

Yours sincerely,

Gillian Glegg

Dr Gillian Glegg
Science unit

NATIONAL RIVERS AUTHORITY
SEVERN-TRENT REGION
RECEIVED
13 NOV 1990
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RECYCLED PAPER

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GREENPEACE UK RESPONSE TO THE NATIONAL RIVERS AUTHORITY CONSULTATION DOCUMENT -

DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE JULY 1990

12TH NOVEMBER 1990

GREENPEACE UK RESPONSE TO THE NATIONAL RIVERS AUTHORITY CONSULTATION DOCUMENT

Greenpeace campaigns for the protection of the environment and is therefore very concerned about water quality and the need for a system of controls on the pollution of the water environment. Therefore we welcome the aims of this document and hope that it will help to rationalise the present situation. This should help to clarify the situation for all workers involved in this field (industrialists, water authority employees, non-governmental organisations).

Fundamentally, Greenpeace does not believe that xenobiotic substances or unnatural quantities of substances compatible with the environment should be discharged into the water environment. In addition, with regard to toxic substances we believe a precautionary approach should be used, such that even without proof of a detrimental effect, discharges of substances that are toxic, persistent or liable to bioaccumulate should cease.

We support the introduction of a 100% compliance requirement with respect to consents. This will be a real step forward to enabling the controls on sewage discharges to be simplified and tightened. The use of 50% and 80% standards should also be of great value in assessing and controlling the quality of effluents and could be used as a tool to reduce total pollution loads. However, we hope that this will not lead to (or be used as an excuse for) any relaxation of consent limits already in position or those to be set in the future.

Whilst parts of the document seem to be positive there are areas where additional questions must be raised and recommendations implemented. There are three main areas which we feel the Blueprint should address but does not and these are detailed below.

(1) WASTE AUDITS

In several sections there seem to be problems raised by the discussion which could be addressed by the introduction of waste audits. Initially, Recommendation 2 identifies the need for consent applications to include as much detail as possible on the nature of the effluent and the need for dischargers to understand that withholding information may put in question the validity of the entire consent. In addition, if there is any change in the scale or character of the discharge the NRA needs to be notified.

A chemical by chemical waste audit would balance the quantity of chemicals entering the plant with those leaving in the product or as waste, to the atmosphere, land or water. If this sort of mass balance were included as part of the application for a consent it would enable all components of the effluent discharge to be readily identified before discharge began as well as being an important part of a dischargers waste minimisation strategy. Any changes in inputs or processes would automatically require

the waste audit to be amended and thus the authority would be informed of changes in effluent quality.

Recommendation 10 calls for limits to be placed on total loads for certain dischargers and this would be facilitated by a waste audit which would require the fate of all constituents of the processes to be known. A comprehensive waste audit policy would also help to address the concerns raised in paragraph 89 about pollution loads during maintenance and those concerns in paragraph 95 concerning accidental discharges. A waste audit would also alleviate the concerns raised with regard to batch processing. As noted in paragraph 76, intermittent sampling of the effluent from a plant using batch processing techniques may not identify the true pollution load entering the environment. These discharges can only be fully evaluated if the mass balance of the plant is known.

In paragraph 32 concerns are raised about the incomplete definition of effluents due to the complexity of effluents from chemical processing. Industrial effluents may contain over a hundred different chemicals arising from the raw materials, products and by-products. A waste audit would trace the movement of individual chemicals through the plant and thus facilitate the analysis of the final effluent.

These assessments should also, in the future, be an essential part of integrated pollution control. Integrated pollution control should for the first time address the need for wastes to be avoided and prevent the transfer of wastes from one media to another as legislation changes. Waste audits will enable all wastes to be quantified and will be able to identify wastes being simply transfered from one environmental media to another under the guise of environmentally friendly policy. It is well known that local atmospheric emissions can be a major source of pollution to estuarine and coastal waters and thus it is essential environmental pollution is considered as a whole.

(2) TRIPARTITE SAMPLING

Paragraphs 91 to 95 discuss the present need for a tripartite sampling system for the prosecution of a company for breaking consent limits. This section emphasises the extra expense involved in collecting and analysing a sample under the tripartite system but concludes that the need to protect the dischargers interest is paramount. This need has to be questioned. The precautionary principle demands that the benefit of the doubt is given to the environment rather than the polluter.

The National Rivers Authority is a 'competent body' (as defined under EC legislation) and as such ought to be trusted. Part of their role is that of a policing body and there is no reason why we should not trust them. It appears that the present legislation is actually biased in favour of the dischargers enabling them to pollute for some considerable time before the tripartite sampling system is implemented.

For example, consider a company of good reputation changing management and beginning to flout the discharge consents. At a sampling frequency of six times a year it could easily be a year before the local NRA, allowing for accidents and mistakes, would consider collecting a tripartite sample. It could then be several months before sampling was carried out and the company brought for prosecution.

However, if the NRA could prosecute on the basis of any sample taken during routine monitoring then after a minimum amount of time there may be a case for warnings to be issued and action could then be taken on the basis of the samples already collected. This would not automatically lead to 'prosecution happy' authorities but would reduce costs, improve efficiency and encourage companies to take limits applied seriously.

If Recommendation 32 is accepted, calling for a system of formal warnings, there can be no reason for not allowing the NRA to prosecute on the basis of their performance during the warning period if they do not improve their effluent quality. If during the warning period the company chose to dispute the analysis then it would be possible to split samples for a comparative analysis.

(3) TOXIC USE REDUCTION

The most greatest deficiency in this document is that nowhere does it address the need for the reduction of the use of toxic substances and for waste minimisation in general. Reduction of the pollution of the environment should be the most important function of any regulatory body concerned with the environment. The absence of any recommendations concerning the role of the NRA in pollution minimisation is the most serious omission in this document.

A first step towards minimisation of toxic wastes is the implementation of a Toxic Use Reduction Audit and Clean Production (see Appendix). A toxic use reduction audit quantifies each chemical entering the plant as raw material and leaving the plant as product and can therefore calculate the quantity of waste generated. It is different from a waste audit in that it seeks to reduce or eliminate toxic chemicals during all stages of production whether they appear as wastes, by-products or constituents of a finished consumer product. The US EPA has published a Waste Minimisation Opportunity Assessment Manual which describes how companies can carry out a toxic use audit. Once this has been done a company can set timelines and goals to reduce their waste production by adopting or researching clean production methods. All such information should be readily available to the general public.

Toxic use reduction audits are an important part of a strategy towards the implementation of Clean Production. The EC has suggested that clean production should replace the present concept of 'best available technology' as this offers a better guarantee for a source-based approach. Clean production is defined as industrial systems which avoid or eliminate hazardous waste and hazardous products, and use a minimal amount of raw

materials, water and energy.

A non-profit making research organisation in the United States, INFORM, recently conducted a survey to determine what influenced the decisions made by industry with regard to their waste management and minimisation. They found that many companies only began to implement waste reduction measures when they were forced to do so by legislation and that 67% of waste reduction measures were due to tightening regulations (see Appendix).

This is acknowledged in paragraph 118 of the Blueprint which notes that some businesses will 'not achieve and sustain the necessary safeguards against their effluents causing damage unless they are compelled to do so'. Paragraphs 121-2 do consider recent government initiatives on waste minimisation but there is no recommendation based on this suggested in the report.

In the US in 1989 the EPA enacted SARA 313 (otherwise known as the Public Right to Know Act) which requires that each state office makes available to any citizen all data on 313 specific toxic chemicals used by industry. The companies have compile a Toxic Release Inventory to identify which of the 313 toxic chemicals they use, where the waste is emitted to (land, air or water) and detail which waste management firm a company may ship its waste to. Whilst this legislation has some shortcomings, such as the restricted list of chemicals and the size of plant usage before listing is required, it would represent a leap in the right direction were similar legislation introduced in the UK.

At the recent meeting of the Third International Conference on the Protection of the North Sea the participants resolved to achieve a significant reduction (of 50% or more) of 36 priority hazardous substances between 1985 and 1995 and a reduction of 70% or more of total emissions of dioxins, mercury, lead and cadmium. The UK must implement a waste reduction strategy urgently if it is to be able to approach these targets. The NRA has the expertise and links with industry to force waste reduction onto the industrial agenda. The Blueprint should give guidance on how their position can be used most fully for the protection of the environment.

CONCLUSIONS

In conclusion, whilst Greenpeace welcomes the rationalisation of the consent regulations it feels that if no mention is made of waste minimisation and in particular toxic use reduction then this document is a wasted opportunity. The system of consenting discharges is one of the few systems that can be used to assess pollution loads into the environment. It should be used as part of a pollution reduction strategy.

If the NRA really wish to seen as Guardians of the Water Environment then Greenpeace feels that the energies of the NRA would be far better spent on assessing ways to reduce the

pollution entering the water environment rather than attempting to assess the vague concept of 'environmental capacity'. This concept is rapidly losing favour in many more forward looking countries and will not safeguard the environment.

Clean production and the prevention of the creation of toxic wastes is the only certain way to protect the environment. We hope more emphasis can be placed on waste reduction in this discharge consent and compliance policy.

APPENDIX TO THE RESPONSE OF GREENPEACE UK TO THE

NATIONAL RIVERS AUTHORITY CONSULTATION DOCUMENT -

DISCHARGE CONSENT AND COMPLIANCE POLICY:
A BLUEPRINT FOR THE FUTURE JULY 1990

ORIGINALLY SUBMITTED TO THE EUROPEAN COMMISSION 1990

CLEAN PRODUCTION: THE ONLY SOLUTION TO THE EC WASTE CRISIS

At the 6 April meeting of the European Parliament a Resolution was passed on the recent conference on the North Sea. (1)

In the minutes of this meeting the Parliament:

- regrets that the third North Sea Conference failed to establish a binding high level of environmental protection;

- regrets that the final text approved by the Conference lays insufficient stress on the idea of 'clean production' as a policy line...;

  and furthermore

- calls on the Council to make a statement to Parliament on its response to the outcome of the North Sea Conference as soon as possible after the meeting of the Ministers for the Environment on 7 June 1990.

- believes that the ultimate aim of an effective North Sea policy must be the end of all discharges into the North Sea by the year 2000 at the latest;

- believes that the concept of 'best available technology' should be replaced by the concept of 'Clean Production' since this approach offers a better guarantee for a source - based approach to the prevention of waste creation

Greenpeace welcomes the Parliament's position, whole-heartedly endorses the resolution of April 6, 1990 and urges the Commission to translate such concern into law.

CLEAN PRODUCTION: THE SOLUTION

Clean Production is truly preventative in scope and different from Best Available Technology controls.

Clean Production is defined as industrial systems which avoid, or eliminate hazardous waste and hazardous products, and use a minimal amount of raw materials, water and energy. Goods manufactured in a clean production process do not damage natural ecosystems throughout their entire life cycle, including:

- raw material selection, extraction and processing;

- product conceptualisation, design, manufacture and assemblage

- industrial and household usage;

- reintroduction of the product into industrial systems or nature when it no longer serves a useful function.

Clean Production does not include "end of pipe" pollution controls such as filters and scrubbers or chemical, physical and biological treatment. Measures which purport to reduce the volume of waste by incineration or concentration, mask the hazard by dilution, or transfer pollutants from one environmental medium to another are also excluded.

This concept is not new to the EC. The Commission developed the concept of 'Low and Non Waste Technology,' in 1984 (2) and stated:

> The low pollution technology is a manufacturing method where the totality of raw material and energy is used in the most rational and integrated way in the production cycle: raw material resources - production - consumption - secondary material resources, in order to prevent any negative impact on the environment likely to affect its normal functioning. In the broad sense, the low polluting and non-waste technology concerns, not only production processes but also the fate of products characterised by a longer lifetime and easier repair and that could be recycled and transformed after use, in order to prevent ecological damage. The aim is to obtain a complete technological cycle for the use of natural resources, compatible with or similar to natural ecosystems.

Furthermore at the UN/ECE Seminar on economic implications of Low-Waste Technology in 1989 (3) emphasis upon the prevention of generation of waste and pollution was very explicitly made. With respect to the concept of low waste technologies, the responsibility of the manufacturer for the product throughout its whole life cycle was highlighted. The conferees also emphasised that changes of consumption and production patterns and alternative forms of organisation of social life for better protection of the environment may be necessary.

These definitions and the related recommendations, can provide a basis for the operationalization of the precautionary principle. It goes further than a strict technological approach and it is focused on prevention of waste and pollution.

IMPLEMENTATION

In the recent publication PROTECTION OF THE NORTH SEA: TIME FOR CLEAN PRODUCTION (1990) (4) the authors identify strategies to implement clean production. As they and other researchers in the clean production field argue, there must be an attitudinal change from the focus on pollution control through technological measures to pro-active pollution prevention through an integrated approach to the entire production process. Waste prevention techniques, therefore, would broaden the scope of measures to production management. It would further provide many opportunities to address issues of economic feasibility, because many of the waste minimisation measures are not only environmentally sound but are economically profitable for the firms.

Furthermore, waste reduction is currently feasible. A report published in 1986 by the Office of Technology Assessment in the USA, entitled SERIOUS REDUCTION OF HAZARDOUS WASTE (5) stated that a 50% reduction of hazardous wastes was achievable in the following five years using currently available measures. A complementary study entitled CUTTING CHEMICAL WASTES (1986) published by INFORM (6) a non profit research organisation which studies corporate development found that less than 1% of companies had initiated a waste reduction programme although when firms did look for waste reduction measures they found considerable opportunities.

There are common reasons, applicable to both North America and Europe, as to why waste reduction is not occurring. The main problem at the outset is that most companies do not know how much waste they produce or where exactly it comes from. They are often surprised at the amount of waste generated and raw materials lost when a toxic use audit is performed. Secondly, current environmental laws are too environmental media specific with mechanisms to promote end-of-pipe technologies based on pollution control. This in effect keeps the focus on permit compliance, rather than an integrative and progressive waste reduction programme. Thirdly, the transfer of knowledge regarding various clean technologies is poor and the majority of case studies focus on technology development -- not on the total process of management change and social education.

The EC administration has the potential to act as a real international co-ordinating body for environmental protection. It has the power to put member states with a less stringent environmental policy under pressure and it also provides a network for the dissemination of clean technology information.

Greenpeace strongly recommends that the EC legislates member states to adopt the following 6 point plant with the goal of implementing Clean Production:

- set harmonised legislation requiring company Toxic Use Reduction Audits
- identify problematic waste streams and their associated product(s)
- prioritise research on Clean Production, based on information obtained
- set waste reduction goals and timelines
- set financial incentives for Clean Production programmes and progressive pollution taxes linked to liability legislation
- enable full public access to information on company specific waste generation and waste reduction measures.

THE TOXIC USE REDUCTION AUDIT

As stated previously, the vast majority of companies are unaware of how much waste they actually generate. Only by doing a TOXIC USE AUDIT which quantifies each chemical entering the firm as raw material and leaving the firm as product can the total amount of generated waste be computed.

TOXIC USE REDUCTION is different from WASTE REDUCTION in that it seeks to reduce or eliminate toxic chemicals during all stages of production whether the chemicals appear as wastes, by-products, or constituents of a finished consumer product. Waste reduction, by focusing on the reduction of chemicals in waste streams, continues the traditional differentiation between occupational and environmental exposure. Use reduction, by focusing on the chemicals in all stages of the production process, makes no such distinction. The concept clearly shifts the environmental objective from control to prevention.

The US EPA has published a Waste Minimisation Opportunity Assessment Manual, which has since been modified and translated into Dutch and Swedish and is soon to be translated into Danish and Polish. This enables companies to systematically carry out a toxic use audit. Once this audit has been done, a company can then set timelines and goals to reduce their waste production by adopting or researching Clean Production methods. The US EPA's Pollution Prevention Department is currently considering making this audit mandatory. However, some states have taken the initiative already. For instance in the state of Massachusetts companies must prepare toxic use reduction plans that include past and projected changes in toxic chemical use, assessment of available technologies or chemical substitutes that would reduce toxic chemical use and schedules for introducing economically feasible reduction technologies or practices. In order to implement the plans a university-based Toxic Use Reduction institute provides training and conducts research on new clean technologies.

PUBLIC ACCESS TO INFORMATION

It is essential that the public has full access to information on waste generation and subsequent waste reduction programmes. This ensures environmental democracy and increases social awareness and involvement with waste minimisation. Again, this factor has been identified as crucial to a Clean Production programme.

In 1989 the US EPA enacted SARA 313 otherwise known as the Public Right to Know Act. This mandates that each state office of the EPA make available to any citizen all data on company specific toxic chemicals used; identify where the waste is emitted to -- ie. air, water or land; and detail which waste management firm a company may ship its waste to. By making this information available communities can set up a dialogue with local firms to focus on waste reduction programmes. This legislation has been considered by many to be the most important freedom of access to information law ever enacted. The act does have short-comings

such that only 313 toxic chemicals must be identified and only users over a certain quantity per year must submit a Toxic Release Inventory, but the EC could do well to follow the lead of the US EPA in this field.

With reference to the six point plan above, Greenpeace further recommends that the EC facilitates full access to information on Toxic Use Reduction Audits and that the current Directive on Public Access to Information be amended accordingly.

It is also essential that waste liability be strengthened and waste not seen as a good or commodity. As referred to in the Greenpeace submission on the Transfrontier Shipment of Hazardous Waste, waste must be emphasised as a financial and environmental problem and not as a good to be traded on the open market.

OTHER MEASURES

Finally, as stated in the report PROTECTION OF THE NORTH SEA: TIME FOR CLEAN PRODUCTION various instruments can facilitate the turn to Clean Production. These range from economic instruments to physical regulations such as permitting and strict liability for damages caused by industrial processes. It is further recommended that the EC NETT database (Network for Environmental Technology Transfer) focus more on clean technologies rather than the current end-of-pipe pollution control information. Product Policy is also crucial and it is recommended that the EC's current work on product life cycle adopt criteria that are fully consistent with the definition of Clean Production.

The report also offers a timeline to implement the goal of zero discharge into the North Sea by the year 2000 and recommends that a North Sea Clean Production Task Force be established to stimulate Clean Production. However prevention of new pollution of the North Sea requires a European wide policy. Greenpeace therefore calls on the EC to implement a Clean Production plan to make zero discharge by the year 2000 a reality.

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6. CUTTING CHEMICAL WASTES. Sarokin et al. Inform, NY 1985.

HUMBERSIDE
COUNTY COUNCIL

Technical Services Department
Acting Director, G Roberts C.Eng., M.I.C.E., F.I.H.T.

Environmental Issues Office,
County Hall, Beverley
North Humberside HU17 9XA
Telephone 0482 867131
Fax 0482 871892

Your Ref.
Our Ref. AMcK/JB/64/1/46
Enquiries to: A. McKenzie
Ext. 4210

Date 29th October 1990

Dr. R.J. Pentreath,
Chief Scientist,
National Rivers Authority,
30/34 Albert Embankment,
London
SE1 7TL

01 NOV
2502

Dear Dr. Pentreath,

N.R.A. Report - Discharge Consents and Compliance Policy: A Blueprint for the Future

I enclose comments on the N.R.A.'s proposals.

These may be submitted to the Authority's Environment Sub-Committee to be held on 14th November 1990, alongwith an explanatory report. There are no plans to make the comments available to the media as such.

I have no objections to the N.R.A. making any part of our response public.

Yours sincerely,

for Acting Director of Technical Services

Enc.

Assistant Directors:
Strategy - J.F. Wheeler; Client - A. Walker; Consultancy - M.R. Milns;
Works - J.R. Shaw; Services - R.H. Sowerby

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SUMMARY OF RECOMMENDATIONS

The Purposes and Types of Consents

Recommendation 1: The NRA should commit the necessary resources to analysing and publishing annually data about the numbers of consents in operation, and the discharges they regulate, with estimates of the degree of compliance among those regularly sampled. Publication of data then available should in any event begin in 1991. (Paragraph 26)

Recommendation 2. The NRA should review urgently the layout and guidance given for the completion of application forms for consents. While such a review must allow fully for the statutory status of consents and the application form sometimes having to be produced in Court. The review should also:

i) ensure that the design and wording of the form helps applicants to understand what information is required and to give it fully, and leaves them in no doubt that withholding information about the effluents involved may put in question the full validity of the consent to be issued;

ii) include a prominent reminder on the copy to be retained by the applicant that any alteration in the scale or character of the discharge or the site conditions giving rise to it should be notified to the NRA. In many consents this may be appropriately included as a condition of the consent which it would be an offence to neglect. (Paragraph 28)

APPENDIX

COMMENTS BY THE DIRECTOR OF TECHNICAL SERVICES

Recommendation 1: The proposal is to be welcomed. There are an estimated 139,000 consents in operation nationally of which some 12,000 are regularly sampled. There is currently a lack of information which can only impede accountability.

Recommendation 2: Largely an administrative improvement designed to set out clearly the ground rules relating to a discharge e.g. what can be discharged and how much. It will also serve to remind the discharger that he is obliged to seek permission to increase or vary the content of the discharge. The new documentation will also serve as a prime document in any prosecution.

Recommendation 3: Numeric consents should be self-contained in their drafting and should include a standard rubric to the effect that they are not to be taken as providing a statutory defence against a charge of pollution in respect of any constituent for which they do not specify limits. Existing consents should have this rubric added. (Paragraph 31)

Recommendation 4: Where not already available, NRA Regional Offices should prepare a leaflet on the areas where septic tanks etc. do and do not require consents, and maintain regular liaison with District Council Planning Offices about these demarcations. (Paragraph 34) .

Recommendation 5: Whereas numeric consents are mostly focussed on limits to be met by the effluent discharged, however it may arise, non-numeric consents must often be specific and unequivocal about the facilities and processes from which the discharge is to be made. This applies especially to marine outfalls. and will make the consent conditions for them notably different in some respects from those conventionally applying, for example, to sewage works discharges. (Paragraph 38)

Recommendation 6: For all types of consents including simple descriptive ones, maintenance obligations and the keeping of maintenance records should widely be standard conditions. Where necessary these obligations should cover all the facilities associated with the discharge, and there should be occasional inspections of the facilities and (where relevant) maintenance records to ensure compliance. (Paragraph 41)

Recommendation 3: The content of some discharges is difficult to define therefore the purpose of this is to remove a possible defence by a discharger to prosecution by claiming that because the consent contains no limit for a specific substance, no limit applies and no offence has arisen.

Recommendation 4: This is designed to protect underground water sources from possible contamination.

Recommendation 5: This relates mainly to non-numeric consents e.g. in the case of storm overflows or marine discharges. The discharger will be required to take account of the receiving waters capacity to dilute and disperse and therefore make provision to avoid the receiving waters becoming overloaded. The effect of this will be to place a greater burden on the discharger to instal facilities to screen effluent. Consent applications will therefore contain details of these.

Recommendation 6: Again largely improvements to the recording system.

Recommendation 7: For simple descriptive consents, it may often be appropriate to include a standard wording excluding any trade or farm waste or any increase in the number of dwellings connected to the discharge, so that the discharger recognises that any development likely to change or influence the scale or character of the discharge must be notified to the NRA. (Paragraph 41)

Defining Limits

Recommendation 8: All numeric consents should include absolute limits for all relevant determinands. (Paragraph 55)

Recommendation 9: For environmentally significant discharges, whether from sewage works, industrial sites or other sources, the NRA should promote the application of 80 percentile limits in addition to the absolute limits which all numeric consents should have. These should be related to a clearly stated rolling time period. Where appropriate 50 percentile limits should additionally or alternatively be applied. (Paragraph 60) dischargers to maintain records of the mass of a substance discharged over a given period and, in appropriate cases, to notify the NRA when a stated proportion of the total mass authorised for the relevant period has been discharged, may also be desirable. (Paragraph 62)

Recommendation 7: As above.

Recommendation 8: Represents a tightening up of consents by extending the notion of absolute or maximum limits to be included in all numeric consents, including sewage works discharges. Thus the consent will specify a number of substances and their absolute limits and compliance will be monitored by spot-sampling. The absolute limit will be sent to control peaks in the discharges.

Recommendation 9: Is designed to compliment the use of absolute limits by including in sewage discharges a time frame during which overall compliance will be required for 80% of the time.T his will prevent the discharger operating at just below his absolute limits,while allowing the consent to cope with variations in load and the impact of accumulative substances.

Recommendation 10: For discharges where the effluent or their constituents may build up in the receiving waters, consents should include limits on loads. Conditions requiring dischargers to maintain records of the mass of a substance discharged over a given period and in appropriate cases to notify the N.R.A. when a stated proportion of the total mass authorised for the relevent period has been discharged, may also be desirable. (Paragraph 62)

Limits to Flow and Choice of Determinands

Recommendation 11: All numeric consents should include absolute limits for instantaneous effluent flow. Where flows are particularly variable, it may be necessary to include additional limits related to total volumes discharged over specified longer periods. (Paragraph 69)

Recommendation 12: Consents for discharges influenced by rainfall need to be as specific as possible in the nature of flows authorised for discharge under dry and under rainfall conditions. References to the design criteria for flows going to full treatment and to overflows or storage, and safeguards against the discharge of solids should be explicitly mentioned in consents for new and refurbished overflows. (Paragraph 73)

Recommendation 13: The NRA should gather systematic data on pollution caused by temporary discharges which are unconsented, and by discharges from various special situations such as mineral workings. The NRA should then promote in the light of this data programmes to emphasise the need for discharges to be consented, possibly by accelerated procedures if they are to be very short term; and take enforcement action against dischargers who ignore need for consents. (Para.77)

Recommendation 10: This is designed to deal with the accumulative build up of substances in waters which are slow to disperse pollutants. In effect an overall limit in the amount of pollutants allowed into the receiving waters.

Recommendation 11: Limits to effluent flows are designed to control the polluting load rather than concentrations of individual pollutants. In doing so account is taken of the volumes discharged. Flow limits will be absolute.

Recommendation 12: The N.R.A. have discounted numeric limits for storm overflows,taking the view that these are beyond the dischargers' control and opted for descriptive consents.

Recommendation 13: This proposal is designed to deal with surface water run-off due to rainfall on areas where excavation work is taking place e.g. quarries and mineral workings.Consents will be necessary unless it can be shown that the discharge is not contaminated by toxic and or polluting substances.

Recommendation 14: In new and revised consents there should be consistent application of limits for ammonia in all discharges to which this is relevent.(paragraph 77)

Recommendation 15: The NRA should make a commitment to gather the data necessary to evaluate the suitability of TOC and turbidity as nev determinands for inclusion into consents in place of BOD and suspended solids. If a sustained period of parallel assessment produces sufficiently encouraging results, the aim should be to begin using the new determinands as replacements for the old about five years from now. (Paragraph 83)

Recommendation 16: For environmentally significant discharges of complex composition where not all important constituents can be individually identified and numerically limited, consents should specify a clearly-defined toxicity limit, the appropriate form of toxicity test to be used. and the minimum frequency with which it should be applied. (Paragraph 84)

Monitoring and the Assessment of Compliance

Recommendation 17: The NRA should include in all relevant consents conditions indicating access and facilities required for flow measurements and the taking of samples to be done by the NRA at whatever times in the day, night or week it judges appropriate. The NRA should also encourage sampling staff to maintain the practice of making their visits unpredictable. (Paragraph 89)

Recommendation 18: Whilst it is not the practice of the NRA generally to notify the discharger on each occasion of the results of the sample taken from his discharge, there should be regular dialogue between the NRA and the discharger covering satisfactory results over a period as well as highlighting any variations.(Paragraph 99)

Recommendation 14: In existing consents across the U.K.,there is a lack of consistency in the limits set for ammonia from sewage works. This recommendation will rectify this.

Recommendation 15: This recommendation is supported.The BOD test is largely impracticable,expensive and does not lend itself to automatic or continuous monitoring.Likewise by switching from examining suspended solids to turbidity a fairly instant result can be obtained. If ,after a period of parallel testing these tests can be used with confidence,test results will be quicker as will consequent action.

Recommendation 16: This proposal relates mainly to industrial discharges containing a number of chemicals,thus making it difficult to identify individual pollutants.The proposal is to specify a clearly-defined toxicity limit.

Recommendation 17: Clearly the consent should specify the need for samples and empower N.R.A. staff to have access to the works and take samples. The consent should not make the sampling programme predictable however.

Recommendation 18: Given the nature of the proposals contained in this document, it would be surprising if the N.R.A. did not seek to maintain a "dialogue" with dischargers.Clearly this should not develop to the point where exhortation or encouragement to improve replace prosecution.

Recommendation 19: Sampling programmes need to be economical, but frequencies must be adequate for results to provide a basis for decision or enforcement. Detailed guidance on required effluent sampling frequencies will be provided by the NRA.s Sampling Group. Tripartite sampling should not be regarded as wasted effort if no prosecutiom follows. To promote efficiency, comparisons of sampling cost and frequency should be made between regions from time to time as well as audits of sampling and laboratory procedures. (Paragraph 99)

Recommendation 20: In standard procedures for dealing with emergencies and accidents the obtaining of samples necessary for subsequent enforcement action should be explicitly included. (Paragraph 99)

Recommendation :21: Any type of sample, whether routine or investigational, may be used in assessing compliance with absolute limits. (Paragraph 107)

Recommendation 22: Percentile limits must always be related to specified time periods. For the assessment of compliance by tables based on BS 5700. consents should specify rolling time periods: these need not always be for 12 months and in cases of discharges needing careful supervision periods of six months or less will be preferable. The assessment should be based solely on results from the routine monitoring programme: special or investigational samples introduce bias and should be used for this purpose. (Paragraph 107)

Recommendation 19: Tripartite sampling is necessary for prosecutions to succeed. It is also expensive and therefore the N.R.A. will issue guidance on its use. Ultimately the cost will fall on the polluter.

Recommendation 20: Agreed that the need for remedial action in an emergency should not prevent tripartite sampling from being carried out.

Recommendation 21: No comment.

Recommendation 22: Agreed.

Recommendation 23: The counting of exceedences against percentile limits should be separate for each determinand having such limits. The NRA should adopt a standard form of words to put this beyond doubt in all consents that include percentile limits. (Paragraph 107)

Recommendation 24: The NRA should promote continuous monitoring of environmentally significant discharges where technology and circumstances make that possible with adequate reliability at reasonable cost. This may be achieved by voluntary arrangements with dischargers or through consent conditions. On either basis, validation by NRA of equipment and data and in suitable cases remote access facilities for the NRA should be provided for. (Paragraph 111)

Recommendation 25: Monitoring directly by the NRA must continue as our independent check, on a tripartite basis where necessary, and generally. where discharges are undertaking some self-monitoring as well as where they are not. The scale of this work should be decided in local circumstances and on the basis of general policy on sampling frequencies. (Paragraph 111)

Recommendation 26: Where automatic or continuous monitoring is required, consents should usually indicate the types of data needed and the degree of accuracy required rather than the particular equipment to be used. Consents should provide for independent certification of the equipment's accuracy at regular intervals and in appropriate cases may require facilities for the NRA to interrogate the equipment remotely. (Paragraph 111)

Recommendation 23: If exceedences against percentile limits were aggregated for a number of pollutants the effect from a statistical point of view would be to relax standards.They should be kept separate as proposed.

Recommendation 24: Agreed.

Recommendation 25: Agreed and as with the previous recommendation the N.R.A. must ensure that it does become reliant on self regulation but carries out systematic validation of monitoring results by independent sampling.'

Recommendation 26: Agreed.

Recommendation 27: The NRA should always be ready to indicate to dischargers which of the data they may be expected to provide has to appear on the register. The NRA can and should also indicate which data they will not rely on as evidentiary. (Paragraph 112)

Recommendation 28: With the increased number of results likely to be flagged as exceedences on the public registers following the introduction of 80 and 50 percentile limits, the NRA should develop a clear introductory note on the meaning and interpretation of percentile limit exceedences, and arrange for this to be readily accessible by anyone consulting the public registers. (Paragraph 117)

The Motivation of Dischargers and Other Considerations

Recommendation 29: The NRA needs to consider all relevant circumstances in deciding on prosecution in individual cases including the discharger's record of care. Where a discharger has shown little or no care, or active contempt, for consent obligations over a period, this should be a factor in favour of prosecution. The NRA must not be regarded as reluctant to prosecute in situations where significant pollutions occur and relevant evidence is available. (Paragraph 125)

Recommendation 30: Application forms by corporate bodies for discharge consents should require the applicant to designate by name and post a manager of an appropriate level to take a direct interest in

Recommendation 27: This recommendation is designed to encourage dischargers to make data readily available to the N.R.A. without fear of prosecution and at the same time make it plain to the discharger what information will be included in the public register.

Recommendation 28: Any explanation of how the public can interpret meaningfully statistical information is to be welcome.

Recommendation 29: Clearly any prosecution policy adopted by the N.R.A. needs to be understood by dischargers.The determination of this policy is outside the terms of reference for this group. The recommendation is however designed to influence those responsible for policy-making and makes it clear that the N.R.A. should not be reluctant to prosecute.

Recommendation 30: This recommendation is designed to ensure that dischargers nominate a senior member of staff who will be responsible for the operation of consents; good practice.

the good operation of the discharges in compliance with the limits which the consent will define. Other contacts may be used in addition for day-to-day purposes as convenient, but the NRA will aim to maintain dialogue and liaison with the designated person from time to time and any change is the person assigned this task should be notified to the NRA. (Paragraph 128)

Recommendation 31: For many discharges not subject to regular sampling, any billing system introduced for annual charges should include a section or enclosure where from time to time the discharger can notify any change in circumstances relating to the discharge (eg change of occupier) or confirm that no changes have occurred and any maintenance obligations have been fulfilled. Application forms for consents should be revised to make clear that this practice will be introduced. (Paragraph 128)

Recommendation 32: The NRA should introduce a system of formal Action Warnings on the lines indicated above, in addition to existing procedures for warning dischargers when their effluents are or threaten to be unsatisfactory. (Paragraph 132)

Resource Imolications and Priorities

Recommendation 33: Much of the work of implementing our recommendations as they are adopted should go forward on a catchment basis with the sort of factors we have indicated influencing the priority for each catchment. This approach should lend itself well to providing worthwhile progress reports locally and nationally as the work goes forward on a well-defined time-table. (Paragraph 147)

AMcK
23rd October 1990

Recommendation 31: No comment.

Recommendation 32: The introduction of "action warnings" in any system where one organisation polices another reflects the need for natural justice and formalises relations between the parties.It is important that they do not become a substitute for prosecution.

Recommendation 33: It would have been surprising if the N.R.A. had the resources to implement these proposals overnight and therefore a phased introduction is to be expected.

31 OCT 1990
2479

Dr R J Pentreath
Chief Scientist
NRA
Rivers House
30-34 Albert Embankment
London
SE1 7TL

ICI Group
Environmental Laboratory
Freshwater Quarry
Brixham
Devon TQ5 8BA
Telephone (0803) 882882
Telex 42812 ICILAB G
Fax (0803) 882974

Our ref JRL/CC

Date 30 October 1990

Dear Sir,

I am writing to you on behalf of ICI to respond to your request for comment on the NRA's "Blueprint for the Future on Discharge, Consent and Compliance Policy". We do not propose to publish our response but have no objection to the NRA making it publicly available. We also propose to copy these comments to interested parties such as DoE, HMIP, CIA and CBI.

We would first of all compliment the authors on a document that is well argued and well written. We support your wish to iron out irrational regional anomalies and are pleased to observe the tone of practicability and co-operation that pervades the paper. We hope that this attitude will become an integral part of NRA's style in all regions.

I do not propose to react to your recommendations one by one but rather pick out those issues where there is strongest feeling.

Many of my colleagues raised points about the use of absolute limits and percentiles and your interpretation of probability distributions illustrated by your figure 1. The probability distribution of the concentration of a contaminant in a discharge may have a long upper tail for several reasons. It may be an inevitable consequence of a complex and varying production pattern, for example that of a versatile multi-purpose batch production unit. Alternatively it may be the result of occasional lapses of good housekeeping in a steady, continuous process, to give another example. Furthermore the seriousness of the long tail depends on whether an environmental hazard results from the total load, or from a long term average or from the maximum value. All these situations are possible and have to be dealt with wisely.

In the case of abnormal occurrences the setting of absolute maxima will encourage industry to tackle its housekeeping and undertake hazard studies to ensure that plants are designed and operated to minimise the risk of exceeding consents. This we accept.

But where a long tail is fundamental to the process the position is more difficult. To set the maximum at a practicable level may imply a mean concentration at a small fraction, say much less than 10%, of the maximum. Put another way to achieve a sensible mean would require a very high maximum indeed. I suspect that it is just this situation that led to the development of the 95 percentile system, fudged as it may have become.

When, referring to figure 1, para 49 states that "Ammonia must at all times be below 50mg/l", it implies a very unusual distribution around the 50mg/l area!

I think that these issues will demand very careful guidance in the setting of absolute limits and also careful consultation over such issues as when (Recommendation 10) it is wise to base a consent on load, or (Recommendation 9) on a 50 or 80 percentile. We support the direction of your argument but do not believe that you have yet produced comprehensive or definitive advice. Various ICI businesses will still expect to negotiate on these issues with their regional NRAs in relation to particular circumstances.

A second topic of widespread concern is that of monitoring. In particular we note your enthusiasm for continuous or automatic monitoring (para 108), for feeding that data direct to NRA (para 108) and the obligation to include the results in public registers (para 113). We accept the policy of greater public access to data but:-

> How will the results of continuous monitoring be presented on the registers?
>
> How will occasional breakdowns of instruments and the resulting false results be handled?
>
> There has to be some form of quality assurance of data treated in this way. Will NRA laboratories be accredited to BS 5750 or NAMAS? Proper interpretation will also require an appreciation of the accuracy and reproducibility of tests.
>
> The results of NRA sampling should always be given to the discharger, if only to enable him to eliminate typographical or other errors. (Recommendation 18)
>
> Whilst we agree that biological (ie toxicity) monitoring (Recommendation 16) has a part to play it raises important questions of speed of response, cost and accuracy/reproducibility for monitoring, as opposed to supplying supportive evidence. We believe that it should be limited to cases where the significant toxic component cannot be monitored satisfactorily.

Underlying these concerns is our worry that data on public registers may be misleading or may be misinterpreted, either wilfully or accidentally. For example, we welcome recommendation 28 of course, but still fear that exceedance of a percentile limit, without a breach of consent, will be misunderstood.

Your comments on BOD/TOC and SS/Turbidity in paras 78-83 are well understood. We accept what you say in para 80 subject to the need to stress the importance of having case-specific BOD/TOC relationships (not mentioned in recommendation 15). We also suggest, since BOD is the truest representation of what happens in the river, that you consider using TOC as the monitoring variable, but, when the control value is exceeded, then to ask for a BOD test, and to take that as the ultimate determinand.

A not dissimilar issue is raised if turbidity is used as a surrogate for suspended solids. If the correlation is upset by the presence of colour a site specific correlation will be needed.

While we clearly accept our obligations with regard to maintenance (Recommendation 6) there is already concern that regional NRAs may specify more frequent shutdowns and hence higher costs than are justified. Does this section (paras 40-41) refer to maintenance of manufacturing plant or to maintenance of the monitoring facilities? The concern of the NRA is presumably with the latter.

The proposals for separation of trade effluent from storm overflow (Recommendation 12) are understood and should be incorporated in any new development. But their application retrospectively to existing plant may demand enormous expenditure. This will need sensitive negotiation and timing in relation to maintaining commercial viability. Your reference to 'well established criteria' surely applies to sewage discharges.

We have expressed our view elsewhere on charges. We believe emphatically that the basis of the charge should be to cover a cost incurred or a service rendered. We resist the concept of incentive based charges hinted at in para 134, and are concerned about the 'bullish' style of para 135, particularly the final sentence. But none of this should indicate to you that we do not support your policy of steady and planned improvement of river quality.

Reference is made in para 28 and recommendation 2 to site conditions and processes giving rise to effluents. We are concerned about disclosing publicly details of in-house processes when the concern is primarily about the final site effluent and its environmental effect.

The underlined passage in para 94 caused us some concern. To demonstrate that a percentile was exceeded to an unacceptable degree the whole sequence of results is necessary and, as a basis for prosecution, would need to be tripartite.

While accepting the need to improve water quality in the UK we must also ensure that we do not incur costs that inhibit our international competitiveness. We are conscious that developments in the UK may inflict much higher standards than in other countries, particularly continental Europe. It has been pointed out to me that, on the continent, the courts have greater flexibility of interpretation in these matters than in the UK.

Therefore we must ensure that the concept of 'reasonable practicability' is maintained in UK legislation.

Finally a legal colleague commented on your paper with reference to differences between the approaches of HMIP and NRA. I continue by giving his remarks in full.

The distinction which the NRA make between the 'law enforcement' and 'technical specification' aspects of consent conditions (paragraphs 118-120) is a useful one, which helps to justify the combination of percentile standards and absolute limits (paragraphs 56-58). Likewise the distinction between results which will and will not be used for prosecution (paragraph 112) - though this is complicated, particularly for IPC, by the possibility of private prosecutions.

While the NRA notes the importance of dischargers monitoring their own activities and of the NRA having access to the results, the paper states firmly that self-monitoring needs always to be supplemented by independent monitoring by the NRA (paragraphs 110-112). This contrasts with the assumption under IPC that all necessary monitoring will be carried out not by HMIP, but the discharger himself. We believe that, where the discharger is required to carry out substantial monitoring, the need for independent monitoring is correspondingly reduced.

The difference between NRA and HMIP is apparent also in the public register of compliance data, and their use in prosecutions. Under the Environment Protection Bill and IPC, dischargers have no protection of tripartite samples; indeed, as indicated above, the discharger will be prosecuted on the basis of his own monitoring data which he has been obliged to pass to HMIP. If HMIP choose not to prosecute, that data will nevertheless be available on the public register and could be used in private prosecutions. In contrast, the NRAs' sampling data can be used in prosecutions (where brought by them or by a private prosecutor) only if the tripartite procedure has been followed. This illustrates the need for co-ordinated development of regulatory policy and practice between NRA and HMIP, in respect of effluent discharges from processes subject to integrated pollution control under the Environment Protection Bill.

Yours sincerely

John Lawrence
Director
Group Environmental Laboratory

2695

INSTITUTE OF FISHERIES MANAGEMENT

President: Sir Hugh Fish C.B.E. *Chairman:* J.F. Solbe

OFFICERS:

Hon. Secretary: E.M. Staite, 'Balmaha', Coldwells Road, Hereford

Hon. Treasurer: R.G. Templeton *Hon. Membership Secretary:* V. Holt
22 Rushworth Avenue, West Bridgford, Nottingham NG2 7LF
Telephone: Nottingham 608161 (day) 822317 (24 hours)

Hon. Training Secretary: M. Rowe, 11 Highclere Gardens, Belmont Park, Wantage, Oxon OX12 9YB
Telephone: 0734 399160 (day) 02357 66062 (evening)

Press Officer: Ron Millichamp, 4 King Street, Aberystwyth, Dyfed SY23 3AY. Tel: 0970 611160

D J Brewin Esq
Secretary
Consents and Compliance Policy Group
National Rivers Authority
Severn-Trent Region
Sapphire East
550 Streetsbrook Road
Solihull B91 1QT

18 October 1990

26 OCT 1990
2427

Dear David

DISCHARGE CONSENT AND COMPLIANCE POLICY - A BLUEPRINT FOR THE FUTURE

You will recall that I have written to you on this matter on behalf of the National Federation of Anglers. That response was prepared following my advice. I have now been asked to prepare a response on behalf of this Institute and, following a discussion with the Chairman of the Institute's Council, it has been decided that the sections of the Federation's letter headed 'General Observations' and 'Detailed Observations' should also be adopted by the Institute as their response to the Report. These observations will be placed before the Council at its next meeting, but I feel sure that they will be ratified.

The Institute was formed in 1969 as an International body of people sharing a professional interest in the management of recreational and commercial fisheries. The Institute's objectives include the advancement of the science of fisheries management in all its forms; to improve and elevate the technical and general knowledge and efficiency of the membership and to advance the standing of the profession. We also provide theoretical and practical instruction with a view to awarding qualifications as to competence at two levels. Since the successful management of fisheries includes the provision of a satisfactory environment in which the fish may live, the Institute is vitally concerned that the control of pollution should be both effective and efficient and therefore we have a direct interest in the NRA's report on Discharge Consent and Compliance Policy.

I enclose herewith a copy of the letter referred to from the National Federation of Anglers.

Yours sincerely

Dr P E Bottomley
Chairman, Resource Section

2696

National Federation of Anglers

Headquarters:
Halliday House, 2 Wilson Street, Derby DE1 1PG
Tel. Derby (0332) 362000

19 OCT 1990

D J Brewin Esq
Secretary
Consents and Compliance Policy Group
National Rivers Authority
Severn-Trent Region
Sapphire East
550 Streetsbrook Road
Solihull B91 1QT

17 October 1990

Dear David

DISCHARGE CONSENT AND COMPLIANCE POLICY - A BLUEPRINT FOR THE FUTURE

Introduction

I am writing to you in your capacity as Secretary of the Policy Group under the Chairmanship of David Kinnersley looking into present and future arrangements for the granting of discharge consents, the monitoring of discharges and enforcement procedures and I am now presenting to you the views of the National Federation of Anglers (NFA) on your Group's Report having the above title.

The NFA were formed in 1903 and one of its aims, as set out in its constitution, is to promote 'measures for the improvement of Freshwater Fishery Laws, to safeguard the aquatic environment as it affects, or may affect, the well-being of freshwater fish.....' etc. The NFA comprises 534 member clubs and associations of anglers with a total membership of 286,000 people. These are mainly distributed throughout England and to a lesser extent in Wales. Our membership fish for 'coarse' or Freshwater fish (in the legal sense), which, as you know are to be found mainly in the middle and lower reaches of rivers, lowland drains, canals etc. It is, in general, to such reaches where the majority of significant effluents from trade premises or sewage treatment works are discharged, so that we have a genuine concern that the quality of such waters are maintained at a level so that a well balanced fish population can thrive. We accept that there are other factors which can influence the quality of a fish population, but we consider that good water quality is of primary importance.

General Observations

We have been concerned for a number of years over the piecemeal approach which has developed in the administrative aspects of the pollution control legislation, the attitude of Government in pandering to water authorities in the lead up to privatisation and over the priority given to cost cutting regardless of its impact on the aquatic environment. We therefore regard this report as a major development in taking a sensible and practical step forward towards the elimination of, what only be described as, this very messy situation.

We have given very careful consideration to all of the 33 recomendations and to the arguments in respect of each and in general terms we give full support to all of them, although we wish to make some comment on some, either to underscore their importance or to make some qualification. We have one significant concern, however, and that is whether the Authority will be able to procure sufficient funding to achieve all these objectives. It makes it vitally important that the present consideration of a charging scheme for discharges takes these matters fully into account. Once a charging scheme has been introduced, it will be very difficult, politically, to increase charges by more than the inflation rate afterwards, so it has to be got right the first time. We are also concerned that the introduction of Integrated Pollution Control and the complexities of the new relationship between the NRA and HMIP will not impair the implementation of the proposals under consideration in this document.

Detailed Observations

In paragraph 15, you make reference to 'with one part handed to the discharger'. We have always understood, and it would appear to be good psychology to do so, that the discharger was invited to pick one of the three parts himself rather than to be handed one which might not have been that of his choice. Although you may think that it is a minor point, we consider it to be important and it will not make any difference to the result of analysis.

We should like to underscore the importance of Recommendation 3. We suspect that some of the less scientifically orientated dischargers will not know what potentially hazardous compounds are in their effluents, and therefore such a rubric is essential.

Regarding recommendation 7, we think that it is important to define what level of increase in volume or change in composition would constitute a 'change' large enough to warrant notification to the NRA. This is an area where confusion could arise if this is not done. On a similar theme, paragraph 45 talks about advertising applications only where there is likely to be 'appreciable effect'. Whilst we sympathise with the need not to have to advertise de minimus applications, somebody will have to define the line above which advertising is desirable. We think that the old 10% guidance may well be too high in some cases.

You produce the frequency distribution curve for ammonia on page 17 of the report as a typical one, but will not such curves vary both between different effluents for the same determinand and between determinands? If this is case we think that the imposition of percentile limits may end up by being somewhat arbitrary.

We concur very much with recommendation 8 in connection with absolute limits and, whilst we accept fully what is said in paragrapghs 56 to 60 and recommendation 9, we are conscious that there is still a significant element of suspicion over the introduction of 95 percentiles a few years ago, possibly primarily because they were not understood by those, other than the experts, who are concerned about the quality of river water, and we therefore consider that it will be essential for the NRA, prior to the

introduction of 80 and 50 percentiles (or perhaps even others in some cases), which could be even more confusing, to embark on an education and detailed consultation exercise with such groups as RFACs RRACs, fisheries consultatives, our own organisation and other environmental pressure groups to explain fully and in some depth the significance of the measure and to convince people that, even though this report says specifically that variations will be neutral, this is not another attempt to relax conditions and offer another escape route for potential polluters. Such an exercise would involve some time input on the part of NRA Regional senior staff, but we think that it would be a sound investment. We therefore consider that the mere production of an introductory guidance note as suggested in recommendation 28 is not enough.

In connection with the imposition of percentile limits, it has been the practice at some of the more important sewage treatment works to have a summer and a winter condition for ammonia, presumably on the basis that better nitrification is achievable at higher temperatures and that less toxic un-ionised ammonia would be formed under cooler conditions. We question whether this sort of practice will be perpetuated under the new type of condition.

We refer to paragraph 64 and would comment that we think that any absolute limit for a determinand must have regard to the individual situation, especially to the minimum likely dilution ie. maximum drought conditions in relation to the threshold toxicity of the determinand, including the additive and possible synergistic effects of other substances in the discharge and those already in the watercourse, all with an appropriate safety factor.

We concur with paragraph 69 et sec, but we assume that consent limits will be calculated from the maximum load which could arise from the premises, ie. maximum consented concentration in combination with maximum permitted flow, which could occur and not on average values for loads. It seems to us that only by this means will the NRA be able to protect the river adequately.

We should like to underscore the importance of recommendation 13.

In connection with recommendation 14 and paragraph 77, whilst we sympathise with the problem of the wide variation in past practice and the importance, in certain circumstances of ammonia, we think that a limit should be set for any substance in a discharge which can demand oxygen, enhance the metabolic rate of poikilotherms, cause a disruption to the aquatic physical habitat or be toxic in some way (not necessarily lethal).

With regard to paragraphs 78 to 83 and to recommendation 15, we recognise that the BOD test should only be interpreted as an indicator of organic pollution potential, but the fact remains that it has served a very useful purpose to that end and, so far, nobody has come up with anything better for that purpose, despite its heavy demand on time and laboratory space. However, we would welcome a change to a test which gave as useful an answer, but which could be utilised in an automatic monitor. This is provided that the two tests are run in parallel on all samples from a range of different types of effluent to ensure that a really robust relationship

can be established. The value of long running data sets should, by now, be apparent to all scientists involved with ecological studies and administration, so we cannot over emphasise the importance of establishing such a relationship. It is to be hoped that there will be full publicity given to these relationship studies in due course, so that there can be adequate public debate before the BOD is finally dropped. Again we recognise the need for something more amenable than the suspended solids test for inclusion in an automatic monitor, but we are less hopeful that a satisfactory relationship is capable of being established. Different effluents will pose different problems ranging from inorganic particles from such as gravel washeries, through agglomerated silt particles to colloids. We note that tests will run in parallel for about four years, but we hope that, if a very robust relationship has not been established by 3.5 years, then plans to extend the proving of a relationship will either be extended or an alternative substitute test will be tried.

We welcome the suggestion that toxicity testing should be extended for "difficult" discharges, but we must emphasise that a straight LC50 test may not be adequate for some substances which may show sub-lethal effects at significantly lower levels than 0.1 times the LC50.

We support very much recommendation 17, but have to question whether it will be workable in practice due, for instance, to the prevalence these days of unmanned sewage treatment works which are left in a well secured state.

Although sampling frequency does not come under the terms of reference of your Group, it must be said here that sampling has been found to have been inadequate in the past, in terms of frequency, relevance of the analysis suite to the riverine situation and in terms of its usefulness in conjunction with invertebrate and fish population survey data.

On the question of public registers, we urge that no attempts should be made to reduce the data content of these. Their whole point is to enable the public to make a fair assessment of the performance, firstly, of the effluent in relation to its consent conditions and, secondly, in due course, to be able to assess the performance of the NRA in carrying out their statutory pollution control regulatory functions.

Although we accept the concept of "Action Warnings" as suggested in recommendation 32, we are a little concerned in case, despite the assurances in the report, they should become a surrogate for prosecution, or that they develop into a "points" system, whereby, by a totting up process, after 'n' warnings, the offenders are then prosecuted.

We have already commented in general terms on charges, but on the question of resources, we agree that priorities are very important and we commend strongly the catchment approach as outlined in recommendation 33, especially the need to address the problem of diffuse sources of pollution. This, we recognise, will be difficult, but the NRA should not be deterred by this.

Yours sincerely

SCIENTIFIC AND TECHNICAL ADVISOR

IWEM

15 John Street,
London, WC1N 2EB

Tel: 071-831 3110
Fax: 071-405 4967

The Institution of
WATER AND ENVIRONMENTAL MANAGEMENT

Your Ref: Our Ref: HRE/JG/C13.19

5 November 1990

NOV 1990
2828

Dr. R J Pentreath
Chief Scientist
National Rivers Authority
30/34 Albert Embankment
London SE1 7TL

Dear Dr. Pentreath

"DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

In response to your letter of 26 July, I have pleasure in enclosing two copies of the Institution's response to your Consultation Paper. I am sorry that we were unable to meet your closing date and I am very grateful for the few days extension which you allowed us.

The Institution will be publishing its response in its Journal "Water and Environmental Management", probably the February 1991 issue, but no decision has yet been made as to whether it should be released to the media. If a decision is made to release it I will arrange for you to be advised by telephone.

The Institution would have no objection to the NRA making any part of our response publicly available.

Yours sincerely

Howard R Evans
Executive Director and Secretary

Encs.

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COMMENTS ON THE

NATIONAL RIVERS AUTHORITY

R E P O R T

DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

DISCHARGE CONSENT AND COMPLIANCE POLICY:
A BLUE PRINT FOR THE FUTURE

Comments submitted by the
INSTITUTION OF WATER AND ENVIRONMENTAL MANAGEMENT

GENERAL

1. The Institution is grateful for the opportunity to comment on the Report and welcomes its publication.

2. The underlying theme of the policy set out in the Report is one of rationalisation and IWEM would agree entirely that there is a need for tightening the existing process of determining and monitoring discharges. The approach will create a more even handed system so that industry and operators of sewage works are treated in the same way, but the situation with agriculture and locations such as fish farms or where pollution is more diffused is not adequately addressed in the Report.

3. The final component in a completely open system of information about discharges is the assumption and model used by the NRA in setting limits. Chapter 4 mentions this, but it would remove any accusation of arbitrary processes if the calculations and the values of the parameters were to be published for each river. The system of river quality objectives, which would take into account not only quality but quantity aspects, seems to have been overlooked and this cannot be an appropriate way forward.

4. It is recognised that to reverse recent trends in river quality deterioration a new initiative should be found, but we do not believe that the Report objectively explores other options from the policy being recommended. An alternative policy would be to regularly review consents in the light of river quality objectives and changes in pollution load since the last review, and a period of five years between reviews may well be appropriate. This approach would have the advantage of being able to respond to changes in the river and to take into account changes in individual discharges since the last review.

5. IWEM would suggest that the whole process has been wrongly divorced from charging policy, which cannot be right. The two matters relating to discharges must be considered together.

6. The final major point in these General comments is that the document contains no information about how much the implementation of the recommendations will cost, both for

the NRA and for dischargers. It is claimed in various places in the Report that some of the provisions will be cost neutral, but careful examination of the Report shows that the implications may be extremely expensive to the dischargers in order to avoid prosecution. Before the radical changes proposed in the Report are introduced it is imperative that the implications are properly costed all round, together preferably with the close consideration of the needs of the future application of the Municipal Waste Water directive.

NOTE: In the detailed comments which follow IWEM has used the paragraph and recommendation numbers which appear in the Report.

Recommendation 1

IWEM supports the publication of data as proposed, but feels that consideration should be given to the cost of this 'public information' service being borne by the government and not by dischargers who will pass it through to the water rate payers.

Recommendation 2

This appears to be largely an internal NRA requirement and as such is supported. It is hoped that it will in many cases eliminate the need for investigative charges.

In connection with Recommendation 2 (ii) it is suggested that the annual charge invoice should carry a reminder for dischargers of their duty to inform the NRA of any changes, either qualitative or quantitative, in their discharges.

Recommendation 3

This is a reasonable approach to non-specified constituents in a discharge. However, the presence of a non-specified substance should not be an offence: it is any pollution arising from that substance which should be an offence.

Recommendation 5

In principle, IWEM supports this Recommendation, subject to a proviso that it is restricted to non-numeric consent discharges. However, it foresees a number of possible pitfalls of which the following are examples:

(i) Stringent upper flow limits on marine discharges could cause considerable difficulties to dischargers unless they had the complete co-operation of the

local planning authorities. If maximum flow limits are imposed this could necessitate an increase in the number of storm overflows, which must surely be undesirable as giving increased scope for pollution.

(ii) The NRA personnel involved in the specification should be familiar with all available processes and be careful not to stifle development by appearing to restrict newer methods.

(iii) Conversely, they should be careful to avoid specifications of proprietary equipment or processes which could offer some companies commercial advantage and restrict competition.

(iv) The NRA staff would have to guard against imposing specific facilities or processes in consents in such a way that, if they failed, the NRA could be held liable.

Recommendation 7

Although a wholly laudable proposal this might well be impracticable, would require the utmost co-operation from planning authorities, and probably requires a deminimus approach to increases in the number of dwellings. There should not be a requirement on a sewage works operator to apply for a variation of a consent every time a house was constructed or converted into two or more flats.

Recommendation 8

IWEM welcomes the statement in para. 64 "that the setting of absolute limits must necessarily take into account the circumstances obtaining for each individual discharge", but nevertheless has reservations about the setting of absolute limits. In connection with this it is noted that the Executive Summary, para 2(i) refers to absolute limits being set for "all environmentally sensitive discharges ..... etc", but Recommendation 8 states that "all numeric consents should include absolute limits ..... etc". It is suggested that this ambiguity be dealt with by the NRA and a statement issued.

The variability of biological purification processes must be recognised and that it is almost impossible to guarantee complete compliance with absolute limits unless they are so high as to be of a no value. Even well run sewage works will occasionally fail unless the standards are unacceptably lax and the failure rate can be influenced by varying the sampling frequency.

If there is to be a combination of very tight absolute limits, coupled with full compliance, then enormous sums of money will

have to be spent to ensure that companies are not at risk of prosecution, but without any perceived benefit to environmental waters. If absolute limits are imposed then they should be set to reflect environmental circumstances and coupled with a factor relating the 95 percentile (or some other percentile) to the absolute limit. The factor should be well understood and clear.

The limits could be coupled with a statement that 'the discharger shall take all reasonable steps to ensure that the discharge does not exceed the specified limits'. An exceedence of 2% might not then be unreasonable if the limits are not too high, or a breach could be consistent with this concept of reasonableness if the percentile limit has been complied with, if there is no damage to flora or fauna, and steps are taken to avoid a recurrence.

Paras. 56-60 and Recommendation 9

Contractors have probably been using 50 percentile limits, albeit inadvertently for many years, i.e. designing for a certain average effluent quality. Therefore, providing the transition from the 95 percentile is neutral then the change should present no problem to designers.

The present method of working to a 95 percentile figure is well understood and is a figure which can be given to an operator because it is clear that this is the maximum figure to which he can work. However, IWEM recognises that river quality protection and, where necessary, improvement, and monitoring and control, might call for a change in the figure and would have no objection to a change to the 80 percentile figure.

Recommendation 10

IWEM accepts the use of limits on loads where constituents may build up in receiving waters, but draws attention to the difficulty of control and monitoring in the absence of suitable continuous monitors. It will be a very expensive task which will require simultaneous measurement of flow and concentration.

Paragraph 72 and Recommendation 12

It is difficult to exclude trade effluents from sewers that might have storm overflows. Therefore, the presence of a storm overflow on a sewer should be taken into account when setting the consent conditions to be applied to trade effluents discharged to sewers.

Recommendation 14

It is extremely difficult to achieve better than 5mg/l ammonia on a high percentile figure of samples under all weather

conditions. NRA should indicate how it will assess where it is relevant to set limits for ammonia and whether high standards will be applied only to 80 percentile figures without any absolute limits.

Recommendations 15

IWEM does not support the proposal to adopt the total organic carbon (TOC) test to replace the BOD test. TOC cannot be used satisfactorily to assess organic loads during calculations for the size of purification works and it will still be necessary for BOD analysis to be carried out. As far as the effect on rivers is concerned, the BOD test gives a better indication of the potential deoxygenation downstream compared with TOC which is an ultimate demand.

Under ideal circumstances dischargers should be able to measure the impact of a discharge on the oxygen regime of a river. However, since this is a retrospective measure there is a need to do something in terms of predicting what will happen, and this is to measure the oxygen consuming power of an effluent. Since the consumption of oxygen is a bio-chemical process, it seems reasonable that we should measure bio-chemical oxygen demand i.e. BOD, of the effluent entering the river.

Whilst it is recognised that the BOD test may take 5 days it is useful within the context of building up a picture of a long term trend in a river or even on a comparative basis for the operation of a sewage treatment works. If the NRA requires a test which is rather speedier in analysis and has a more immediate viability, perhaps the appropriate way forward is to develop a more rapid BOD test - an example is the current work to develop a 3 minute BOD which can be used for operational purposes on a comparative basis with 5 days BODs test results.

The use of TOC will not take us far forward as this does not distinguish between bio-degradable and non bio-degradable matter and its only advantage appears to be its applicability to continuous automatic monitoring. Many unsuccessful efforts have been made to replace BOD by COD or TOC, but to use COD or TOC in any meaningful way means that BOD has to be run in parallel to measure the bio-degradable fraction of the TOC and ultimately BOD is the base value.

The NRA should not confuse a wish to introduce automatic monitoring with the more fundamental principles of water quality management. No clear case has been made for the suspended solids limit to be replaced by turbidity, except that it is more susceptible to automatic monitoring, but turbidity will not necessarily give any information on the potential for causing siltation. As far as sewage effluent is concerned it is another feature of inadequate removal of BOD

and is more useful in that context, although it may also give some idea of the aesthetic impact of a turbid discharge into a river.

It is suggested therefore that any replacement of the BOD test required by the need to have quicker results should be replaced by a test that still utilises the biological oxygen demand characteristics of the discharges.

Recommendation 17

Although IWEM accepts the philosophy behind this Recommendation it feels that it must draw attention to the potential hazards of night time sampling in relation to health and safety.

Recommendation 18

IWEM fully endorses the recommendation that there should be regular dialogue between the NRA and dischargers and would suggest that it is essential for NRA staff to continue the practice adopted in some regions of advising dischargers of the results of samples taken.

Paragraph 92

Courts believe tripartite sampling to be a key element of pollution control legislation, but they do not understand the problems with such a system. There is always a significant change in the characteristics of a sample after it is held for a period of weeks, even under refrigerated conditions, and there can never be a reasonable guarantee that delayed analysis will give rise to the same results. If the NRA is going to continue with tripartite sampling they should institute experimental work on delayed analysis to support their case. Failing this their legal officers should find some alternative way of preventing differences of opinion on sample analyses becoming a major issue in the courts.

Recommendation 19

Whilst retaining the element of a random sampling programme, the NRA should announce in advance the sampling frequency that it intends to adopt, e.g. monthly, weekly, etc.

The frequency of sampling affects compliance and, therefore, it has some bearing on the risk analysis that should be done in terms of designing treatment plant.

Recommendation 22

The emphasis that 'special' samples should not be used in assessing compliance is accepted, but it must be stressed that every effort should be made to keep the numbers of samples

taken high enough to give rise to proper assessment within the percentile figures. If normal routine samples are missed for any reason, then a return to the site for a further sample within a few days should still be satisfactory in order to provide proper compliance assessment.

Recommendation 23

IWEM welcomes the recommendation which clarifies an issue which has been debated for some time and because it will avoid the high numbers of failures that can occur when compliance assessment is based on samples, rather than individual determinands.

Recommendation 24

IWEM agrees with the NRA that it should be encouraging dischargers to install automatic monitoring equipment as aids to operational management. However, it seems rather wasteful of resources for these automatic monitors to be connected to the NRA's telemetry system and would seem to be more to do with policing policy than with a genuine interest in environmental improvement. It should be noted that the costs incurred will be passed to the customer and this might become a sensitive issue.

Recommendation 25

Sampling by the NRA will need to be of sufficient frequency to make statistical comparisons in line with the requirements of BS5750. However, IWEM supports the notion of self monitoring in a way which has been developed in other countries. The NRA should be seen to be developing principles and practices which benefit the environment and it should be seen as a pollution control authority rather than as a policing authority. This would certainly be achieved by the NRA auditing self-monitoring by dischargers and by inspecting from time to time records maintained by dischargers.

Recommendation 26

IWEM supports the proposal that on continuous monitoring the NRA should indicate the data required and the degree of accuracy, rather than the equipment to be used. This will avoid any commercial bias in consents and encourage innovation. IWEM also supports the requirements for independent certification of the accuracy of equipment. However, IWEM would like to draw attention to the increased cost implications of additional remote interrogation systems by the NRA.

Recommendation 27

IWEM feels that it is absolutely crucial that dischargers should be kept informed with regard to the fate of the data

being obtained by the NRA. If automatic monitors are connected to the NRA's telemetry system there should be clear understanding of what is going to happen to data in relation to the registers and whether or not the data in itself can be used in prosecutions, or whether it will be used as a trigger to increase sampling.

Recommendation 28

IWEM supports the intention to produce an "introductory note on the meaning and interpretation of percentile limit exceedences".

Paragraph 127

If the proposal for personal designation of management in consent applications is pursued then IWEM would wish to see that such personnel are satisfactorily qualified to operate treatment works and would suggest that its own diploma examination or other method of corporate membership is the most appropriate qualification.

Recommendation 30

IWEM agrees that an application form for a discharge consent from a corporate body should include a designated post of a manager to take a direct interest in consent compliance. However, IWEM does not support the recommendation that it should be a named person. If a post is named in the application form it should be a matter for the NRA staff to establish contacts and an appropriate relationship with the holder of the post.

IWEM would oppose any suggestion that the name of a post or of a person should be included in a consent. There would be very real risk that the holder of the post or person might be held liable for any breaches of the consent or be named in a prosecution, and the consent might need a variation in the event of a change of person in the post, or a change in the title of the post.

Recommendation 32

Formal Action Warnings seem to be an appropriate course of action by the NRA provided that the system is subject to rigorous control and is used sparingly and not for routine warnings.

IWEM believes that if such a system is introduced the NRA will come under intense pressure to publish the names of dischargers who have been given Action Warnings. Publication of the names would be highly inappropriate because it could bring companies into disrepute without any justification. It will be necessary for the NRA to take a firm stand on the non-publication issue.

Paragraph 135

With regard to charges for discharges, whilst IWEM can accept the comments made at the end of para. 135 regarding the charges reflecting the 'use of natural resources', it must be stressed that limits to discharge chemical concentrations must come first. Charges must never be applied in such a way that consent limits are set high and there can be a claim that there is a licence to pollute.

Recommendation 33

Good liaison between major dischargers, particularly the new PLCs, and the NRA will be essential for a prioritised programme to proceed smoothly on a catchment basis. Capital expenditure has to be planned several years ahead and major expenditure might be planned in some order other than that set by NRA priorities.

Staffing Implications

IWEM has some concern regarding the staffing implications for the NRA of some of the recommendations. In a number of instances there are suggestions of minor changes on discharges having to be legally notified. If such conditions are imposed too bureaucratically there will be waste of manpower resources. Recommendations that particularly point up this aspect are numbers 2(ii), 7, 30 and 31.

H R Evans
Executive Director and Secretary

IWEM
31.10.90

The Maritime Pollution Information Forum

(INCORPORATING INLAND WATERWAYS, PUBLIC AND PRIVATE WATER SYSTEMS)

Please reply to:- Miss. Bowering

29th October 1990

Dr. R. J. Pentreath,
Chief Scientist,
National Rivers Authority,
30-34 Albert Embankment,
LONDON. SE1 7TL

30 OCT 1990
2463

Dear Dr. Pentreath,

"Discharge Consent and Compliance Policy - A Blueprint for the Future"

The above Report has been considered by this Forum, and the following comments were agreed at the recent Extra-Ordinary AGM for consideration prior to the introduction of a new and uniform consent and compliance policy :-

1. **Recommendation 4**: will this refer to existing septic tanks? Is the philosophy based on a desire to phase out the use of septic tanks in favour of small sewage treatment plants?

2. **Recommendation 19**: Sampling programmes need to be cost effective in providing the essential information for the basis of enforcement or decision.

3. **Recommendation 24**: Monitoring should be through consent conditions and not be achieved by voluntary arrangements with discharges.

4. **Recommendation 25**: The scale of sampling should be decided in local circumstances but the regime should be formally agreed with the NRA.

Chairman: **COUNCILLOR MRS. B. BAUGHAN**
c/o Great Yarmouth Borough Council
Town Hall
Great Yarmouth
NR30 2QF
Telephone: (0493) 856100

Co-ordinator: **MISS G. BOWERING**
c/o Waveney District Council
80 Clapham Road
Lowestoft
Suffolk
Telephone: (0502) 562111

Treasurer: **MR. R. HARRIS**
20 Beverley Road
Brundall
Norwich
NR13 5QS
Telephone: (0603) 716252

25. **Recommendation 26**: Consents should indicate the specific data needed.

6. It was felt that the NRA must address itself to the issue of maintaining and/or improving its credibility with dischargers, the general public and local authorities.

7. General concern was expressed as to whether sufficient funding would be available to the NRA to carry out effectively these recommended improvements.

8. Dissatisfaction as to the consultation process was expressed, since very few local authorities represented in the Forum had received a copy of the report, and strenuous efforts were required to obtain, or circularise copies.

9. There should be close liaison with local authorities over pollution matters since they have a role to play.

10. There is a need for publicity and consultation with local authorities concerning discharge consents, which should be published in local press when consent conditions are confirmed.

11. Following proposals in the Environmental Protection Bill where Her Majesty's Inspectorate of Pollution will send details of local integrated pollution control consents to local authorities to include in their register, it is thought that a similar system would be an advantage if copies of consents for discharges were also sent to the relevant local authority for retention in a Local Register.

12. The NRA should have a pre-emptive power where pollution is likely to result from a known type of process.

13. Dischargers should be required to have a "Discharge Policy Statement" which should include details of the chemistry of the discharge as well as:-

    (i) discharge peak limits
    (ii) sampling regime
    (iii) emergency action
    (iv) built in Quality Audit Control

14. When considering the local implementations of a discharge, a wider "Impact Analysis" should be considered affecting the marine environment.

Yours sincerely,

Ian G. Watson

for. Gail Bowering (Miss)
Co-Ordinator
Maritime Pollution Information Forum.

NATURE CONSERVANCY COUNCIL

Dr. F. B. O'Connor F.I. Biol
Director, Policy, Planning and Services
Northminster House, Peterborough PE1 1UA Telephone Peterborough (0733) 40345

01 NOV 1990

2504

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

31 October 1990

Dear Dr Pentreath

DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

Thank you for sending the NCC a copy of the above report and for inviting us to participate in the consultation meeting on 9 February, which my colleague, David Withrington, attended.

We would like to congratulate the NRA on having produced such a thorough review of discharge consent practice and procedures. We are concerned that the present system appears to be so flawed. We support all 33 recommendations in the report, but we would like to make some additional comments:

Water Quality Objectives

1. The introduction of statutory WQOs will obviously influence the setting of consents by the NRA as well as the timing of implementing your recommendations.

Non-numeric consents

2. We were surprised to see in Annex 3 the high number of consents for sewage treatment works with no limits set for BoD. The NCC considers that all STWs discharging to fresh water, regardless of size, should have numeric consents. Descriptive consents should be the exception rather than the rule. Without numeric consents, it will be difficult to control the effluent in order to meet WQOs.

Variation in consents for STWs

3. Annex 3 draws attention to the regional variation in consents for sewage treatment works. For example, in Wessex only 17 consents had no limits for one of the three determinants listed, while in Southern the comparable total was 369. We assume that these consents have been the responsibility of the Department of the Environment since 1973, so we do not understand the lack of consistency, unless it can be accounted for by discharges to coastal waters.

Choice of determinants for STWs

4. We anticipate that the draft EC Directive on Municipal Waste Water Treatment will, if adopted, significantly affect consents for sewage treatment works. Indeed, the Government has already announced a major programme of improvement required to discharges of sewage to coastal

waters. The other main provision in the draft Directive is for the removal of nitrate and phosphate at STWs affecting "sensitive areas" subject to eutrophication.

5. The NCC considers that, in the light of the draft Directive and of the widespread evidence of detrimental effects of phosphate (eg algal blooms and eutrophication), it should be added to the list of determinants - BoD, suspended solids and ammonia - for sewage works and relevant industrial discharges to freshwaters and estuaries.

Environmentally significant discharges

6. We would be interested to know what is meant by "environmentally significant", if it is to be used as a category for determining the application of stricter limits in consents. Is there a formula which could be applied for polluting load?

Her Majesty's Inspectorate of Pollution

7. In view of the proposals in Part I of the Environmental Protection Bill to transfer consents for prescribed processes discharging into water from the NRA to HMIP, we assume that HMIP will be following the same procedures, if the Secretary of State accepts your recommendations.

NCC consents

8. As you know, the NCC issues consents, under Section 28 of the Wildlife and Countryside Act 1981, in relation to notice of potentially damaging operations affecting an SSSI. I understand that it was agreed at a meeting at your Headquarters in September that the NCC and NRA would draw up a joint guidance note for our respective staff covering situations where a discharge might need to be consented by both bodies.

Resources for implementation

9. The NCC is aware of the NRA's intentions to introduce a scheme of charges for discharge consent applications to cover administrative costs. Will the charges be set at such a level as to cover the variation of consents following from your review? The NCC considers that the introduction of an incentive charging scheme would contribute not only to financing the reform of the consent system that you envisage but also to achieving tighter Water Quality Objectives, on the "polluter pays" basis.

We would be pleased to discuss any of these points further with you. We do not propose to publish our response, but would be content for the NRA to make all or any of it publicly available.

Yours sincerely

Dr F B O'Connor
Director, Policy, Planning and Services

09 NOV 1990

Telephone: 071-235 5077 Telex: 919669 NFULDN G
Telefax: 071-235 3526

Agriculture House · Knightsbridge · London SW1X 7NJ

Representing Farmers and Growers

9 November 1990

For the Attention of Dr J Pentreath

CC. J Kerr
J Lloyd
M Appleby
Chairman and Vice-Chairman PLUE

NFU COMMENTS ON NRA DISCHARGE AND CONSENT COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

1. We are grateful for the opportunity to comment upon the NRAs recommendations, and for the opportunity to have an imput into policy formation at an early stage. Inevitably most of the recommendations are general, and where they lead to specific proposals for action, we would wish to be involved at a more detailed level.

2. Our comments on the individual recommendations are set out below, and we would be pleased to expand any of the views expressed where this would be helpful.

3. Recommendation 2

We support the recommendation that this design and wording of application forms should help applicants. However, NRA should also consider whether the information being requested is:

a) relevant to the issuing of a consent and
b) likely to be available.

The nature of abstraction licence application forms issued to farmers earlier this year highlighted difficulties caused when application forms are not carefully worded and laid out.

4. Recommendation 6

The dischargers obligation should be to ensure that the discharge remains within consent limits. We regard it as inappropriate for NRA to require particular maintainance provisions and record keeping as part of the consent itself. While proper maintainance and, where appropriate, record keeping, are good practice, it would be wrong for

failure to observe such good practice to constitute a breach of a consent and therefore an offence. Indeed, NRA and the discharger may differ as to maintainance requirements; for example, where maintainance needs are not regular, the discharger will be better able to determine them. The desludging of a settlement pond could fall into this category. We therefore feel that this advice should not be included in formal consents.

5. Recommendation 8

This proposal is unacceptable where fish farmers are concerned, particularly on spate rivers. It runs contrary to the recommendations of the Water Authorities Association Working Party on fish farm discharge consents in 1984. Water inflows frequently contain high levels of suspended solids, and also BOD. Fish farm consents should continue to be incremental and not absolute.

6. Recommendation 9

Discharges from fish farms may vary substantially from time to time but the polluting effect of the major constituent (fish excrement) is principally acumluative one. In these circumstances a stringent absolute limit may be less effective than percentage ones combined with a higher (ie less stringent) absolute level. NRA should consider this approach to consents for all fish farms and comparable situations.

7. Recommendation 10

Assessment of the vulnerablity of streams and rivers to loads from fish farms should be inherent already in the NRA considerations of consents. Recording of load by fish farms should not therefore be required and is in any case infeasible.

8. Recommendation 11

Where effluent flow is related to environmental factors such as rain or river flow, appropriate latitude should be included in the consent for the range of environmental circumstances which may occur.

9. Recommendation 14

We expect to have detailed consultations with NRA about the limits and the forms of ammonia to which they will apply.

10. Recommendation 17

We are concerned about the expense of flow measurement and other monitoring instruments which NRA may require, and has required in the past, particularly where continuous

recording is sought. Agriculture is not capital intensive compared to many other industries, and margins are often low. The expense involved in sophisticated monitoring may be extremely significant to the small businesses concerned, and may not be strictly necessary for proper river management. We emphasise the need to be practical and realistic in the requirements made on farm business. In the case of watercress or fish farms, we point out the flow measurement facilities for both abstraction and discharge points may represent unnecessary duplication on the grounds that almost all water abstracted is discharged, and vice versa. Access arrangements and facilities for NRA staff should not be specified by NRA alone. Access to fish farms carries risk of disease transmission between farms: fish farmers must be entitled to ensure that their operations are not at risk from NRA's activities.

11. Recommendation 18

The discharger should be entitled to easy access to results of NRA's sampling. They will be paying for them.

12. Recommendation 19

We support the recommendation that sampling programmes must be economical. We look forward to consultation with the sampling group.

13. Recommendation 22

The appropriate time period for percentage limits for fish farms is a matter to be discussed in detail with NRA.

14. Recommendation 24, 25 and 26

There is at present no equipment suitable for use on fish farms at a price that a typical fish farm could afford. Furthermore, continuous-self monitoring brings no benefit to typical fish farms while NRA continues to charge for independent checks.

15. Recommendation 28

This recommendation is supported. The fish farming industry has suffered from public misunderstanding of percentage limits and will welcome NRA's efforts to improve the situation.

National Power

30 OCT 1990

2462

Headquarters
National Power PLC

Sudbury House
15 Newgate Street
London EC1A 7AU

Telephone 01-634 5111
Telex 883141
Fax 01-634 5811

(071 dialling code from 6 May 1990)

Dr R J Pentraeth
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON
SE1 7TL

Our ref
WS/NRA/COP/BGH

29 October 1990

Dear Dr Pentraeth

NRA Discharge Consent and Compliance Policy:
A Blueprint for the Future

On behalf of National Power which owns and operates some 40 power stations in England and Wales abstracting and discharging back to controlled waters some 16000Ml/d of water, which has been mainly used for cooling purposes, I am pleased to offer the following comments in response to your letter of 26 July.

We see the Report as an important step in producing a consents compliance policy that is more even handed and better understood both by those who discharge and by the general public. As such, the Report is generally accepted and welcomed but with the following important reservations and qualifications.

- Consent application forms and NRA's policy on discharge consents generally should be compatible with the requirements emerging under Integrated Pollution Control (cf Recommendation 2).

- Combinations of numeric and non-numeric consents must continue to be used for effluents whose quality is highly dependent on the quality of the water abstracted (cf Recommendation 5).

- The responsibility for maintenance of equipment connected with the consent should remain totally within the remit of the Site Manager. It could cloud this responsibility if certain maintenance procedures are stipulated in the consent although NRA might wish to issue guidelines. We believe that good consent compliance practice flows from the establishment of a businesslike dialogue between NRA and the discharger at the local, regional and national level (cf Recommendation 6).

Registered office at Sudbury House 15 Newgate Street London EC1A 7AU
Registered in England No. 2366963

- Because of the 95 percentile rule, the level of determinands in most industrial consents will need to be relaxed numerically to achieve 'neutral transitions' (cf Recommendation 8 and Paras. 63-67).

- TOC is an appropriate replacement for BOD but suspended solids should not be replaced by turbidity (cf Recommendation 15).

- NRA's monitoring costs must be kept to a minimum and be subject, we suggest, to external scrutiny (cf Recommendation 19).

- The introduction of continuous monitoring should be on a voluntary basis. (cf Recommendation 24).

- The principle of 'Action Warnings' is supported but the concept requires further development before its introduction (cf Recommendation 31).

These points and others are dealt with in more detail in the attached note.

National Power will not be advertising this response but we would not object to the NRA making any part of it publicly available.

Yours sincerely

B G Hughes
Water Services Engineer

A1610007

NRA Discharge Consent and Compliance Policy
- A Blueprint for the Future

DETAILED COMMENTS BY NATIONAL POWER

Recommendation 2: The redesign of the Consent Forms should be compatible with site authorisation requirements of HMIP under Integrated Pollution Control (IPC). Under present proposals applications for site authorisations for power stations are required by 1 May 1991.

Recommendation 3: Various constituents in our effluents are often declared in our discussions in the lead up to a consent application but are not included in the actual application because they are of little significance. The rubric should therefore accommodate such situations.

Recommendation 5: More meaningful control of certain constituents in discharges e.g. slight traces of oil and grease, are still best dealt with by non-numeric consents.

Recommendation 6: Although an environmentally conscious discharger will out of good practice keep maintenance records, this should not be part of the consent requirement as it could cloud responsibilities. It might even be used as a defence in the event of a pollution accident. Discussion of good maintenance practices should be part of the general dialogue that is necessary between the discharger and the regulator.

Recommendation 8: This is one of the areas where we have most disquiet. The constituents of many of our cooling water discharges will be a function of the quality of the water abstracted from the river. Our consents should only relate to the small derogation in the water quality not to the absolute level.

Recommendation 9: 'Environmentally significant discharges' must be defined. As in the previous paragraph, the 80% percentile limits must accommodate the varying quality of the input water.

Recommendation 10: For discharges which require the keeping of mass records, this requirement would constitute a high degree of self-monitoring and might reasonably justify an

abatement in the annual charges levied by NRA.

Numeric Transitions (Para. 63-67) Because of the "95-percentile rule", many industrial numeric consents will need to be relaxed to achieve the 'neutral transitions' which are proposed and which we endorse. Each case should be dealt with individually.

Recommendation 12: Agreed. This is particularly relevant to, say, surface water from coal tipping areas.

Recommendation 15: National Power endorses NRA's move to use TOC instead of BOD. However, the adoption of turbidity instead of suspended solids would create severe problems with cooling water discharges when the water abstracted is already burdened with high levels of fine particles.

Recommendation 16: Toxicity tests using fish often fail to identify the offensive constituent and should be used with caution.

Recommendation 17: For security and safety reasons, it is important that NRA Inspectors have a full-proof method of identifying themselves and are familiar with the site layout.

Recommendation 18: Regular dialogue at the local, regional and national levels is considered to be an important aspect in consent compliance policy. NP would like to see all these developed.

Recommendation 19: It is essential that monitoring costs are kept to a minimum in keeping with an effective control policy. There should be regular cost saving reviews and it is suggested that these should be undertaken by an organisation independent of the NRA.

Recommendation 22: 12 month rolling programmes are needed for power stations because of

a) seasonal variations in climate and
b) seasonal variations in the amount of electricity generated.

Recommendation 23: Where there is a correlation between two or more constituents in an effluent and an exceedence by one determinand is accompanied by exceedence of another, this should only be treated as one exceedence.

Recommendation 24: The introduction of continuous monitoring should be on a voluntary basis and we consider that it should therefore be accompanied by an appropriate abatement in the level of annual charges. National Power would welcome the opportunity of assisting in NRA feasibility studies of monitoring equipment.

Recommendation 26: Agreed. This allows for greater freedom in the choice of measuring apparatus.

Recommendation 27: National Power fully supports this recommendation. The disclosure by NRA of the status of any measurements is a further part of the dialogue needed for a good Consents Compliance Policy.

Recommendation 28: Because of the complexity of these concepts it is essential that the results related to the 80 and 50 percentile limits are properly qualified so that they are not misused.

Recommendation 29: With a proper on-going dialogue, the attitude of the discharger should become self-evident should an individual accident occur.

Recommendation 30: The named officer at power stations will be the Station Manager. This practice will also be consistent with the requirements under IPC.

Recommendation 32: National Power accepts this principle but the concept requires much more development before it is introduced. Our comments on Recommendation 23 are also relevant. There would be a serious loss of trust between discharger and regulator if names are made public. Also, the duration for which Action Warnings stay on record should be time-limited.

Recommendation 33: Proceeding on a catchment-by-catchment basis is accepted for a rapid neutral translation of consents. However, over the longer term, priority should be given to reviewing consents to achieve river quality objectives.

National Power - Water Services
WS/NRA/COP/BGH

29 October 1990

A1610005

Our Ref: MGB/SN

Date: 17 October 1990

Mr D Kinnersley
National Rivers Authority
30-34 Albert Embankment
LONDON
SE1 7TL

Dear Mr Kinnersley

DISCHARGE CONSENT AND COMPLIANCE POLICY - A BLUEPRINT FOR THE FUTURE

The report produced under your Chairmanship has been considered by Committees of the NRA Wessex Region and we would like to pass on to you some of the comments which have been made.

We should start by congratulating all those involved in developing a more clearly defined consenting and enforcement policy. It is welcomed not only by those involved in formulating and monitoring consents, but also by dischargers who will have a clearer picture of its requirements placed upon them and the knowledge that a consistent approach is being adopted throughout the NRA.

The great majority of the recommendations contained in the report are clearly consistent with the prime objectives and are therefore welcomed. There are, however, a few points which have arisen from our discussion which you might care to consider.

Recommendation 5 in addressing the issue of non-numeric consents, emphasises the need for specific and unequivocal statements about the facilities and processes from which the discharge is to be made. We have a particular concern about so called "descriptive consents" for small sewage treatment works. These consents have proved difficult to police in practice and whilst inclusion of specifics such as the numbers of houses or other units connected to the discharge would help, the question still remains as to whether any consent which does not include numerical limits should be issued for this type of discharge, since compliance/non compliance with clear numerical limits is easily demonstrated.

One of the difficulties experienced in policing descriptive consents for small sewage treatment works has been defining whether or not a particular works is being operated to the "best of ability". On first examination the inclusion of maintenance requirements in consents as put forward in Recommendation 6 would resolve this difficulty. However, on closer inspection with reference particularly to numeric consents, we feel very strongly that potential difficulties outweigh any advantages. In the past the view has been taken that consent conditions are imposed upon a discharge and it is then the total responsibility of the discharger to ensure that those conditions are complied with. If the recommendation is agreed, it will place an onus on the NRA to define in detail the types and frequency of maintenance of the discharge plant. Even if this were possible (and qualified mechanical and electrical engineers would be needed to even attempt the exercise) there is a need to be extremely cautious of the consequences. If it could be proved that a discharge had failed to meets its numeric consent conditions despite compliance with maintenance conditions, the NRA could find itself severely compromised in any attempt to prosecute.

For similar reasons, whilst welcoming toxicity limits for complex discharges, we feel that the inclusion of sampling frequency within consent conditions, as proposed in Recommendation 16, should be treated with caution. If minimum sampling frequencies are not achieved for whatever reason, the NRA might be seen as a party to contravention of consent.

We wholeheartedly agree that TOC and turbidity offer many advantages over the traditional determinands BOD and suspended solids. However, we feel it important that the aspect of consent setting (involving such factors as breakdown rates, available mathematical models etc) be included in the comparision period outlined in Recommendation 15 in addition to the enforcement comparison.

Within the region, many of us can remember practices of the previous Water Authority where there was a history of various classes of warning letters. This merely served to cause confusion both to discharges and field staff as to exactly what the status of a warning was. Matters are now simplified so that 'a warning is a warning'. Whilst the concept of 'formal Action Warnings' contained in Recommendation 32 has advantages we would seek to ensure that there could be no scope for delay in effecting improvements by a discharger on the basis that an 'informal' warning is of little account and that attention need only be given to remedies when the formal warning is issued.

In considering the resources required to carry through the recommendations of the report, Recommendation 33 proposes a catchment by catchment implementation. As a broad basis we agree with the approach, but hope that sufficient flexibility will be adopted to allow individual major discharges or expansion proposals in catchments not initially assigned high priority to be addressed.

In raising these comments on specific aspects of your Report, we reiterate our earlier remarks welcoming the thrust of the large part and again congratulate you on what we are sure will prove to be a major step forward.

Yours sincerely

LADY DIGBY
Regional Board Member

P W LACEY
Chairman, Regional Rivers Advisory Committee

Signed in absence by:- **NIGEL READER**
NRA - Regional General Manager

cc Dr R J Pentreath

GM/385/t

05 OCT 1990

2239

Dr J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON
SE1 7TL

NRA

National Rivers Authority
Yorkshire Region

Your Ref:
Our Ref: AMCE/SW

4 October 1990

Dear Dr Pentreath

Discharge Consent and Compliance Policy : A Blueprint for the Future

The Yorkshire Regional Rivers Advisory Committee is pleased to have been consulted on the policy report which was considered at its meetings on 12th September and 24th September 1990.

The Committee welcomes the aims of the report and supports most of the recommendations in principle. Members represent a wide range of interests, some of which will be sending their own detailed comments on the proposed policy to the NRA. The Committee is concerned that any policy adopted by NRA takes into account the requirements of the EC Municipal Waste Water Directive when implemented. Otherwise there could be considerable confusion with two varying control regimes.

The Committee recognises that there are considerable resource implications for both the NRA and dischargers which will need to be assessed before any major changes are made. The difficulties of implementing the policy effectively and fairly are also noted. More detailed comments on each recommendation are attached.

The Committee wishes to be kept informed of the progress of proposals.

Yours sincerely

J Whitworth
CHAIRMAN, REGIONAL RIVERS ADVISORY COMMITTEE

SW 036 GEN2

General Manager – Kenneth W. Newham
Rivers House 21 Park Square South Leeds LS1 2QG Tel: Leeds (0532) 440191 Fax: (0532) 461889

REGIONAL RIVERS ADVISORY COMMITTEE

COMMENTS ON THE RECOMMENDATIONS OF THE REPORT ON "DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR HE FUTURE"

Recommendation

1. Support

2. Support

3. Supported in principle although the Water Services Association may question the use of the rubric.

4. Support - Clear guidance needs to be given to applicants particularly because of the change in the law on the control of discharges going to land. Guidance should be linked to NRA Aquifer Protection Policy when developed.

5. Support - Aesthetic considerations need to be included in consents especially to control foaming and colour.

6. Support - NRA should agree the broad principles of the maintenance regime but this should not be too prescriptive as the NRA is concerned with what actually comes out of the pipe and not the running of effluent control processes.

7. Support - Consideration is required of the control of peak discharges and seasonal components.
- Planning Authorities need to follow NRA advice on where new development will cause pollution by overloading sewers and sewege treatment works.

8. Support - Need for rigorous, supportable method for the consistent setting of absolute limits and translation from the 95% limits.

9. Support - Need for practicable and workable limits to avoid protracted negotiations and appeals.
- The move to 80% limit requires further statistical exploration and the examination of worked examples. There is concern that some will perceive the new percentile limits as a lowering of standards while some dischargers may consider it to be a means of tightening standards by the backdoor.

It should be noted the Water Services Association would have reservations over any move away from 95 percentiles.

10. Support - The Yorkshire Region already has some load consents for major discharges to tidal waters.

11. Support

12. Support - Need for nationally approved method for obtaining design criteria to control the effects of intermittent rainfall on sewage flows so as to protect the quality of watercourse receiving discharges from storm sewage overflows and sewage treatment works. Concern was expressed that there could be profound implications for sewerage and sewage treatment works design.

13. Support - The NRA Yorkshire Region already controls most temporary discharges. The need for special monitoring exercises is questioned.

14. The need for consistency is supported. There are differing views as to whether all sewage treatment works with numerical consents should have ammonia conditions or only those which could have a significant effect on the ammonia standards set for the receiving watercourse.

15. Support - Neutral translation from BOD to TOC conditions is essential but maybe particularly difficult for some trade discharges.
- Much investigational work is required before a wholesale change is made. There needs to be a demonstrated major benefit to be gained by replacing BOD by another composite determinand.
- Need for continuous BOD monitors to be investigated and the development of a rapid BOD test.

16. Support - Protocol for toxicity tests required.

17. Support - NRA personnel and company management need to be aware of their respective Health and Safety responsibilities.

18. - It is felt that all compliance results should be sent to the discharger, as is the current practice of the Yorkshire Region. This could be by Register printouts at set intervals, eg quarterly.

19. Support

20. Support

21. Support

22. Support - Seasonal effects should be taken into consideration.

23. Support

24. Support – Members have differing views on whether or not data from continuous or automatic monitoring provided by the discharger, as required by NRA consent conditions, should be included on the public Register and whether it would be "self-incriminating" to use such data as evidence in a prosecution. The technical difficulties to be resolved in handling data from continuous monitors on the Register are recognised.

25. Support

26. Support

27. Support

28. Support

29. Support

30. The principle of having a named contact point is supported but some members consider that use of the consent application form would be too inflexible. A simpler method could be the use of a regularly updated schedule. Individual accountability is a concept which should be encouraged.

31. Support

32. Support - Members agree that warnings issued in respect to consent exceedances or pollution incidents for which prosecution was not undertaken must be recorded on the public Register. There are differing views on whether or not warnings of the risk of consent exceedance should be recorded on the Register with the possibility of subsequent publicity.

33. Support - Suggest that the recommendations be phased in for selected categories of discharge and for selected catchments.

THE NATIONAL TRUST
for Places of Historic Interest or Natural Beauty
36 QUEEN ANNE'S GATE · LONDON SW1H 9AS
Telephone 071–222 9251 · Facsimile 071–222 5097

02 NOV 1990

2812

Dr J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

31 October 1990

Dear Dr Pentreath,

Discharge consent and compliance policy: a blueprint for the future

I am writing in response to the National Rivers Authority's document 'Discharge consent and compliance policy: a blueprint for the future'. The National Trust welcomes the opportunity to respond to this document and a detailed response follows.

General Response

The Trust does not have the expertise to comment on sampling techniques, specific consent levels nor the administrative structures required for the implementation of the policies outlined in this document. It is, however, very much concerned that aquatic resources in the freshwater and marine environments should be positively protected from pollution of all kinds.

The Trust therefore welcomes the proposals in this document. We believe they will help improve in quality, and reduce in quantity, effluents from industrial, agricultural and domestic sources in general. We do, however, view it as unfortunate that these proposals have not been set in the context of the wider problems arising from water pollution in which sense we feel there are a number of serious omissions from the document.

For example, in the Trust's opinion, there should be further consideration given to improving water quality by reducing legal discharges, rather than concentrating on ensuring compliance with existing consent levels. In similar vein, specific reference should be made to the problem of phosphates pollution and the means of tackling it. In addition there is no discussion of biological monitoring or assessing the effects of discharges on wildlife. This is obviously important in order that an impression can be gained of the areas and circumstances in which it may be necessary to reduce consent levels or suspend discharges altogether. It is in this context that the Trust offers the following response on the text of the document.

PRESIDENT: HM QUEEN ELIZABETH THE QUEEN MOTHER
CHAIRMAN: DAME JENNIFER JENKINS · DIRECTOR-GENERAL: ANGUS STIRLING

Specific Response

4. **Page 11, Recommendation 1**

The Trust fully endorses this recommendation.

5. **Page 13, Paragraph 34**

As well as enforcing standards, the Trust believes the NRA and District Councils should provide advice on septic tank husbandry. The pollution of underground water sources from septic tanks is, as well as being very undesirable, expensive and inconvenient, as it may cause the Trust as landowner to replace private water supplies with water from the mains.

6. **Page 13, Paragraph 37**

We are particularly concerned about the effects of sea outfalls on public health, coastal amenities and nature conservation. The Trust welcomes the recent Ministerial agreements on dumping in the North Sea, and recommends that they are used to provide a model for sewage discharge applications for the rest of the UK coast.

7. **Page 14, Recommendation 5**

We also endorse this recommendation.

8. **Page 14, Paragraph 40**

We would emphasize the importance of records of household discharges in rural areas as aggregations of properties may have a significant impact on freshwater systems.

9. **Page 15, Recommendations 6 and 7**

We endorse both these recommendations - the proposal in 7 is especially important.

10. **Page 15, Paragraph 45**

We trust that the basis on which the NRA makes any decision to dispense with advertisement procedures will be made public.

11. **Page 19, Recommendation 8**

The Trust strongly endorses this recommendation given the evidence of infraction of the law by sewage works.

12. **Page 29, Recommendation 17**

We would add the need to provide adequate staff and resources to implement the recommendation.

13. **Page 37, Recommendation 28**

In order to ensure consistent standards throughout the UK, we suggest the NRA also produces explanatory notes for users of

Pollution Registers.

14. **Page 39, Recommendation 29**

We endorse this recommendation in the light of the poor record to date.

15. **Page 40, Recommendation 30**

We regard this as a sensible measure.

16. **Page 45, Recommendation 33**

The 'catchment' basis for operation is one which we strongly support.

Thank you once again for the opportunity to comment on this document.

Yours sincerely

J H Prideaux

J H Prideaux
Chief Agent

Nuclear Electric

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

30 OCT 1990

246

Nuclear Electric plc
Bedminster Down
Bridgwater Road
Bristol
Avon BS13 8AN
Telephone 0272 648111
Telex 44182
Fax 0272 648481

Ext. 8704

Our ref GS/WS/NRA/DC/EVE/LR Your ref

Date 29 October 1990

Dear Dr Pentreath

DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

Enclosed is Nuclear Electric's response to the above Consultation Paper.

In answer to the questions raised in your covering letter of 26 July 1990, Nuclear Electric does not propose to publish this response although it will be available to the CBI and other selected organisations. There is no objection to the NRA making any part of this response publicly available.

Yours sincerely

J J Ludlow
Generation Services Manager
Nuclear Electric plc

Registered office Barnett way
Barnwood Gloucester GL4 7RS
Registered in England and Wales
Registered No 2264251

COMMENTS OF NUCLEAR ELECTRIC PLC

ON THE

CONSULTATION PAPER FROM THE NATIONAL RIVERS AUTHORITY

'DISCHARGE CONSENT AND COMPLIANCE POLICY:

A BLUEPRINT FOR THE FUTURE'

Nuclear Electric plc
Generation Division
Generation Services Branch

GS/WS/NRA/DC/EVE/LR

Production Headquarters
Bedminster Down
Bridgwater Road
Bristol
BS13 8AN

INTRODUCTION

1. Nuclear Electric owns and operates 12 nuclear power stations on 9 sites in England and Wales, as the map attached indicates. These stations abstract and discharge into controlled waters about 25,000 thousand cubic metres (5,500 million gallons) of water per day, mainly utilised for cooling purposes. As a major discharger Nuclear Electric welcomes the opportunity to comment on this National Rivers Authority consultation document.

2. This is also an opportunity to express support to the NRA process of holding consultative meetings with industry. The meeting held in London on 9 February which Nuclear Electric attended on this specific subject, allowed both environmental regulator and discharger to discuss areas of concern which benefited general understanding of the proposals and allowed constructive views to be considered.

3. Nuclear Electric recognises that the consenting system which the NRA inherited of matching consent conditions to existing treatment capabilities is not appropriate to the needs of receiving watercourses. Therefore the NRA having produced a report proposing on how consents should be set, what compliance be expected of them and how that compliance should be assessed and monitored is welcomed.

4. The NRA objective of achieving a discharge consent procedure which is effective and respected from all interested parties, including the public is supported. The main areas that still require addressing from Nuclear Electric's point of view, are outlined by comments on specific proposed recommendations.

THE PURPOSES AND TYPES OF CONSENTS

5. Recommendation 1

If the NRA commit the necessary resources to analysing and publishing annual data including estimates of the degree of compliance can national guidelines be guaranteed to ensure that the data collection and presentation are consistent in all ten NRA Regions.

Recommendation 6

6. All maintenance obligations and records of the site facility should be decided by the site owner. This NRA recommendation could be regarded as interference with plant management. There is also the question of compromising NRA's position if maintenance conditions in a consent are observed but a discharge is still breaching the consent.

LIMITS TO FLOW AND CHOICE OF DETERMINANTS

Recommendation 15

7. Any change of compliance parameters should be taken after comprehensive analysis of the implications from scientific accuracy to extra cost burdens for dischargers. It is reported that some of the NRA Regions have reservations of moving away from Biochemical Oxygen Demand and Suspended Solids to Total Organic Carbon and Turbidity. Firstly that initial setting of the required consent conditions will be made immeasurably more difficult. Secondly that the TOC and Turbidity tests may be inappropriate especially at coastal sites, which all nuclear stations are except one, because of the influence of salinity, fine particles and marine growth.

MONITORING AND THE ASSESSMENT OF COMPLIANCE

Recommendation 17

8. The NRA approach of anytime, any day of the week visits must accept the fact that very large, and complex, sites are not operated for standard visits outside normal working hours. A delay in such circumstances for site sampling and monitoring purposes is liable to be inevitable.

Recommendation 18

9. A regular dialogue between the NRA and discharger covering satisfactory results as well as variations of concern is welcomed, but not evident in all Regions to date.

Recommendation 22

10. A twelve month rolling programme is necessary for nuclear power stations because of seasonal variations due to both the climate and the amount of electricity generated.

11. Recommendation 24

Further classification of 'environmentally significant discharges' is required to fully comment on NRA promoting continuous monitoring techniques. There are the obvious questions of who pays for the buying, installing and operating the equipment and the possible commercial nature of some discharges.

Recommendation 25

12. Where duplication of data collection is occurring the discharger should not have to incur both costs.

13. National sampling frequency guidelines on types of discharge and the receiving waters will require widespread notification. If included as a consent condition there could potentially be difficulties for NRA to meet the requirement, and then who contravenes the consent?

Recommendation 27

14. Welcomes NRA indicating to dischargers what information is expected to appear on the public registers and what information is not to be evidentiary.

THE MOTIVATION OF DISCHARGERS AND OTHER CONSIDERATIONS

Recommendation 30

15. For corporate bodies the legally responsible person under the Water Act 1989 and the site contact for day to day matters will not be the same. An NRA issued statement on the purpose of their requirement would assist in gaining and maintaining a dialogue with a designated site person.

Recommendation 32

16. Formal Action Warnings criteria will require precise scheme details for both parties to avoid serious misunderstandings occurring.

RESOURCE IMPLICATIONS, PRIORITIES AND SUMMARY OF RECOMMENDATIONS

Recommendation 33

17. Catchment by catchment basis may be appropriate in some circumstances but the importance of discharges in relation to impact on receiving water may be more applicable in others.

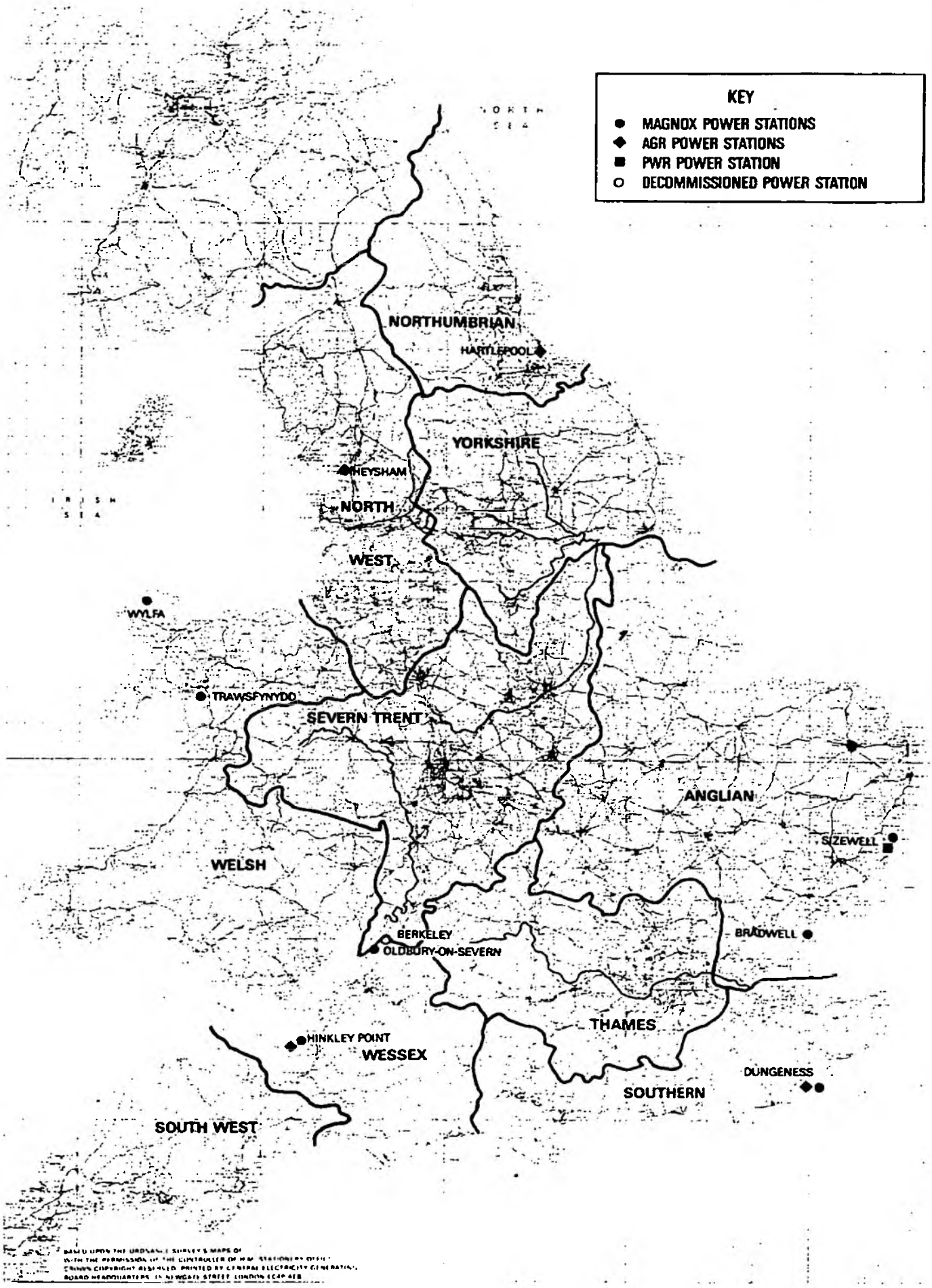
18. Will priorities and progress be available in documents (Corporate Plans, National, Regional, or Catchment) and be discussed with views considered for example at Regional Rivers Advisory Committees and CBI Regional Environmental Committees?

CONCLUSION

19. The above Nuclear Electric comments are made in a constructive manner and are intended to assist in maintaining an evolving dialogue between the NRA and dischargers.

20. A final comment is that Nuclear Electric notes the studies, mentioned in the Environment White Paper' This Common Inheritance: --Britain's Environmental Strategy', issued on 25 September 1990, for NRA incentive charging, (Annex A.19). Therefore this aspect could not be incorporated within the recommendations of this consultation document without further primary legislation.

GS/WS/NRA/DC/EVE/LR
29 October 1990
GENEE0101110/03D



WATER INDUSTRY REGIONAL AREAS AND NUCLEAR ELECTRIC POWER STATIONS

DECEMBER 1989

Natural
Environment
Research
Council

Corporate Affairs Unit
Polaris House
North Star Avenue
Swindon SN2 1EU
United Kingdom

Telephone Swindon (0793) 411500
Direct Line Swindon (0793)
Telex 444293 ENVRE G
Facsimile (0793) 411691 GTN 1434

Miss R M Harris
Head

29 November 1990

Dr R J Pentreath
National Rivers Authority
3-34 Albert Embankment
LONDON SE1 7TL

Dear Dr Pentreath

DISCHARGE CONSENT AND COMPLIANCE POLICY : A BLUEPRINT FOR THE FUTURE

Thank you for providing us with the opportunity to comment on this report. I apologise that the attached response is beyond your deadline but I understand your office was made aware of the delay and indicated that our comments were still admissible.

We do not propose to publish our response but would not object to NRA making it available.

Yours sincerely

ROWENA HARRIS

260.LTR

Based on recycled paper

NATURAL ENVIRONMENT RESEARCH COUNCIL

Comments on NRA Report on Discharge consent and compliance policy; a blueprint for the future

1. General

1.1 In general NERC welcomes the report and its important objective of providing a more effective control of effluent discharges with uniformity across England and Wales.

1.2 NERC's interest in this area is not so much in the approach to handling discharge consents and compliances but more in the concentrations and loads of contaminants used in such consents and compliances. This topic is outside the scope of this policy statement. Nevertheless the following comments are offered on the statement.

2. Terms of reference

2.1 The report is focused on surface waters and, apparently, particularly on setting standards and monitoring compliance at sewage treatment works.

2.2 There is little comment on the relation of this action to the protection of groundwater quality, either as a result of direct discharge to the soil or subsurface, or by indirect effects through the quality of (continuously or intermittently) influent surface watercourses. NERC assumes that it is the NRA's policy to deal with this subject separately in a parallel technical/policy statement on groundwater protection policy. The Hydrogeology Research Group of NERC's British Geological Survey have been actively participating in the harmonisation and development of the national Groundwater Protection Policy at the request of the NRA.

3. Marine outfalls

3.1 The report states the need to define the acceptable level of discharge to protect receiving waters. These levels are not known for many pollutants in inshore coastal marine waters. This is an area of current research by NERC's Dunstaffnage Marine Laboratory.

4. Percentile limits

4.1 NERC generally supports the major change in consent setting from the traditional 95 percentile approach, which requires a high standard concentration of the pollutant in question, to an 80 percentile approach with a corresponding lower concentration level. This will increase the number of exceedences but will give a more accurate assessment of discharge compliance.

4.2 A potential problem with the use of percentile limits is in the episodic nature of industrial discharges related to batch operations. The polluter may time discharges between NRA sampling intervals. A remedy for this problem would be to require constant levels of discharge.

5. Choice of determinands

5.1 Recommendations 11-15 state that only suspended solids, ammonia and BOD (TOC) are individually identified as determinands. Recommendation 16 implies that discharges of other determinands, such as toxic heavy metals, detergents and pesticides, are consented, and their compliances monitored, by a general toxicity test. NERC expresses reservations about the use of such a 'toxicity test' The report does not address the limitations of such a test which does not replace specific analysis of a complex mixture of substances. The report also fails to explain how the test would relate to ecological impacts or long term effects. Quantification of this relationship would require detailed research.

5.2 NERC notes with interest recommendation 15, to replace the five-day Biological Oxygen Demand (BOD) with Total Organic Carbon (TOC) determination. BOD tests need not take five days, however. Presumably the Water Research Centre evaluation took account of more rapid systems for measuring BOD.

5.3 Japanese marine chemists, using high temperature catalytic oxidation techniques, have demonstrated that conventional methods can underestimate actual TOC concentrations. Since the 'missing' component has been shown to be a biologically degradable and oxygen consuming fraction, it is particularly relevant to the evaluation of the oxygen depletion potential of organic discharges to waterways. NERC's Plymouth Marine Laboratory is currently evaluating the Japanese work.

6. Intensity and accuracy of sampling

6.1 Tripartite sampling as referred to in recommendation 19, may not be strictly necessary.

7. Resource implications

7.1 NERC strongly support the use of the catchment based approach as suggested in paragraph 142 et seq and in recommendation 33. The catchment forms the only practical working unit and is a geographical area to which people can relate.

7.2 NERC recommend the need to consider the capacity of the soils within a catchment to retain or produce non-point source pollutants as well as whether "the capacity of the receiving waters... is already overcommitted or close to that,".

7.3 In the short term the NRA's 'receiving waters' approach is understandable but in the longer term an assessment of the sensitivity, susceptibility or vulnerability of soils of catchments to nitrate, slurry and heavy metal leaching, for example, could give an indication of the risk of pollution of the stream draining a catchment. The 'sensitivity' maps could be compared with the present patterns of land use within the catchment, and with pollutant inputs to soils to identify where inputs are exceeding the capacity of the soils to retain them, or where land use was likely to result in release of potential pollutants. The approach would be similar to the 'critical load' and 'exceedence' concept now being used to determine acceptable inputs of acidic pollutants.

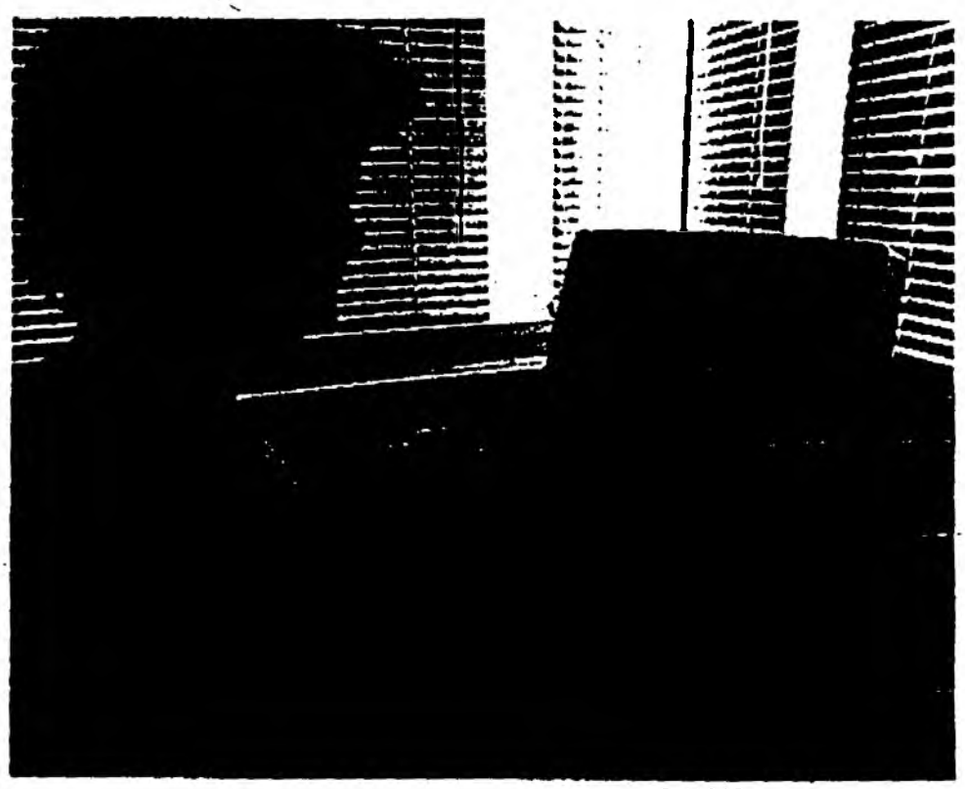
8. Omissions

8.1 An area not addressed is the difficulties of consent setting in a complex river system with several tributaries subjected to multiple effluent discharges. Setting the consent levels to optimise some overall river quality objective will be difficult and some consideration must be given to the interaction between all discharges. The NERC Institute of Hydrology has developed a model called QUASAR (Quality Simulation Along Rivers) for this purpose which allow for rapid assessment of effluent discharges (see attached leaflet).

QUAlity Simulation Along Rivers
Software from the Institute of Hydrology

QUASAR is a river network water quality and flow model developed for use on DEC VAX computers. The program has been designed to be easy to use with no equipment to understand the computer operating system (VMS) or the structure of data files. Output is in the form of colour graphics on screen or plotter, and in tabular form on printers.

Parameters modelled are flow, nitrate, dissolved oxygen, ammonia, temperature, E. Coli, pH, Biochemical Oxygen Demand and conservative pollutant or tracer.



QUASAR software in operation.

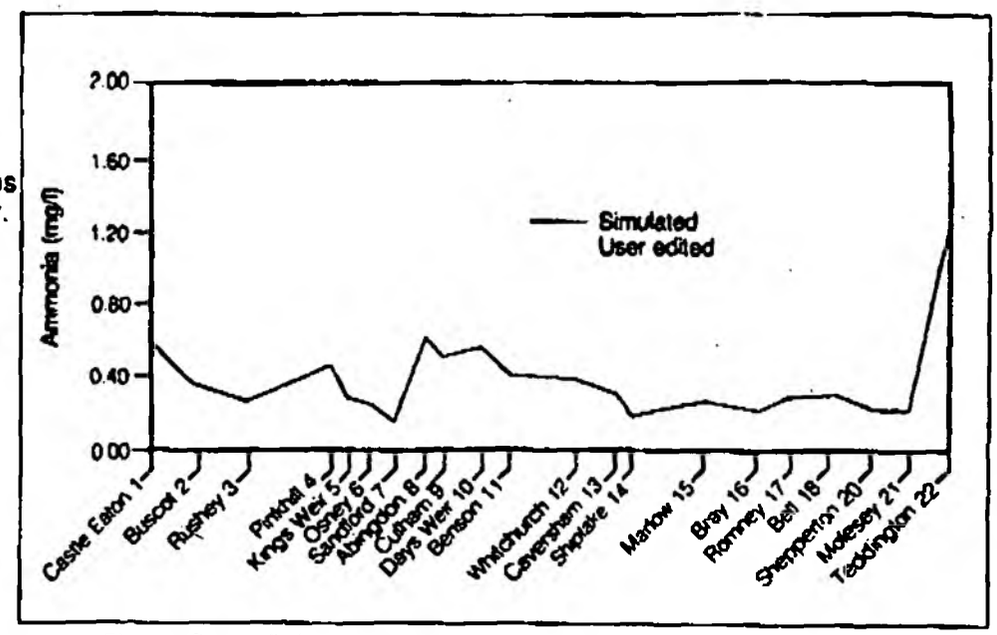
The QUASAR model is composed of a set of equations describing the changes in water quality and flow over time. In its dynamic mode, time series data are input to the model and flow and quality estimates are generated at each reach boundary over a period of time. Travel times are incorporated so that pollution pulses can be tracked downstream. In the planning mode a Monte Carlo simulation approach is used to provide distributions of flow and quality at key sites of interest. Effluent consent levels can be designed to meet River Quality Objectives.

Key features

- Drives DEC VT 100 class terminals and IBM PCs using terminal emulation.
- Entirely menu driven
- Data input from text (ASCII) files
- Interactive data preparation and editing using menus and forms
- Colour graphics
- Parameter sets hold descriptions of model runs
- Planning and dynamic (prediction) modes
- Runs in multi-user environment
- Easily adapted to other river systems
- 8 quality parameters and flow modelled

QUASAR models a river as a series of reaches usually defined by the locations of tributary confluences, weirs, public water supply intakes or effluent discharges. Each reach is subdivided into a number of subreaches each modelled as a stirred tank reactor. At the input to a reach a mass balance is performed on all the inputs or abstractions and the resulting river quality is routed down the reach.

During their passage through the reach the concentrations of the water quality parameters are modified according to instream physical and chemical processes. For example, in the case of dissolved oxygen, additions are made through reaeration and photosynthetic oxygen production and losses occur due to the decay of BOD, the nitrification of ammonia and the respiration of algae and river muds.



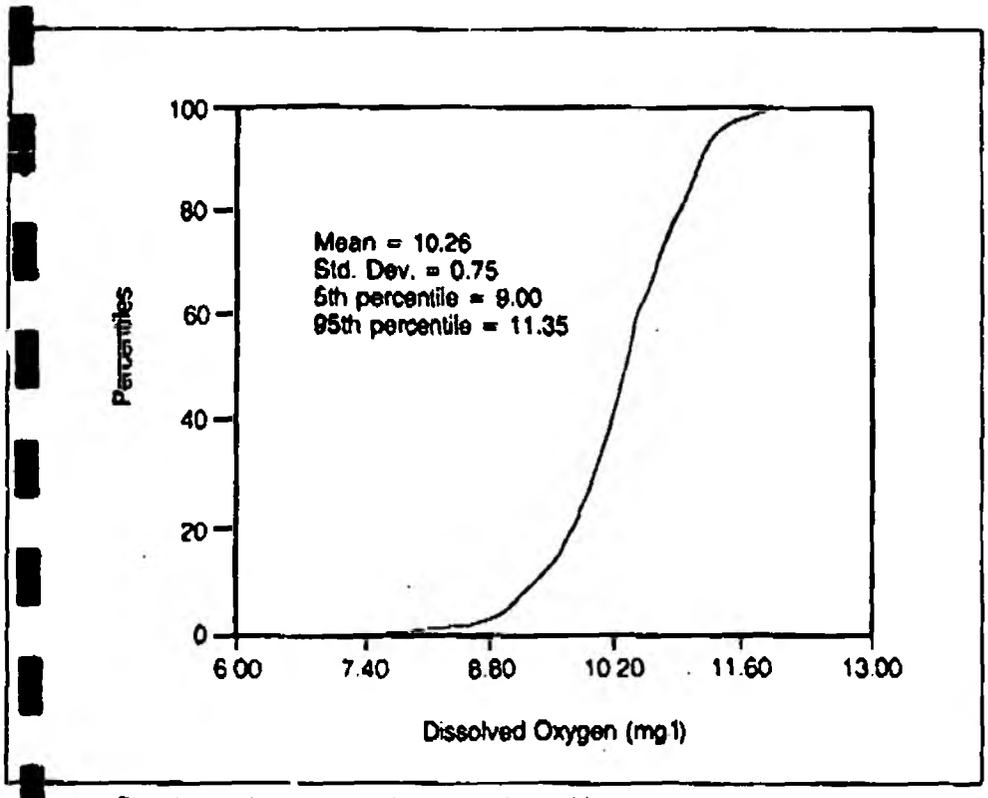
River profile predicting the downstream effects of an ammonia pollution event at Sandford on the Thames.

The QUASAR package

QUASAR currently runs on DEC VAX computers; an IBM PS/2 version is planned for release in 1990.

The following are required to run QUASAR:

- DEC VAX running VMS version 4.7 or later
- UNIRAS Graphics Library version 5.4 or 6.1
- At least 20,000 blocks of disk space (application dependent)
- DEC VT series terminal or compatibles (e.g. VT100, VT220 VT340 or IBM PC with terminal emulation)
- RETOS II VT340 colour graphics are to be displayed on an IBM PC using KERMIT
- Graphical output device(s) compatible with the local UNIRAS installation (e.g. DEC LA50, VT340)



Planning mode output showing distribution and frequency curve for dissolved oxygen at Gunnislake.

QUASAR output

In dynamic mode the simulated water quality and flow can be viewed either as a profile along the river system or against time at any reach of interest (e.g. river abstraction site). In the planning mode cumulative frequency and distribution curves are generated at any point. Rapid graphical colour displays provide an efficient means of assessing the results of model runs.

All Trade marks are acknowledged.
If you require further information on QUASAR please contact:

INSTITUTE OF HYDROLOGY
Wallingford
Oxfordshire OX10 8BB
United Kingdom

Telephone: 0491 38800
Telex: 849365 HYDROL G
Fax: 0491 32256

Natural Environment Research Council

Institute of Hydrology Wallingford Oxfordshire OX10 8BB UK
Telephone. Wallingford (STD 0491) 38800 Fax: 0491 32256 Telex: 849365 Hydrol G

The Institute of Hydrology is a component establishment of the Natural Environment Research Council

Dr. W. H. Emery

For information
Jan Pentreath
D Scott
Chane 4
OP
Rona
16/8/90

1/2/

Office of Water Services
Centre City Tower
7 Hill Street
Birmingham B5 4UA

Engineering Division

JCB 22/8/90
~~16 AUG 1990~~
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15 August 1990

Tel: 021-625-1300
Direct Line: 1315
Fax: 021-625-1311

Mr D M Shearer
General Manager - Regulation
Northumbrian Water Ltd
Abbey Road
Pity Me
DURHAM DH1 5EZ

Dear Mr Shearer

CHANGES TO CONSENT CONDITIONS

1. I refer to your letter dated 3 August 1990. The Director General has asked me to respond on his behalf.

2. My initial views are that changes to consent conditions can be considered in two separate groups, namely those that are concerned with maintaining the environmental status-quo and those that are associated with incremental improvements to the river environment.

(A) Changes to Consent Conditions Maintaining the "Status-quo"

3. Compliance with a revised consent, issued by the NRA to ensure that there is no deterioration in the river environment due to increased pollution load from a sewage treatment works can be considered to be part of your base obligations.

4. In these terms, increased pollution load could be the result of any combination of sewage works rationalisations, growth in water consumption, new demand, new development or changes in trade effluent.

5. The revised consent would be based on maintaining the pollution load on the water course at the higher flows by a corresponding tightening of the determinand limits.

6. It will be noted from our views above that this type of revised consent normally could not be considered a "Relevant Change of Circumstance" (or, more strictly, that the new consent imposes no costs over and above that already taken into account in the initial determination of k, consistent with the guidance in JP Reg G (89)41 Revised). Only if it had been expressly included in the companies agreed Notified Items schedule would the net additional expenditure needed to ensure compliance with such a revised consent be eligible for inclusion in a interim determination.

(B) Changes in Consent Conditions Associated with Incremental Improvement of the River Environment

7. Where the NRA notifies you of a revised consent that has been set with a view to achieving an incremental improvement in the river environment, our view would be based on whether the following had been adhered to:

(1) the revised consent from the NRA has been based on a suitable river quality modelling technique and formed part of a formal strategy for the particular watercourse. The strategy may be of an interim nature pending the formal setting of Water Quality Objectives by the Secretary of State. The strategy should be soundly based in both the environmental and economical areas, recognising the implementation costs for all the polluters of the watercourse, and include a realistic programme of implementation towards the achievement of the Water Quality Objectives by a particular date.

(2) Where (1) was not available, then there was a consensus between the NRA and the sewerage undertaker that the revised consent was an appropriate incremental step to take, towards the achievement of the likely Water Quality Objective.

(3) That the sewerage undertaker, on behalf of its customers confirms that the revised consent and its implementation date in (1) or (2) can be accommodated within its existing programmes or its effects could be incorporated into revised programmes following a periodic review. This judgement should be based on the assumption of a five year review.

(4) If the sewerage undertaker is concerned that the NRA has not based its decision on a sound strategy as outlined in (1) or cannot confirm as required in (3) then there is a duty on him to challenge the decision of the NRA, on behalf of their customers.

(5) If the local NRA and the Undertaker cannot reach a consensus or agreement on the appropriate revised consent then the Undertaker should in normal circumstances appeal to the Secretary of State.

8. The resulting formal revised consents, either by agreement or by decision of the Secretary of State would be considered as a relevant change of circumstance. The net additional expenditure needed to ensure compliance with the revised consent over and above that in the Licence Book of Numbers would then be eligible in considering whether an interim determination should be made.

9. With regard to a clarification of our general approach on Interim Determinations, I intend to circulate in the next few weeks a consultative paper on our approach. Detailed guidance on the use of the Book of Numbers and Watermark was contained in Dear FD Letter 13, and will be supplemented by further procedural guidance as necessary.

10. Finally, I consider that our view on "Changes in Consent Conditions" would be of interest to the other sewerage undertakers. I am therefore copying this letter to them, and also to John Bowman (NRA) and Dinah Nichols (DoE).

Yours sincerely

Bill Emery

BILL EMERY
Head of Engineering Intelligence

CC: C Bolt
A Merry

United Kingdom
Petroleum Industry Association Limited

9 Kingsway
London WC2B 6XH
Telephone: 01-240 0289
Telex: 8952541
Fax: 01-379 3102

Peter Sloan
Assistant Director

1990
24 38

Dr. R J Pentreath
Chief Scientist
NATIONAL RIVERS AUTHORITY
30-34 Albert Embankment
LONDON SE1 7TL

26 October 1990

cc: Mr J A Feltham
D.En

Dear Dr. Pentreath

"Discharge Consent and Compliance Policy : A Blueprint for the Future"

UKPIA would like to thank you for the opportunity to review the above document. We believe the principles set out in it provide a constructive forward plan, the arguments put forward seem reasonable and well presented and we agree generally with the thrust of the document. We have, however, some comments on the recommendation details as follows :-

Recommendation 2 (ii)

There is an implication here that development plans may need to be notified to NRA whereas in the past this was not normally done until an actual project proposal evolved. The intention needs to be clarified.

Recommendation 3

Whilst we accept that a breach of consent limits should leave the discharger open to prosecution, we are concerned that he could be prosecuted for other constituents not specified. Surely the first action, if a non-specified constituent is seen to be causing environmental damage, should be to change the consent rather than bring a prosecution.

Recommendation 5

We believe there is a need to put a clearer definition to the term 'environmentally significant discharge' which is used frequently throughout the report. This could possibly be done by presenting suitable examples.

Recommendations 11 and 12

Placing absolute volume limits on dry and rainfall conditions would seem to be difficult to enforce and therefore somewhat meaningless for an oil industry installation.

Recommendation 16

We agree that toxicity testing is a useful tool for setting determinands but it should not be included as a consent parameter because of the difficulty in using it for discharge quality control.

Continued/....

Recommendation 18

Since dual samples are often tested by the NRA and the discharger, we strongly urge that results of all analyses are shared and certainly the discharger should be informed before any analysis is put on the public register. We must avoid a spurious analysis being placed on the register without proper prior dialogue.

Recommendations 24 - 26

We are concerned that facilities to interrogate equipment remotely could be onerous for the discharger. The NRA's intention here needs further explanation.

We hope the above comments will be helpful in developing the NRA's forward policy and would be happy to discuss them in more detail should you think it necessary.

Yours sincerely

Peter Ploan

PS/dfd/EHS/BE

File 'K' of response

2155

24 SEP 1990

POWERGEN

Moat Lane Solihull West Midlands B91 2JN
Telephone: 021-701 2000 Fax: 021-701 3549 Telex: 338606

Dr. R.J. Pentreath,
NRA,
30-34 Albert Embankment,
London,
SE1 7TL.

File Ref J31.2.1.7

20 September 1990.

Dear Dr. Pentreath,

DISCHARGE CONSENT AND COMPLIANCE POLICY : A BLUEPRINT FOR THE FUTURE

Thank you for sending the above document to PowerGen for comment. Our views on the document are set out in the attached note. We look forward to participating further with NRA in the development of the consent system.

We do not intend to publish our comment separately but have no objection to NRA making it publicy available or to using it in any summary of views.

Yours Sincerely,

G.W. Barrett,
Section Head (Assessment),
Environment Branch.

cc: WSK, RB, file

NRA CONSULTATION DOCUMENT

DISCHARGE CONSENT AND COMPLIANCE POLICY : A BLUEPRINT FOR THE FUTURE

COMMENT ON THE RECOMMENDATIONS

GENERAL COMMENT

The changes being carried out to the UK's long established system of environmental authorisation and control have generated much confusion and uncertainty. The publication of this document is therefore a welcome initiative on the part of NRA. It is to be hoped that this willingness to consult with industry is a signal for the future and that the control authorities will not adopt the austere and legalistic approaches being advocated in some quarters.

In general the document is well thought out and covers all the major issues expected at this stage with the exception of perhaps the most vital issue which is the relationship between NRA and the other control authorities, particularly HMIP. industry has long advocated the need for the "one stop shop" on authorisations and the relationships between the authorities must be sorted out at the earliest stage.

DETAILED COMMENT

Recommendation 3. There is a lack of legal certainty for industry in this proposal and it should therefore be resisted. While there should be the ability to add further substances to an authorisation the onus on pollution control must lie with the control authority. It would not be possible to cover all substances in a licence and once granted a licence, the discharger should be covered only by its stated provisions.

We have one example where information on twenty elements were given to the NRA. Their draft consent only referred to ten on the grounds that they had no EQOs for the remainder. In such cases industry should not be subject to future uncertainty when they have used their best endeavours and the fault (if any) lies with NRA.

This recommendation appears to conflict directly with the proposal in recommendation 8.

Recommendation 6. this appears as a "motherhood" proposal which it would be difficult to object to. However the ability of NRA to inspect facilities and maintenance records must be questioned.

Recommendation 8. The conflict with recommendation 3 has already been noted. The term "relevant" needs some definition. Would pollutants with no defined EQO's be excluded? To maintain the same degree of control as presently operated the approach via an "absolute limit" would require an increase in the numerical consent values. While this would provide the same protection for the environment, it would be difficult to explain to

the public. An approach via a statistical statement of limit values would be far preferable.

Recommendation 16. the necessity for this needs to be queried. The EQOs should have taken toxicity into account. It would be impossible to apply this test to a proposed discharge since the precise quality to emerge could not be modelled.

Recommendation 18. This states that it is not the practice of NRA to notify dischargers on each occasion of the results of samples taken from the discharge. In the past however, such results have been supplied to operational power stations who have found this information useful for ensuring good control of discharges. It would be essential that this practice continues and that results be passed to the discharger as quickly as possible.

Recommendation 19. This states that sampling programme frequencies must be adequate to provide a basis for decision or enforcement. However, paragraph 98 suggests that a percentile compliance assessment should be based on a rolling period as short as three months. This is too short for two reasons. The first is supported by paragraph 50 which points out that variations between samples could reflect seasonal variations. This means that anything less than a twelve month rolling average could not be accepted. The second reason refers to the current frequency of sampling which is around once a month for our discharges. This is perfectly adequate for control and environmental protection purposes. If the frequency of sampling remains as at present, it is unlikely that more than three samples would be taken for the three monthly average. This is obviously insufficient to indicate compliance at anything greater than 50 percentile level.

Recommendation 28. The dangers for public misunderstanding of this approach are clear and recognised in the wording of this recommendation. When percentile approaches are used the public register should not include all events over the threshold but only and indication of when the statistical limit had been breached. Unnecessary public alarm will only be created if all levels over the threshold are published. It is the statistical value, containing both the frequency and level which constitutes the "limit" and not the threshold.

RIVER THAMES SOCIETY

Mr T Berman
Watersmoon
Henley Road
Wargrave RG10 6PE
Tel: Wargrave 403319

17 OCT 1990
2323

Dr.R.J.Pentreath,
Chief Scientist,
National Rivers Authority,
30-34 Albert Embankment,
London SE1 7TL.

15th.October 1990.

Dear Dr.Pentreath,

"Discharge Consent and Compliance Policy,
A Blueprint for the Future".

I refer to your letter of 26th.July asking for comments on the above report to be sent to you.

The River Thames Society was not invited to the original consultation meeting, but we have studied the report with some care, and on 3rd.Ocober discussed our initial response to it with NRA Thames Region (Mr.L.D.Jones, General Manager, Dr.G.W.Phillips, Catchment Control Manager, and Mr.I.Adams, Environmental Quality Manager). They advised us to communicate with you following our meeting.

I enclose the River Thames Society's comments prepared for NRA, Thames Region (in a note dated 27/9/90). Subsequent to the discussion with Thames Region we would wish to add the following:-

The NRA report deals only with a "first phase" exercise of establishing a new methodology for setting and controlling consents; it does not address the "second phase" questions concerning the level at which future consents should be set; this second phase will follow and, we are assured by NRA, Thames Region, will involve consultations with interested bodies including the RTS. The distinction between a first and second phase was not immediately evident from a reading of the report, and consequently some of the RTS comments (eg. under 1.1, 1.2 and 2.4.3) are to a degree pre-emptive. Nevertheless, we would like the NRA to take into account the general concerns of the public/river users, which the River Thames Society represents, as expressed in the enclosed comments.

Registered as a Charity No. 288380; Company Limited by Guarantee No. 1747301;
Registered Office: 4, Park Street, Windsor, SL4 1JF.

In response to your two questions: (a)We are making our comments available to other interested bodies, but have no plans for a general release to the media; (b)We would have no objection to the NRA making any part of our comments publicly available.

Finally, it would be appreciated if you could acknowledge receipt of our comments, and also confirm that the River Thames Society will be invited to participate in consultations concerned with later phases of the implementation of new consents.

Yours sincerely,

TRBerman

T.R.Berman.
Chairman, Pollution Committee.

RTS

RIVER THAMES SOCIETY

Mr T Berman
Watersmoon
Henley Road
Wargrave RG10 8PE
Tel: Wargrave 403319

NRA's DISCHARGE CONSENT AND COMPLIANCE POLICY.

The River Thames Society is in agreement with much of this Report, but it wishes to register its comments and recommendations (i) on some of the general concepts within the document, and (ii) on some of the specific NRA recommendations and statements.

1. GENERAL CONCEPTS.

1.1 Water Quality Objectives

We feel there is insufficient linkage in the report between WQOs and the setting of consent limits.

In para.85 there is only a parenthesis ("monitoring of receiving waters may often be relevant to deciding consent conditions"). Surely, Water Quality Objectives must always be the determining factor ?

This affects Recommendation 9; it also affects paras. 64-68.

One of the main complaints against Water Authorities seeking in the past to relax their consents has been that thay have done this without reference to an objective standard eg.water quality objectives.

Lord Crickhowell (Annex 1, Section 2) makes the same point: that discharge consents have not been based on objective standards.

There is still a gap in this regard in the current "blueprint".

*** RTS Recommendation
We recommend that there should be more emphasis on the agreed WQOs being the main determining factor as to the appropriate consent limits, and that the policy and principles by which the NRA will set objective standards on this basis should be clarified.

1.2 The involvement of and attention to "the public", the "river user", "the consumer".

We feel the report fails to focus sufficiently on the river users who are affected by river pollution.

Registered as a Charity No. 288380; Company Limited by Guarantee No. 1747301;
Registered Office: 4, Park Street, Windsor, SL4 1JF.

While the report does attend to the relationship between the NRA and dischargers (paras. 27,28 & Recommendation 2; para.90 & Recommendation 18) we feel there is barely a nod towards the people who are most affected by river pollution and the river environment ("The public and the media" are finally referred to in para.148)

We would suggest that the NRA as a new organisation should make a conscious effort in this "blueprint" (and other policy initiatives) to jump clear away from what has been perceived as an old Thames Water philosophy: that river pollution, while increasingly important as a public/media issue, was really a matter for experts, and a matter in which ordinary customers or consumers need not be directly concerned. We can give two examples of this attitude, one under the TWA regime, and one under the new NRA regime:-

(i) Thames Water operational management responsible for sewage works are often (unless there has been a big local uproar about their sewage works) unaware and uninterested in the life of the community, the river, the anglers, the boat users, the bathers alongside and downstream from their STWs.

(ii) The new NRA "Town & Country Planning Liaison Procedures, September 1989" under Section 4, Objectives of Planning Liaison ("to ensure that in all matters relating to Planning and Development, public interests which are the responsibility of the NRA are properly looked after") fails to give Pollution prevention as a major heading of "public interest". Why ?

River pollution is not just a matter of dry analysis of chemical and biological samples, not just a matter of water quality for drinking purposes and to sustain plant and animal life in the river. It does also concern real live people and communities, who live by the river, fish in it, boat in it, walk along it, swim in it etc.etc.

It might be said that the above is indeed taken for granted by the authors of the "blueprint". But, we would comment that (i) this is not the impression received, (ii) we doubt whether river users/consumers were sufficiently involved in the preparation of the report (ref. Consultation meeting para 83.) and (iii) there are specific aspects of the document where the involvement of the "river user" needs to be better addressed eg.para 28,

Recommendation2; Recommendation 18; Recommendation 29.

*** RTS Recommendation

We recommend that the NRA should more generally look after the "river users" interests by providing information to and liaising with local planning authorities.

1.3 Measurement of Flows.

The NRA is suggesting (Recommendation 11) that consent limits should be related in some cases to volumes discharged. We do not disagree with this (though we would also comment that flow limits should take into account forecasts based on LPA development plans). However, we are aware that very often where consents are related to flows there is in fact no adequate measurement of the flow in question, and that therefore the consent becomes a dead letter. We would like the NRA to address this problem (as it affect Recommendation 6, Recommendation 10, Recommendation 11/para 70, and Recommendation 12).

*** RTS Recommendation

We trust that the NRA is in a position to insist that the discharger must put in and maintain the necessary measurement equipment (to which the NRA should have access) such that any consent related to flow can be properly measured. In any event, there should be no discharge consents against which the discharger and the NRA are unabl to measure performance.

2 NRA RECOMMENDATIONS.

The RTS is in broad agreement with Recommendations 1,3,4,5,7,8,10,11,12,13,14,15,16,17,19,20, 21,23,24,25,27,28,30,31,32,33. But we would like our comments to be taken into account in regard to the following:

2.1 Para.28/Recommendation 2: Information to the Public.

This section reports on the need for information from dischargers to the NRA. But there is no reference to the need for information from the discharger and the NRA to the public, particularly in critical cases -such as an over-loaded STW.

*** RTS Recommendation

We recommend that it is important for the NRA to ensure "a good flow of information" to the LPAs so that (i) they may be fully aware of the need for planning constraints and (ii) they may be alert to the need to keep the NRA informed about further problems at the point of discharge (See also 1.2 above).

2.2 Recommendation 6. Discharge facilities.

*** RTS Recommendation

We recommend that the NRA should insist that appropriate flow measuring facilities are installed and maintained by the discharger (See also 1.1 above).

2.3 Recommendation 9. "Environmentally significant" discharges to have 80 percentile and absolute limits.

What will be the definition of "environmentally significant" ? How many STWs is this likely to cover ?

*** RTS Recommendation

We recommend that wherever there is concern about the level of WQO/River Classification and/or the Water Quality Objective is not being met, the discharge should be considered "environmentally significant".

2.4 Paras. 64-68.

We are very concerned with the comments in these five paragraphs.

2.4.1 "Realistically attainable" limits.

The reference to "realistically attainable" limits seems dangerous, because this has been the track down which we have gone for the past 20 years, and it has led to a steady deterioration in standards. What is required is "appropriate limits relative to the water quality objectives".

2.4.2 "Cost to the discharger".

How can this be weighed up by the NRA ? The discharger may plead poverty every time.

2.4.3 Neutral Revision.

The report gives the impression that the NRA expects a "neutral revision" ie.neither tightening nor slackening of the consent limits, in the great majority of cases. But, this could only be justified where -as is said in para.67- the existing 95 percentile limits for sewage effluents have previously been derived by an appropriate

mass balance modelling exercise, for which the inputs are still valid. This will surely hardly ever be the case. It is well known that consents were relaxed in previous years -before 1989- in line with what was currently achievable without any regard for the effect on the receiving waters. It would seem likely that there will be a need now to do very many fresh mass balance modelling exercises

*** RTS Recommendation

We recommend that the NRA should not be diverted from allowing Water Quality Objectives to be the prime determinant of discharge consents. This being the case, the NRA, as a matter of policy, should not suggest at the outset that a neutral revision will be appropriate for a large proportion of effluents.

2.5 Paras. 69/70 & Recommendation 12. Limits regulating flow.

*** RTS Recommendation

See 2.2 and 1.1 above.

2.6 Recommendation 18. Regular dialogue between the NRA and the discharger.

*** RTS Recommendation

Whilst we agree with this recommendation, we would like to see another recommendation relating to the need for the NRA to keep the public informed where a discharger (typically an over-loaded sewage works) is tending to cause regular pollution. This should be done via the local planning authority, who then have two responsibilities:
(i) to check how much harm the pollution is doing to the local community, and (ii) to ensure that no further development is allowed to worsen the position.

2.7 Para.93/94. Tripartite sampling.

Since to prosecute on a breach of an absolute limit will require a tripartite sample, does this not mean that all samples will have to be taken on a tripartite basis if there is to be an effective sanction in respect of absolute limits ? Is this feasible ?

2.8 Recommendation 22. Assessment of compliance against percentile limits based on results from "routine monitoring".

The definition of "routine" needs clarification. Defence lawyers might claim that any change in sampling

pattern -possibly initiated by an awareness of pollution problems- would render the sample/monitoring non-routine. (See also para.130).

2.9 Recommendatio 29. Prosecutions.

It is difficult to deny that the NRA should not prosecute in every case where consents are breached. Yet the NRA should be very wary of the experience with HMIP, who never prosecuted an STW under COPA on the grounds that (a) the Water Authority was "doing its best", and (b) that prosecution would not achieve anything.

There should perhaps be a stated expectation that the NRA will prosecute in the large majority of cases where consents are breached, otherwise the consents will lose their credibility both with dischargers and with the public.

*** RTS Recommendation

When the NRA is considering prosecution, we recommend that they should inform themselves of the seriousness of the pollution not just in terms of statistics, but also in terms of the effect on the public : riparian communities, river users, anglers etc. This would be done through the Local Authority (See also 1.1 above)

3. RESOURCE IMPLICATIONS.

The costs of the NRA recommendations will eventually fall on the consumer. Assuming the recommendations are (in due course) fully applied, what are the cost implications ?

Also, further explanation of the step-by-step implementation on a "catchment basis" would be welcome.

27/9/90
TRB.

09 OCT 1990
2250

103 MANYGATES LANE WAKEFIELD WF 2 7DL
0924 - 256868

8 October 1990

Discharge Consent & Compliance Policy

Dear Dr Pentreath

In discussions with NRA- Yorks Region relating to the concepts of constraints of flows in STW consents, I identified three other areas of concern. As the comments on flow conditions require further work I am detailing the three areas below, and will let you have the information with respect to flow later.

Table 1 & 2. From my knowledge of Yorkshire, where there are some 600 STW, with some four hundred numerical consents, I was surprised to find the total used was 568.
In your commentary in Annex 3 with reference to the distribution of BOD limits, it would have been more meaningful if the fully treated flows (final effluents) had been seperated from the partially treated flows (settled storm sewage). This is identified by the 199 discharges in Table 1 with a 150 mg/1 consent limit.

Common Basis. Throughout the report there appears to be a view that there should be a communality between the "Industrial" and the STW consent. One point that is apparent when reading existing consents is that the STW consent frequently is a multi-discharge document. (see above) and this will be referred to in my comments on flows.

Upper Tier/Absolute limits. There is very little published data with respect to influent raw sewage to plc STW's. However, there is enough to question as to required removal of pollutants (just considering the sanitary determinands) as to whether there is a lesser than good operational practice requirement.

I trust these comments can be incorporated into the proposals, as appropriate, to assist in improving and simplifying the discharge consent and compliance policies.

Yours sincerely

J Claxton-Smith Adviser-RIVERWATCH

Dr J Pentreath
Chief Scientist
National Rivers Authority
30/34 Albert Embankment
LONDON SE1 7TL

103 MANYGATES LANE WAKEFIELD WF 2 7DL
0924 - 256868

29 OCT 1990

24 October 1990

NRA: DISCHARGE AND COMPLIANCE POLICY
A BLUEPRINT FOR THE FUTURE

Dear Dr Pentreath

I am following up my letter to you with a series of points related to STW flows, with specific reference to their descriptions and definitions in Discharge Consents.

Attached to this letter is a diagram which will be referred to in this letter.

My concern relates to the current conventional practice of defining the fully treated flow - FTF - (treated sewage) in terms of DWF conditions and a 24 hour period. You may well recall that Welsh Water gathered together 15 definitions of DWF.

Which 24 hours are to be considered? The preceeding 24 hours, the succeeding 24 hours, or a point on the spectrum between the extremes ?

Referring to the diagram which shows the diurnal variation of Base flow (DWF), the full treatment weir (FTW) setting (conventionally 3xDWF) , together with the partial treatment weir (PTW) setting (conventionally 6xDWF).

Analysis of the hydrograph diagram indicates that the words " the volume of treated sewage effluent discharged under dry weather conditions shall not exceed X cubic metres in any period of 24 hours.", appears to mean that the volume can vary from Base flow (DWF) TO FTW (3xDWF) setting - a three to one ratio in a 24 hour period. Does this form of words stand up in a court of law?

I note that there is usually only one flow condition for each of the FTF (treated sewage), PTF (storm tank overflow) and UTF (flow over the PTW (6DWF weir)), and this is for a wide variation in flow in the receiving watercourse. eg Summer/Winter.

I draw your attention that industrial discharges have a seperate consent for each discharge - often 5/10 or more for the larger concerns. Is this an area for the 'common basis approach' as proposed in the paper ?

There is a seperate issue that I would wish to bring to your notice. In para 45 there is indication that applications for consents will be advertised. It is surprising that this item does not justify a recomendation, even if only to publish the guidelines when the NRA considers that the discharge will have no appreciable effect on receiving waters.

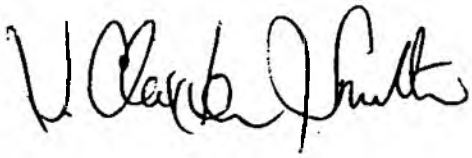
May I hope that these comments and issues raised will assist the NRA to improve the discharge and compliance policy.

I have raised four specific points where I hope you will be able to provide me with specific answers.

1) which 24 hours?
2) why FTF (treated sewage) flow is seemingly so imprecisely defined? A three to one ratio?
3) why multiple consents for STW's ?
4) why no recommendation - para 45 ?

I look forward to hearing from you.

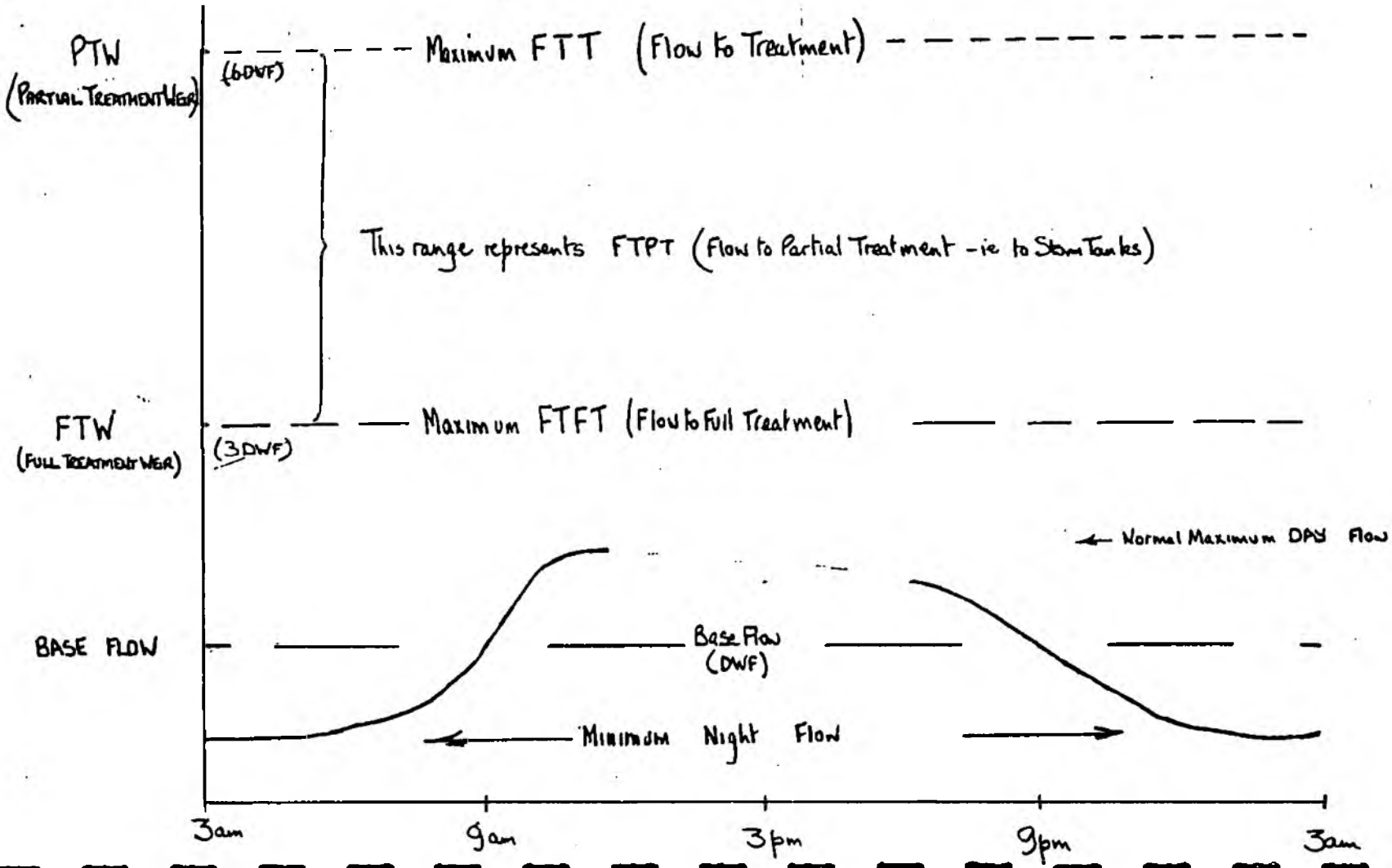
Yours sincerely



J Claxton-Smith
Adviser - RIVERWATCH

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON SE1 7TL

STWorks HYDROGRAPH - DIURNAL FLOW PATTERN (SCHEMATIC)



Royal Commission
on Environmental Pollution
Church House
Great Smith Street
London SW1P 3BL

Direct line: 071-276 2109
Enquiries: 071-276 2080
Facsimile: 071-276 2098

Your reference

Our reference

24 September 1990

26 SEP 1990
2182

Dr Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

Dear Dr Pentreath

DISCHARGE CONSENTS AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

The Royal Commission was pleased to receive a copy of the above report on which you have asked for comments by 31 October.

The Commission very much welcomes the publication of the report, which is on a topic of considerable importance to the protection of water quality.

The Commission agrees with the authors of the report that the existing position is unsatisfactory. The creation of a consistent and coherent framework for England and Wales for discharge consents and measures to secure more even application than in the past, better compliance and stronger enforcement are all to be welcomed. The Commission considers that the report represents a very significant step in that direction.

The Commission notes, in particular, the recommendations on the setting of limits, the choice of determinands, monitoring of compliance, enforcement and implementation. The views expressed have much to commend them and the Commission will give these careful consideration during its current study on fresh water quality, on which it plans to report next year.

Although I am not publishing this response, the Commission has no objection to the NRA making it publicly available.

Yours sincerely

Brian Glicksman

B GLICKSMAN
Secretary to the Commission

R · S · N · C
The Wildlife Trusts
PARTNERSHIP

ROYAL SOCIETY FOR NATURE CONSERVATION
The Green · Witham Park · Waterside South · Lincoln · LN5 7JR Tel (0522) 544400 · Fax (0522) 511616

26 October 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London SE1 7TL

2466

Dear Sir

"DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

Thank you for consulting the RSNC Wildlife Trusts Partnership over the above report. We welcome its comments and wish to give our support to its recommendations. It contains good, strong proposals which will be very helpful in the process of controlling pollution of the aquatic environment. However, RSNC considers that a number of issues are not tackled and that further measures are required.

The RSNC Wildlife Trusts Partnership appreciates that the document is designed to ensure that existing and future discharges comply with NRA consents. However, we consider that insufficient attention is given to the need to improve water quality and to restore the natural communities of aquatic flora and fauna. While many waters are able to accommodate existing legal discharges without detrimental affects on wildlife, this is not always the case. RSNC considers that any policy relating to discharge consents should make clear that legal discharges may need to be reduced.

In order to assess the effects of discharges on wildlife biological monitoring must be carried out and this must be sufficiently sensitive to reveal whether or not discharges are having an adverse effect on natural plant and animal communities. We understand that monitoring methods are under review, but RSNC will only be able to support the adoption of monitoring which is sensitive to wildlife. Present methods of assessing water quality are widely recognised as being inadequate: but there is no mention of this in the report.

While discharges of potentially toxic materials are well covered in the report there are omissions. Those identified are the potential problems of "chemical cocktails" arising from the mixing of more than one discharge in close proximity, the potential problems of the discharge of water of a higher temperature than the receiving water and the potential problems of release of "nutrients" rather than "pollutants". How does the NRA propose to deal with a series of legal discharges into one watercourse where the combination of substances released are polluting? Altering the temperature of water can have serious affects on natural aquatic communities. Release of "nutrients" may completely alter the balance of natural communities.

/...

Dr R J Pentreath 26 October 1990

There is no discussion of extreme conditions eg drought. When receiving waters are suffering from low flow it may be impossible to discharge without causing environmental damage, particularly when wildlife is under "stress". RSNC would like to propose a provision for the NRA to order a suspension of discharges in "emergencies" - a discharge equivalent of Drought Orders.

In sampling procedure RSNC considers that it would be advantageous to publish the methodology used by the Authority. This would enable NGOs and individuals to follow the same procedures and could assist the NRA in its work.

In charging for discharges RSNC is concerned about the present proposals which reflect the cost of monitoring rather than the cost to the environment. There is an oblique reference to this in paragraph 135 and RSNC would like to emphasise that "the use of natural resources" should refer primarily to the potential of the water for use by its wildlife.

The RSNC Wildlife Trusts Partnership would welcome consultation on the priorities for dealing with consents. In recent years the trend appears to have been for the "worst" rivers to show some improvement while the "best" rivers have declined in quality.

RSNC considers that the priority for action should be to enhance the quality of the better waters while not allowing those with low water quality to decline further.

In fulfilling its duty to promote conservation RSNC would hope that the NRA is aiming for all waters to fulfil their ecological potential.

Yours faithfully

T S SANDS
Senior Head of
Conservation Education and Publicity

RSPB

THE ROYAL SOCIETY FOR THE PROTECTION OF BIRDS

THE LODGE · SANDY · BEDFORDSHIRE · SG19 2DL · TEL: 0767 680551 · TELEX: 82469 RSPB · FAX: 0767 692365

05 NOV 1990

2823

1 November 1990

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
London
SE1 7TL

Dear Dr Pentreath

Discharge Consent and Compliance Policy

Thank you for including the RSPB amongst the bodies consulted by the NRA on the development of future policy upon discharges to the aquatic environment in England and Wales. I have great pleasure in enclosing the RSPB response to your consultation. The RSPB would be content for the submission to be made publicly available by the NRA. If you have any questions upon the submission, please do not hesitate to contact Dr Roger Buisson, Water Policy Officer, who is handling this matter.

The RSPB welcomes the open manner in which the NRA has gone about developing its policy in this important area, recognising the need to consult widely at an early stage. The RSPB hopes that it has set a precedent for major policy formulation across all functions of the NRA. During the first year of the NRA, now completed, RSPB staff have been concerned that a number of functions, particularly conservation and flood defence, have not made best use of the advice that is available from other bodies, either directly or through the statutory committees. The RSPB hopes that in the coming years the NRA will make use of the knowledge and experience that is available from outside bodies which have been in existence for many years.

Yours sincerely

Graham Wynne

Graham Wynne
Director, Conservation

Action for Birds

Registered charity no. 207076

Patron Her Majesty the Queen President Magnus Magnusson Chairman of Council Adrian Darby Director General Ian Prestt

Response of the Royal Society for the Protection of Birds to the NRA consultation document "Discharge consent and compliance policy : a blueprint for the future"

Summary

The RSPB welcomes the manner in which this consultation has been carried out and most of the recommendations for action that are made. The RSPB has a small number of reservation about the recommendations, making some recommendations in turn. These are upon numeric limits on the loads of persistent substances discharged from batch processes and the content of the public registers of discharge consents. The RSPB also expresses concern about a number of important issues which were not detailed in the consultation document but are considered by the RSPB to be of sufficient merit to justify attention by the NRA. These are implementation of the action programme of the Intergovernmental Conference on the North Sea, the need for phosphate discharge consent limits, public consultation upon the system of Water Quality Objectives and the enforcement of percentile limits.

1 Introduction

1.1 The Royal Society for the Protection of Birds (RSPB) is the largest voluntary nature conservation body in Europe and celebrated its centenary in 1989. The primary objective of the RSPB is to conserve wild birds and the environment in which they live and breed. It has a total membership in excess of 800,000 and employs over 500 permanent staff. The RSPB manages 118 nature reserves in the UK covering c75,000 hectares.

1.2 This document is divided into a response to general issues, matters arising from specific NRA recommendations and matters which the RSPB would wish the NRA to address.

2 RSPB response : general

2.1 The RSPB welcomes the open manner in which the NRA has gone about developing its policy in this important area, recognising the need to consult widely at an early stage. The RSPB was pleased to be invited to attend the presentations and discussion held in London on 9 February 1990 and to submit a response to this document. The RSPB hopes that it has set a precedent to be followed by all functions of the NRA when formulating policy upon major issues.

3 RSPB response : the specific recommendations

3.1 Where no response is made to a recommendation it can be understood that the RSPB welcomes the intention of and agrees with the recommendation without further qualification.

3.2 Recommendation 5

The RSPB would be concerned if non-numeric consents upon marine outfalls did not always include a numeric upper limit upon the maximum volume, load, presence of trade effluents and persistent chemicals in the discharge. It is likely that impending EC "framework" and "daughter" Directives will require such absolute limits in many cases.

3.3 Recommendation 9

The RSPB agrees that percentile limits have a useful role to play and that they should be used in addition to absolute limits for significant discharges. Parties other than the intending discharger and the NRA must be involved in the process of identifying those discharges which are significant and the sensitive receiving waters which require such additional regulation.

3.4 Recommendation 11

The RSPB agrees that all numeric consents must include an absolute limit upon flow. In addition they should include percentile limits upon flow as has already been recommended for limits upon the concentration of substances. This is necessary in order to maintain a similar tight control over the load of substances discharged to the environment.

3.5 Recommendation 16

Whilst accepting that toxicity testing is a useful addition to the consent in the cases of complex wastes from batch processes, such toxicity testing alone cannot be used instead of numerical limits in many circumstances. The principal objection to the use of toxicity testing is that it only measures acute effects. Consequently such a test will produce a misleading measure of the environmental impact of a discharge which contains persistent or accumulative substances. The RSPB recommends that numerical limits, especially relating to load, are retained for all discharges from batch processes for substances which are persistent or liable to accumulate and are known or believed to be present in the discharge.

3.6 Recommendation 28

In addition to the inclusion of an explanation of the percentile limit system in the public registers, the register should include a number of other details for it to be of full use to the general public and interest groups.

The RSPB recommends that the register includes clear and concise indications of :

Which samples have been taken in a tripatrite manner,
which samples exceed the absolute limits,
which samples are part of the planned montitoring programme to determine exceedances of percentile limits,
which samples have been taken during a specific investigation,
which samples were provided by the discharger and would not be used in evidence by the NRA.

The RSPB recommends that the NRA produce a consultation document for wide circulation upon the public registers addressing the issues of national consistency, clarity of data presentation, use of information technology etc. Such a consultation document should be targetted specifically at the needs of the users of the public registers, that is the general public and their organised representatives, the NGO environmental groups. It is these people who make use of the registers in their actions to protect and improve the environment.

4 RSPB concerns about matters inadequately addressed in the document

4.1 Intergovernmental Conference on the North Sea

The UK Government is committed to a number of policies and actions for the protection of the North Sea environment. The NRA has a major role in achieving those policy and practical objectives through the operation of its discharge consent procedure. The consultation document fails to address how discharge consents can be used to reduce discharges of the most dangerous substances to the aquatic environment. Such reductions will have to be made in a manner which is both open and logical in order to be acceptable to dischargers, the public and the Governments of other North Sea states. This ommission is surprising in view of the fact that the issue is addressed, albeit briefly, in the pollution control section of the NRA Corporate Plan 1990/1991.

The UK is committed to a specific action programme to reduce the inputs of certain substances into the North Sea. These are that "Red List" substances should be reduced by at least 50% over the period 1985-95 and that the particularly hazardous substances (dioxins, mercury, cadmium and lead) should be reduced by at least 70% over the period 1985-95. The consultation document has not addressed how the NRA is to achieve these reductions through the discharge consent procedure.

The UK is committed to the implementation of the "precautionary approach" when determining pollutant loads of persistent and bioaccumulative substances which can be permitted to enter the North Sea. The consultation document has not addressed how the NRA is to apply the precautionary approach when determining consents.

4.2 Consistency of consent content across NRA regions

The consultation document makes reference to the surprising lack of consistency across regions upon the application of consents for ammonia concentrations and recommends the adoption of a consistent approach. The RSPB has been alarmed over the absence of concentration or load limits upon phosphate in discharge consents. The RSPB recommends that as a matter of urgency the NRA should introduce phosphate consent limits for significant discharges to freshwater bodies suffering from or likely to suffer from eutrophication. This should be done in advance of the proposed EC Directive.

4.3 Quality objectives

The purpose of a discharge consent is to ensure that a specific water quality objective is achieved. It is important that NRA staff determining consents understand the purpose of the objectives. Under the former Regional Water Authorities' system for setting objectives, the water quality needs of nature conservation were grouped with amenity interests. This was a wholly inadequate approach.

The RSPB recommends that there is full public consultation on the proposed system of Water Quality Objectives, detailing for which water "users" (drinking water abstraction, fisheries, conservation etc) it is proposed to set an objective. This should be followed by public consultation upon the specific objectives for each watercourse.

4.4 Enforcement of percentile limits

The potential costs of the enforcement of percentile limits should not inhibit the NRA from introducing this control measure in addition to existing or new absolute limits. Enforcement will require a number of tripartite samples to be taken over a specified period, a procedure which is costly and can be perceived as resource limited. This is not so since the costs can be recovered throught the courts in the case of a succesful prosecution or from dischargers in general where a prosecution does not result.

BINNIE & PARTNERS
Redhill
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17 DEC 1990
Job File

The Salmon & Trout Association

Patron: H. M. Queen Elizabeth the Queen Mother
President: Lord Home of the Hirsel, KT, PC, DL

7th December 1990

Dr. R.J. Pentreath
Chief Scientist
National Rivers Authority
30/34 Albert Embankment
London SE1 7TL

Dear Dr. Pentreath

Discharge Consent and Compliance Policy -
A Blueprint for the Future - Water Quality Series No. 1

You asked for our comments on the subject Report. As explained in our telephone conversation of 13th November we apologise for the late reply but particularly wished to discuss the document in our Conservation and Water Resources Policy Committee before replying.

Yours sincerely,

James

James Ferguson
Director

Fishmongers' Hall London Bridge London EC4R 9EL
Telephone: 071-283 5838 Fax No: 071-929 1389

SAFEGUARDING GAME FISHERIES AND ANGLING

Discharge Consent and Compliance Policy
A Blueprint for the Future
Water Quality Series No. 1 July 1990

Comments by Salmon and Trout Association on the above Report.

Recommendation 1	Supported and welcomed.
Recommendation 2	Supported but it is suggested that the applications could be "batched", to avoid piecemeal consideration.
Recommendation 3	Noted
Recommendation 4	This Recommendation should be strengthened. All septic tanks should require consents.
Recommendation 5	This Recommendation is loose and vague.
Recommendation 6	The inspection of records and facilities should be regular rather than occasional.
Recommendation 7	Supported and welcomed.
Recommendation 8	Supported and welcomed.
Recommendation 9	Supported to the extent that it does not undermine the importance of recommendation 8.
Recommendation 10	Agreed but should be essential rather than desirable.
Recommendation 11	Supported
Recommendation 12	Agreed.
Recommendation 13	Inclusion of a sampling programme would be beneficial.
Recommendation 14	Agreed
Recommendation 15	Agreed but the period of data gathering should be not more than five years
Recommendation 16	Supported
Recommendation 17	Supported
Recommendation 18	This recommendation could be best achieved with a variably timed sampling programme.

Recommendation 19	Agreed
Recommendation 20	Agreed
Recommendations 21, 22 and 23	
	Alternative sampling using voluntary bodies should be considered.
Recommendations 24 & 25	
Recommendations 26, 27, 28 and 29	
	Agreed
Recommendation 30	The sentiment is admirable but the wording could be more precise.
Recommendation 31	Noted
Recommendation 32	Agreed
Recommendation 33	Supported

SOUTH WEST RIVERS ASSOCIATION

(formerly South West Riparian Owners Association)

Secretary
STUART.J.GARDINER
68 TREFUSIS ROAD
FLUSHING
FALMOUTH
CORNWALL TR11 5TY

15 OCT 1990 2300

Dr.J.PENTREATH.
NATIONAL RIVERS AUTHORITY
30-34 ALBERT EMBANKMENT
LONDON
SE1 7TL

0326-77177 (24 hours)
0326-78074 (fax)
45129 (telex)

12 October 1990

Dear Dr. Pentreath.

NRA Discharge Consent & Compliance Policy Report

The Association unreservedly welcomes this Report which we feel will enormously enhance the Public's confidence in the NRA as the "Water Guardians".

We applaud the way the authors have constructed their report . From the frankness used to analyse past and current fundamentals right through the build up to its recommendations , the report is lucid , logical and comprehensive and when implemented will surely lead to an effective consent system holding public respect.

We support the three key changes proposed .

We feel that the promotion and acceptance of the wider use of technology in the form of continuous automatic monitoring is fundamental to the long term effectiveness of the NRA , as the cost of trying to run the NRA as a labour intensive service would be unacceptable and quite inappropriate in the 21st. century.

We support the substitution of Total Organic Carbon for BOD and that of Turbidity for Suspended Solids as a sensible step , as indeed is the emphasis to be placed on restricting Ammonia.

We particularly welcome the move to put controls for all discharges including Sewage Treatment Works on the same footing with all to have absolute limits . We like the concept of additional 50 or 80 percentile limits which we feel will be a real incentive , for dischargers , to work towards operating their works at best achievable standards rather than just within an absolute standard.

We applaud the general thrust of argument deployed throughout the report in engaging the discharger at all times , in accepting his continuing responsibilities for positively managing his discharges. To this end we welcome the concept of "Action Warnings" though we would like to see the NRA keep a register of such formal warnings.

We would have liked to see a stronger expression of the need to sample the peak loads of Sewage Treatment Works , which more often than not appear outside office hours. Apart from this and other minor questions of semantics we support all the 33 recommendations made.

We hope that the NRA will be allowed by Government to fully implement this report and that the necessary resources will be forthcoming to allow this to happen in as short a time as is reasonably practicable .

The NRA are welcome to use any part of this letter as it sees fit and finally may we say how much we look forward to the next paper in the " Water Quality Series ".

Yours faithfully

SOUTH WEST WATER PLC

Peninsula House
Rydon Lane
Exeter
EX2 7HR

RECEIVED
23 NOV 1990
KINNIE & PARTNERS

Telex: 42604 SWW FLD G
Fax: (0392) 434966
Tel: (0392) 219666

Your Ref:
Our Ref: WJD/MH/JLP/2.17.1

Date: 9 November 1990

Dear Gordon

REGIONAL RIVERS ADVISORY COMMITTEE: KINNERSLEY REPORT

Please find belatedly my comments on the Kinnersley Report. I trust you may still accept these and give them due consideration. I suspect that you may well have heard the water industry arguments before but, in the interests of the customer who must ultimately pay the bill (and we are all customers), NRA must be mindful of the following matters of concern:

1. Regulation of Wastewater

The Report proposes that Water Service Companies and industrial dischargers should be regulated identically. Whilst not seeking this to be less strict, detailed regulation needs to differ to accommodate the widely varying discharges received at a treatment works over which Water Service Companies have no control. Industry, on the other hand, does have direct control over its inputs and therefore outputs. Existing measures of regulation do recognise this fact and caters for this inherent variability.

2. Absolute Limits

The Report proposes a combination of percentile limits which should normally be achieved, and absolute limits which must never be

Continued .....

G Bielby Esq, BSc
Regional General Manager
National Rivers Authority
Manley House
Kestrel Way
EXETER
EX2 7LQ

SOUTH WEST WATER PLC

breached. Whilst this is fine in theory, for reasons outside the control of the undertaker as indicated above, in reality it is virtually impossible to guarantee that any individual sample will not breach an absolute limit. No matter what level of investment, there will always be some risk of failure at some time or other and to eliminate that risk will cost vast sums of money with disproportionate returns in terms of significant environmental improvements. Clearly, such expenditure could more usefully be applied in dealing with other environmental problems.

3. Real Time Monitoring

With real time monitoring as proposed in the Report, process control would need to be absolute and cater for all eventualities. On technical grounds this does not seem feasible in the foreseeable future and again the costs would be prohibitive.

4. Timing

Any changes arising out of the Report must be compatible with decisions yet to be taken on statutory water quality objectives, changes in river classification, new methods for environmental assessment and the new EC Waste Water Treatment Directive. There should be no significant new regulatory requirements until these decisions have been taken. Water Service Companies are already fully challenged by the new consent regime and any piecemeal changes will only disrupt that current programme and be significantly more costly for Water Service Companies and hence the customer.

5. On a more positive note the recommendations aimed at standardisation of procedures and working instructions across the ten NRA regions are welcomed as a measure of uniformity and objectivity.

Yours sincerely

Bill.

W J DICKENS
Director of Technical Affairs

STAVERTON PARISH COUNCIL

1 Woodland Close
Staverton
Totnes
Devon
TQ9 6PQ

Tel: Staverton 516

26 October 1990

Public Relations Section
N.R.A. Severn Trent Region
Sapphire East
550 Streetsbrook Road
Solihull
B91 1QT

01 NOV

2503

Dear Sir

COMMENT UPON THE REPORT "DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

The existence of this report was drawn to this Council's attention by a News Release dated 26 August 1990. This was forwarded to the Council by Anthony Steen M.P. who is well aware of the Council's interest in river quality. The Release invited comment from various relevant bodies, including Local Authorities, by 31 October 1990.

A large section of the river Dart runs through Staverton Parish. The Council places a high priority on the maintenance of water quality for drinking water abstraction, Salmon and Trout fishing, and the maintenance of an attractive amenity for both local people and the economically essential Tourist Industry.

Against this background, we welcome this report as the first step in regulating increasing, but often unintentional abuse of the river systems, and make the following comment:

1. Staverton Parish Council puts high priority on the implementation of recommendations : 2, 3, 6, 7, 12, 17, 30, & 31.

2. With regard to paragraph 34 & recommendation 4.
   The Parish Council expresses concern with reference to discharges from septic tanks, particularly in the immediate vicinity of water courses.

   An ideal system would require the N.R.A. to be informed by the discharger when type and/or volume of effluent to be processed by an existing septic tank is liable to change. Similarly, there should be some form of statutory necessity for the monitoring of quality of discharge and the regular maintenance of the tank.

3. The Council is interested to know if and how recommendation 16 can be applied to a Sewage Treatment Works carrying a consent to discharge toxic substances it receives in industrial effluent. The Council's understanding of legalities is necessarily limited. We believe that the current onus rests with the discharger to notify the Water Company concerned. The water company must then inform the N.R.A. of potentially significant toxic discharges.

3. CONT/

The Council believes that there should be a legal requirement for industry to seek direct advice from the N.R.A. on potentially toxic waste products. A statutory obligation to monitor and inform the N.R.A. of any changes in chemical composition of the discharge should rest with the discharger. (The example known to this Council is of sheep-dip derivatives being discharged into the river via a Sewage Treatment Works as a result of processes at an industrial woollen mill.)

4. We would welcome the report group's clarification of chapter 3, paragraph 43. The Council is aware of at least one Treatment Works where this statement is totally incorrect. Is this paragraph still accepted as accurate by the N.R.A.?

In the view of the N.R.A. what action will be taken against Water Utility Companies who are unable to meet "tighter conditions again at or before April 1992"?

5. Staverton asks that, particularly in sensitive or large-scale applications for new or varied consents to discharge, the term "local authority" used in chapter 3, paragraph 45, should include notification being sent to relevant Parish Councils as well as District Councils. Perhaps by a method similar to that used for Planning Application notification by the District Council.

Staverton Parish Council would welcome the N.R.A's response to our comments and look forward to a time of increasing rather than decreasing standards of water quality.

Yours faithfully

Hilary Langley

Hilary Langley (Mrs)
Vice-Chairman

NATIONAL RIVERS AUTHORITY
SEVERN-TRENT REGION
RECEIVED
29 OCT 1990

Direct Line:

WATER SERVICES ASSOCIATION

Chairman:
Bernard Henderson, CBE
Secretary:
Michael Carney

01 NOV 1990
2505

Lord Crickhowell
Chairman
National Rivers Authority
Rivers House
30/34 Albert Embankment
London, SE1 7TL

30 October 1990

Copied to
PC
[illegible]
31/10.

Dear Lord Crickhowell Nick

I enclose our response to your consultation on Discharge Consents and Compliance Policy: A Blueprint for the Future.

A copy of this response goes to Chris Patten, John Bowman and Dinah Nichols.

Yours sincerely

Bernard.

BERNARD HENDERSON

Enc.

BVH/ea
02L136

The Water Services Association of England and Wales
1 Queen Anne's Gate, London SW1H 9BT
Telephone Switchboard: 071-222 8111 Facsimile: 071-222 1811
Registered Office as above Registered Number 1710723

DISCHARGE CONSENTS AND COMPLIANCE POLICY:

A BLUEPRINT FOR THE FUTURE

1 PREFACE

This response to the National Rivers Authority (NRA) report is made by the Water Services Association (WSA) and represents the views of all ten water and sewerage companies in England and Wales (WSCs).

The WSCs support initiatives which lead to real and sustained environmental benefit. It is a key element of their businesses that they should provide the infrastructure to do this and be accountable for the achievement of standards. Whilst understanding the NRA's duty to ensure compliance, WSCs consider that the proposals, in the Report, go beyond what is necessary to protect the environment.

Implementation with these new proposals would require extensive further investment and increased operating costs, all of which will have to be borne by the WSCs' customers. Some of the proposals will, in themselves, produce little perceptible benefit to the environment. The NRA Report is just one of several initiatives seeking to raise the standards in the management of waste water. These include the EC Directive on Municipal Waste Water - scheduled for publication this year, and the establishment of the Statutory Water Quality Objectives in 1992. Clear planning and phasing of all these eventually agreed requirements is essential if necessary environmental improvements are to be achieved at a realistic cost.

WSCs are strongly of the view that the recommendations in the report and their cost and price consequences must be given very careful consideration by Government before decisions are taken on future action. Meanwhile they would welcome discussions with the NRA to provide a better understanding of the proposals and identify practical ways of meeting a shared objective to improve the water environment.

Following these discussions, WSCs would wish to present their own suggestions for a phased implementation of change to meet a wider range of requirements, including the new European Community Legislation.

Response to the National Rivers Authority Report
by the Water Services Association

October 1990

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2. OVERVIEW

In considering the NRA's proposals the WSCs have had regard to the following:

- the environmental benefit which results from the implementation of the proposals;
- the cost of implementing the proposals, so far as these can be established;
- the scientific, legal and statistical validity of the proposals;
- the balance between a rigid regulatory regime and the NRA's stated wish for an open dialogue with dischargers;
- the work involved in making changes to the regulatory regime;
- other probable changes to the regulatory regime arising from national and European Community legislation.

2.1 A very high proportion of the rivers in England and Wales are of excellent or good quality. Despite the constraints on investment in the sewerage services imposed by successive governments between 1974 and 1989 the water industry has contributed to major improvements to the water environment. The United Kingdom is among the leaders in Europe in the provision of sewerage and sewage treatment facilities.

2.2 Legislation which came into force towards the end of 1989 sets a clearly defined financial and regulatory framework within which WSCs are required to invest further in order to meet prescribed standards.

2.3 **SOME MILLION (NOVEMBER 1989 PRICES) WILL BE SPENT ON IMPROVEMENTS TO SEWAGE TREATMENT OVER THE NEXT TEN YEARS. THIS FORMS PART OF A LARGER PROGRAMME OF IMPROVEMENT TO SEWERAGE SERVICES AT A TOTAL COST OF MILLION. THESE COSTS WILL BE BORNE BY CUSTOMERS THROUGH INCREASED CHARGES.**

2.4 Investment programmes to meet this new requirement are in hand and it is generally recognised that the implementation of the necessary works will put extraordinary demands on the resources and skills available. **IT IS ESSENTIAL THAT ANY ADDITIONAL CHANGES DO NOT DETRACT FROM THE SUCCESSFUL COMPLETION OF THESE PROGRAMMES.**

2.5 Changes that will bring real benefit are welcomed, but some recommendations in the Report appear to be aimed at simply changing the regulatory regime. If adopted they will result in a cumbersome administrative burden and additional cost. Of great concern are the technical changes in the setting of consent standards which would result in further heavy investment which would be passed on to the

customers. Some of the proposals will produce little perceptible benefit to the environment.

2.6 Both industrial and domestic customers already have to bear substantial increases in charges to meet the existing investment programmes. If the NRA recommendations are implemented they will be faced with a further substantial increase.

IN THE SHORT TIME AVAILABLE TO US WE HAVE ENDEAVOURED TO ESTIMATE THE COST OF THE NRAs PRINCIPAL PROPOSALS. IN ANY SPHERE OF ACTIVITY, IT IS DIFFICULT TO CALCULATE THE COST OF ACHIEVEMENT OF ABSOLUTE STANDARDS. HOWEVER, THE COLLECTIVE PROVISIONAL ESTIMATE OF THE WSCs INDICATES THAT THE FIGURE COULD BE AS HIGH AS MILLION CAPITAL, TO WHICH HAS TO BE ADDED AN ADDITIONAL OPERATING COST OF SOME MILLION PER YEAR.

THE POSSIBLE COST OF INTRODUCING WIDESCALE AMMONIA STANDARDS ALONE COULD BE OF THE ORDER OF MILLION WITH A FURTHER INCREASE IN OPERATING COSTS OF MILLION PER YEAR.

IN THE CASE OF HOUSEHOLDERS IN ENGLAND AND WALES THE PROPOSALS IN THE REPORT COULD ADD APPROXIMATELY PER ANNUM TO THE AVERAGE PRESENT CHARGE OF PER ANNUM FOR WATER SUPPLY AND SEWERAGE SERVICES.

2.7 It is imperative that the costs and other resource implications of these proposals, for both the WSCs and the NRA, are taken fully into account. This important factor was recognised (item vi pages 4 and 5 of the Report) when the NRA Policy Group was established, but has not been addressed in the subsequent recommendations. IT IS IMPORTANT THAT THIS OVERSIGHT IS DEALT WITH SATISFACTORILY BEFORE ANY PROPOSALS ARE ACTED UPON. This is particulary necessary in view of the recent public statement by the NRA that the impact of the Report recommendations would be cost-neutral. WSCs can find no evidence of this.

2.8 In the Report (pages 6, 7 and 8), attention is drawn to differences between consent limits applied to sewage works and those to industry in general. IT MUST BE BORNE IN MIND THAT WSCs HAVE A STATUTORY DUTY TO ACCEPT EFFLUENT DISCHARGED INTO THE SEWERAGE SYSTEM, SUBJECT ONLY TO CONTROLS IN RELATION TO TRADE EFFLUENT DISCHARGES.

2.9 The volume and composition of sewage received for treatment, particularly where rainfall drains to the sewers, can fluctuate widely. The effectiveness of biological treatment processes can be severely affected by adverse weather conditions. By way of contrast, production processes creating an effluent for treatment can be designed and operated by the industrial discharger so that the flows and composition required to be treated can remain approximately constant. This significant difference is explicitly recognised in the Water Act 1989 ('the Water Act') which states that:-

"It shall be the duty of the authority (ie the NRA), in exercising any of its powers under any enactment, to have particular regard to the duties imposed, by virtue of the provisions of part II of this act, on any water undertaker or sewerage undertaker which appears to the authority to be or to be likely to be affected by the exercise of the power in question".

THESE FACTORS REQUIRE FURTHER CONSIDERATION

2.10 Paragraph 9 of the Report described as 'piecemeal' previous changes to the consenting regime. These changes were the inevitable consequent of an evolutionary process. WSCs would agree with the NRA that now is an appropriate time to review a number of aspects off the regulatory regime, provided that such a review is set in the context of:-

- the introduction of statutory water quality objectives, pursuant to section 105 of the Water Act;
- changes to the present national river classification scheme and standards;
- changes in the methods of environmental impact assessment;
- the implementation of the draft European Community Directive on the Treatment of Municipal Waste Water.
- the Environmental Protection Bill and the implementation of Integrated Pollution Control.

WSCs BELIEVE THAT ALL THESE PROSPECTIVE CHANGES MUST BE CONSIDERED AS A WHOLE BEFORE ANY MAJOR REVIEW OF CONSENTS IS UNDERTAKEN.

2.11 In the light of comments in the Report regarding an alleged 'piecemeal approach', it is ironic that the NRA recently arbitrarily changed the consenting policy for effluent discharges prior to the consideration of this Report. This has resulted in unnecessary delays, uncertainties and extra costs, without the NRA having made any evaluation of these issues before the policy was introduced.

WSCs CONSIDER THAT THIS INTERIM CONSENTING POLICY SHOULD BE WITHDRAWN PENDING FULL CONSIDERATION OF ALL ISSUES RAISED IN THIS RESPONSE.

2.12 NRA propose ultimate abandonment of the well understood BOD and suspended solids criteria in favour of TOC and turbidity which are less related to river quality requirements.

WSCs BELIEVE THAT A SOUND TECHNICAL CASE MUST BE MADE BEFORE ADOPTING NEW QUALITY CONTROL CRITERIA INSTEAD OF BOD AND SUSPENDED SOLIDS.

2.13 WSCs are also concerned that certain of the enforcement proposals place considerable emphasis on prosecution. They wish to establish an open working relationship with NRA in the interest of pollution prevention and environmental improvement. A policy which places undue emphasis on prosecution would discourage this.

WSCs WOULD WELCOME DISCUSSIONS WITH THE NRA WHEN IT WOULD BE POSSIBLE TO EXAMINE THEIR PROPOSALS IN MORE DETAIL.

2.14 Detailed comment is made against each of the recommendations in Section 3; the two issues for which WSCs have prepared provisional cost estimates are:

i) NRA propose to impose absolute limits on all discharges with numeric limits. These absolute limits are not to be exceeded at any time.

WSCs DO NOT ACCEPT THAT A CASE HAS BEEN MADE FOR THE NECESSITY TO INTRODUCE SUCH CONSENT CONDITIONS. IMPLEMENTATION WOULD ONLY BE PRACTICABLE ON AN EXTENDED TIMESCALE AND THE COST OF APPROACHING FULL COMPLIANCE WOULD BE HIGH.

ii) NRA proposed greater emphasis on restricting ammonia in effluents.

WSCs ARE CONCERNED THAT ANY NEW OBLIGATION FOR AMMONIA REMOVAL SHOULD ONLY BE IMPOSED WHERE NECESSARY FOR ENVIRONMENTAL REASONS.

2.15 The highlighting of the above issues in no way detracts from the importance of all the matters raised in this response.

2.16 WSCs RECOGNISE THE NRA's ANXIETY TO ACHIEVE A CONSENT SYSTEM WHICH WORKS EFFECTIVELY AND HOLDS THE PUBLIC RESPECT. IN SEEKING A SOLUTION TO THIS NEED, IT IS ESSENTIAL THAT FULL ACCOUNT IS TAKEN OF ALL FACTORS, INCLUDING MODERN METHODS OF QUALITY CONTROL; THE PROCESS TECHNOLOGIES AVAILABLE AND THE LIKELY NEED FOR CHANGES TO MEET IMPENDING NEW EUROPEAN COMMUNITY REQUIREMENTS. THIS WILL REQUIRE DISCUSSION ON A RANGE OF TOPICS - NOT LEAST THE COST IMPLICATIONS AND SHOULD INCLUDE THE DEPARTMENT OF THE ENVIRONMENT AND THE OFFICE OF WATER SERVICES.

3 DETAILED CONSIDERATION

This section comments on each of the recommendations in the Report.

3.1 The Availability of Data

Recommendation 1: The NRA should commit the necessary resources to analysing and publishing annually data about the numbers of consents in operation, and the discharges they regulate, with estimates of the degree of compliance among those regularly sampled. Publication of data then available should in any event begin in 1991.

We note this and agree.

3.2 Information for Discharges

Recommendation 2: The NRA should review urgently the layout and guidance given for the completion of application forms for consents.

Administrative difficulties for the NRA could be avoided if the NRA consult WSCs before completing this exercise. Information in the application has no standing in relation to the conditions of the consent. It is hoped that an extra administrative burden will not fall on applicants.

3.3 What the Consent Covers

Recommendation 3: Numeric consents should be self-contained in their drafting, and should include a standard rubric to the effect that they are not to be taken as providing a statutory defence against a charge of pollution in respect of any constituent for which they do not specify limits. Existing consents should have this rubric added.

WSCs are of the view that it is not the presence of unconsented substances in an effluent which should give rise to an offence, but rather any pollution that might be caused by them. However, until the proposed rubric is drafted, little comment is possible. When it is available, WSCs will wish to examine its terms very closely.

3.4 Which Discharges Require Consent

Recommendation 4: Where not already available, NRA Regional Offices should prepare a leaflet on the areas where spetic tanks etc do and do not require consents, and maintain regular liaison with District Council Planning Offices about these demarcations.

WSCs wish to be notified as to the presence of septic tanks which might affect groundwater used for public supplies; this requirement to be included in the NRA's groundwater protection policy.

3.5 Non-Numeric Consents

Recommendation 5: Whereas numeric consents are mostly focussed on limits to be met by the effluent discharged however it may arise, non-numeric consents must often be specific and unequivocal about the facilities and processes from which the discharge is to be made. This applies especially to marine outfalls, and will make the consent

conditions for them notably different in some respects from those conventionally applying, for example, to sewage works discharges.

WSCs (and their predecessors) have worked successfully with the Department of the Environment and Her Majesty's Inspectorate of Pollution to agree conditions for descriptive consents for sewage works and for marine discharges. We would hope to work in a similar way with the NRA, but it must be for the discharger to decide the type and form of treatment necessary to attain the consent conditions.

3.6 Descriptive Consents and Maintenance Obligations

Recommendation 6: For all types of consents including simple descriptive ones, maintenance obligations and the keeping of maintenance records should widely be standard conditions. Where necessary these obligations should cover all the facilities associated with the discharge, and there should be occasional inspections of the facilities and (where relevant) maintenance records to ensure compliance.

This is accepted provided the recommendation is within the scope of Schedule 12 paragraph 2(3) of the Water Act.

Recommendation 7: For simple descriptive consents, it may often be appropriate to include a standard wording excluding any trade or farm waste or any increase in the number of dwellings connected to the discharge, so that the discharger recognises that any development likely to change or influence the scale or character of the discharge must be notified to the NRA.

A sensible "de minimis" arrangement for reporting increases in load will be required. WSCs are not necessarily informed if there is an increase in the number of dwellings in the catchment of a small sewage works, nor are they always able to affect this.

3.7 Absolute Limits

Recommendation 8: All numeric consents should include absolute limits for all relevant determinands.

WSCs RECOGNISE THE REASONS BEHIND THE NRA'S WISH TO HAVE ABSOLUTE LIMITS BUT DO NOT ACCEPT THAT THEY ARE NECESSARY OR PRACTICABLE. THEY ARE EXTREMELY CONCERNED ABOUT THIS ISSUE AND ITS COST IMPLICATIONS TO CUSTOMERS.

Firstly, WSCs would point out that even well-run sewage works will occasionally fail unless the standards are made unacceptably lax. The general public would not tolerate this. Furthermore, the failure rate is influenced simply by varying the sampling frequency. The reasons why sewage works need to be treated differently have already been pointed out (in Sections 2.8 and 2.9). Recommendations 11 and 12 which relate to the limits on flow also recognise the different position of sewage works. WSCs consider that sewage treatment works designed and operated properly to achieve compliance with consent limits expressed as a 95 percentile, based on a look-up table test devised in accordance with BS5700 principles, are most

unlikely to give rise to the discharge of a grossly polluting effluent.

Secondly, WSCs believe that, as consents are framed under existing law, the cost of meeting absolute standards and thereby minimising risk of prosecution will be prohibitively high. We have provisionally estimated this to be up to Million investment and Million in annual operating costs merely to minimise exceedance of absolute limits and consequent prosecution. It must be clearly understood that the additional stages of treatment and treatment capacity, which will be necessary, go beyond that which is required to achieve proper protection for the aquatic environment. Given that present committed investment programmes for sewage treatment do not provide for meeting absolute standards, should such standards be imposed, it would be at least ten years before a programme would be completed to enable their achievement.

Thirdly, we would point out that the introduction of an upper tier limit (an absolute value) into Time-Limited consents was confined only to those works which, prior to privatisation, were unable to meet their consents and were the subject of improvement programmes. These limits were accepted reluctantly by the industry and were not seen as a permanent measure. Upper tier limits were not imposed on the consent conditions applying on expiry of the Time-Limited consents.

Finally, WSCs consider that the question of absolute limits, and the cost consequences to customers, requires much wider debate than is currently proposed. It cannot be separated from the wider issues of the timing of measures, both national and international, to improve the environment. WSCs consider that the proposals to introduce absolute standards relate more to frustration with the current law than what is really required to exercise proper environmental protection.

3.8 Percentile Limits

Recommendation 9: For environmentally significant discharges, whether from sewage works, industrial sites or other sources, the NRA should promote the application of 80 percentile limits in addition to the absolute limits which all numeric consents should have. These should be related to a clearly stated rolling time period. Where appropriate 50 percentile limits should additionally or alternatively be applied.

No arguments have been advanced by the NRA for their abandonment of the 95 percentile limit built into the consents for most sewage treatment works. It remains the WSA's strongly held conviction that there are clear advantages in retaining the 95 percentile approach, among which are:

- it is consistent with criteria set out in the river quality classification scheme;

- there is much experience of designing and operating to the 95 percentile standard;

- it is a good working maximum for operators; both 80 percentile and absolute limits are unsatisfactory in this respect;

- the present test of compliance is set on valid statistical grounds.

The adoption of the 80 percentile for control purposes as a replacement for the 95 percentile is difficult to understand. The work involved in making such a change will be considerable with no obvious environmental benefit as a result. Moreover, the report identified that a major re-education of the general public would be necessary since for a given works, a larger number of failed sample results would appear on the register following the introduction of lower percentiles, even though the works was continuing to comply with its consent. This problem would be further exacerbated if the 50 percentile were used.

WSCs agree that there occasionally may be special circumstances where it is appropriate to define the required effluent quality by means other than the 95 percentile.

3.9 Limits on Loads

Recommendation 10: For discharges where the effluent or their constituents may build up in the receiving waters, consents should include limits on loads. Conditions requiring dischargers to maintain records of the mass of a substance discharged over a given period and, in appropriate cases, to notify the NRA when a stated proportion of the total mass authorised for the relevant period has been discharged, may also be desirable.

WSCs would accept the use of loads in consents when the mass of a toxic substance has to be controlled. Its use in other cases, for example, where the discharge is to a lake or watercourse with canal-like characteristics and solids deposition is likely, is also accepted but it must be kept to a minimum. However, if a load limit is to have any meaning, it must be assessed over a substantial period of time through the analysis of flow composited bulk samples. The additional cost of equipment and its operation must be considered.

3.10 Flow Measurement

Recommendation 11: All numeric consents should include absolute limits for instantaneous effluent flow. Where flows are particularly variable, it may be necessary to include additional limits related to total volumes discharged over specified longer periods.

It is presumed that this is primarily aimed at industrial discharges other than sewage works, since these are covered by Recommendation 12.

3.11 Discharges Influenced by Rainfall

Recommendation 12: Consents for discharges influenced by rainfall need to be as specific as possible in the nature of flows authorised for discharge, under dry and under rainfall conditions. References to the design criteria for flows going to full treatment and to

overflows or storage, and safeguards against the discharge of solids should be explicitly mentioned in consents for new and refurbished overflows.

WSCs recognise the crucial importance of flow in the design of sewage works and sewerage systems. It is not however clear from the Report what changes, if any, the NRA is proposing to make to the ways in which flows are presently taken into account in sewage works design.

WSCs consider it essential that the determination of flows to treatment at sewage works should continue to follow the recommendations of the Report of the Technical Committee on Storm Overflows (1970). To do otherwise would alter the whole basis of the design of works. Any review of storm sewage overflow consents needs to identify rates of flow derived clearly from the total quantities discharged over a period which will reflect the duration of storm conditions.

The Report states (para 72) that the inclusion of trade effluent flows in overflows is to be avoided or restricted as fully as possible. WSCs would point out that many works receive and treat effluent containing a high proportion of trade effluent and to exclude it is impracticable. Further, WSCs are under a duty to have regard to the existing and likely future obligations to allow for the discharge of trade effluent into their public sewers and the need to provide for the disposal of trade effluent which is so discharged, in accordance with Section 67(2) of the Water Act.

WSCs are aware that occasional discharges of trade effluent from storm water overflows may have a detrimental effect on the receiving watercourse and would seek to avoid this.

3.12 Special Situations

Recommendation 13: The NRA gather systematic data on pollution caused by temporary discharges which are unconsented, and by discharges from various special situations such as mineral workings. The NRA should then promote, in the light of this data, programmes to emphasise the need for discharges to be consented, possibly by accelerated procedures if they are to be very short term; and take enforcement action against dischargers who ignore or defy any need for a consent.

WSCs would agree with this recommendation.

3.13 Choice of Determinands

Recommendation 14: In new and reviewed consents there should be consistent application of limits for ammonia in all discharges to which this is relevant.

WSCs understand the need for the NRA to set standards for ammonia in those discharges where the receiving waters require this parameter to be controlled for environmental reasons. Of crucial importance to WSCs is the ammonia standard which will be set for the receiving waters since this will govern the discharge consent standards to be met and hence the financial implications.

WSCs HAVE ESTIMATED THAT THE COST OF MEETING AMMONIA STANDARDS FOR ALL SEWAGE WORKS SERVING POPULATION EQUIVALENTS OF MORE THAN 1000 (WHICH ARE NOT ALREADY IN CURRENT INVESTMENT PROPOSALS) WOULD BE IN THE ORDER OF MILLION WITH ANNUAL OPERATING COSTS OF MILLION.

Recommendation 15: The NRA should make a commitment to gather the data necessary to evaluate the suitability of TOC and turbidity as new determinands for inclusion into consents in place of BOD and suspended solids. If a sustained period of parallel assessment produces sufficiently encouraging results, the aim should be to begin using the new determinands as replacements for the old about five years from now.

The report proposes that the replacement of BOD and suspended solids will only take place - if at all - after a period of investigation. WSCs and other dischargers will wish to participate in any debate should changes still be contemplated after that period. However, it is not clear why the change, which will have substantial implications, is being proposed at all since little if any environmental benefit will result.

It appears that the proposition of changing from BOD to TOC relates more to a desire for automatic monitoring than to anything relating to the environment as such. Both BOD and TOC are empirical measures and there is no consistent relationship between them. Whilst both have their defects we would suggest that BOD is more relevant to the protection of the environment and particularly to the maintenance of adequate dissolved oxygen levels in rivers.

TOC may have a use as a tool for operational management, but WSCs would reason that it is inappropriate for determining design and consent conditions to meet Water Quality Objectives.

The Draft EC Waste Water Treatment Directive specifies BOD as the prime oxygen demand parameter. Use of TOC is only acceptable provided the relationship with BOD is established for each effluent and periodically re-calibrated.

A change from BOD to TOC would necessitate altering consents on a case by case basis following assessment of the relevant ratio, the re-calibration of river catchment models and a fundamentally new approach to river improvement plans. Furthermore, the BOD control parameter is well understood in the design of sewage treatment works; a shift to TOC would necessitate a radical re-appraisal of design criteria. The BOD test would still be needed to assess how much of the TOC is biodegradeable in the receiving water. It would be helpful to avoid these complications.

WSCs conclude that it would be more appropriate to put research effort into the development of a rapid BOD test.

3.14 Toxicity Limits and Testing

Recommendation 16: For environmentally significant discharges of complex composition where not all important constituents can be individually identified and numerically limited, consents should

specify a clearly-defined toxicity limit, the appropriate form of toxicity test to be used, and the minimum frequency with which it should be applied.

Whilst WSCs do not object to the proposal in principle, they would argue that toxicity tests are more appropriate to certain classes of direct discharge of industrial effluent to rivers than to sewage works. The nature of sewerage systems is such that the sewage entering a works is not completely controllable. Where there are toxic discharges to such systems WSCs are of the view that toxicity tests should be directly applied to those discharges rather than to the discharge from the sewage works. At the present time there is no test approved by the Standing Committee of Analysts.

3.15 Monitoring and Assessment of Compliance

Recommendation 17: The NRA should include in all relevant consents conditions indicating access and facilities required for flow measurements and the taking of samples to be done by the NRA at whatever times in the day, night or week it judges appropriate. The NRA should also encourage sampling staff to maintain the practice of making their visits unpredictable.

The Water Act 1989 (Section 147) gives the NRA rights of access:

- at any time in an emergency;

- otherwise, at reasonable times.

The NRA now wishes to take samples ".....at whatever times in the day, night or week it judges appropriate." This appears to be in conflict with Section 147.

WSCs need to be quite clear what the NRA's sampling Policy is. They would point out that samples should be taken in accordance with paragraph 106 of the Report, otherwise bias in the results could result.

In addition, there is the question of the health and safety of NRA staff on WSC works, especially those which are unmanned. WSCs have statutory responsibilities under the Health & Safety at Work etc. Act 1974 and consider it unreasonable to provide facilities in order to accompany NRA officers on random visits to works at unsocial hours. Details of the NRA's intentions in this area are required so that the legal obligations can be clarified for both parties.

3.16 Sampling Results

Recommendation 18: Whilst it is not the practice of the NRA generally to notify the discharger on each occasion of the results of the sample taken from his dicharge, there should be regular dialogue between the NRA and the discharger covering satisfactory results over a period as well as highlighting any variations calling for explanation or causing concern.

WSCs see it as extremely important for the NRA to notify all dischargers of the results of all samples, satisfactory or otherwise,

as promptly as possible so that they can take any necessary steps. They understand that in the near future the NRA is intending to re-charge dischargers for the costs of sampling and analysis. It is therefore essential that the results of these activities should be communicated to those who will pay for them.

3.17 Intensity and Accuracy of Sampling

Recommendation 19: Sampling programmes need to be economical, but frequencies must be adequate for results to provide a basis for decision or enforcement. Detailed guidance on required effluent sampling frequencies will be provided by the NRA's Sampling Group. Tripartite sampling should not be regarded as wasted effort if no prosecution follows. To promote efficiency, comparisons of sampling cost and frequency should be made between regions from time to time as well as audits of sampling and laboratory procedures.

WSCs would wish to be consulted on proposed changes to the sampling regimes, reached by the NRA's Sampling Group, since these could have compliance and cost implications for the WSCs.

Recommendation 20: In standard procedures for dealing with emergencies and accidents the obtaining of samples necessary for subsequent enforcement action should be explicitly included.

WSCs are concerned with the implication that emergencies and accidents will normally lead to subsequent enforcement action and hence require samples to be taken. It is important that the threat of enforcement action should not impede the rapid handling of emergencies.

3.18 Assessment of Compliance

Recommendation 21: Any type of sample, whether routine or investigational, may be used in assessing compliance with absolute limits.

This is understood; the NRA should have regard to the response to recommendations 8, 17, 18 and 19.

Recommendation 22: Percentile limits must always be related to specified time periods. For the assessment of compliance by tables based on BS5700, consents should specify rolling time periods; these need not always be for 12 months, and in cases of discharges needing careful supervision periods of six months or less will be preferable. The assessment should be based solely on results from the routine monitoring programme; special or investigational samples introduce bias and should not be used for this purpose.

WSCs would accept shorter periods than one year for the assessment of compliance with percentile limits but only if those periods and the consents took account of the seasonal effects of sewage treatment processes. It would be wrong, say, to assess the quality of an effluent over a winter quarter, when works performance is normally lower, against a standard that has been set on the basis of a full year's data. On the other hand, the use of winter and summer consents is well established.

Recommendation 23: The counting of exceedances against percentile limits should be separate for each determinand having such limits. The NRA should adopt a standard form of words to put this beyond doubt in all consents that include percentile limits.

Agreed.

3.19 Discharger Monitoring

Recommendation 24: The NRA should promote continuous monitoring of environmentally significant discharges where technology and circumstances make that possible with adequate reliability at reasonable cost. This may be achieved by voluntary arrangements with dischargers or through consent conditions. On either basis, validation by NRA of equipment and data and in suitable cases remote access facilities for the NRA should be provided for.

The NRA already has powers to require dischargers to provide apparatus for sampling effluent and measuring its quality. This does not mean that continuous monitoring should be imposed. Given the significant costs involved, the WSCs hope that any requirements for continuous monitoring will be confined to the most sensitive discharges. National guidelines will be necessary in order to avoid significant regional discrepancies.

WSCs see some advntages in a system of self-monitoring, whether continuous or not, but only if this is in accordance with a structured, agreed programme. Subject to the legal framework being satisfactory, this would facilitate a move away from the traditional United Kingdom approach to monitoring compliance with consents towards one of self-monitoring under quality assurance procedures in accordance with the principles of BS 5750. This approach is already followed in other industries where product quality is essential.

Similar self monitoring procedures are already employed in controlling air pollution in the UK. The self-monitoring of sewage effluent and industrial discharges is already practised in parts of Europe and North America. WSCs would, however, point out that continuous monitoring whether carried out by dischargers or the NRA, does have practical problems, especially with the reliability of equipment and instrumentation. Nevertheless, as reliability and availability of the technology improves, then its use is likely to become more common.

However WSCs view with concern the proposal that continuous monitoring devices should be linked directly to NRA premises. WSCs are committed to achieving the quality and flow conditions in their consents to discharge. It is in their interests and the interests of their shareholders to do so. Measures such as those the NRA is proposing, could only result in confrontation between the companies and the NRA, when close co-operation is needed to ensure proper environmental management. WSCs would expect to have the confidence to inform the NRA when accidental gross pollution occurs so that remedial action can be taken immediately. At a practical level, any problem associated with instrument calibration, power failure, etc, could be misinterpreted by the NRA. This could result in much needless contact with the companies.

In general, therefore, WSCs are in favour of self-monitoring, provided that the proper safeguards are in place. They think that there would be benefits to river quality, if the NRA were then able to concentrate more resources towards the abatement of pollution from other sources and thus be more readily able to carry out its statutory duties to protect water sources used for public water supply and other purposes. Clearly, any necessary changes in the present legal framework would have to be considered, and the quality assurance procedures (referred to in Recommendation 26) adopted would have to be agreed between the NRA and the WSCs. They believe that the NRA should take this opportunity to look to the long term.

Recommendation 25: Monitoring directly by the NRA must continue as our independent check, on a tripartite basis where necessary, and generally, where dischargers are undertaking some self-monitoring as well as where they are not. The scale of this work should be decided in local circumstances and on the basis of general policy on sampling frequencies.

The need for this is understood.

Recommendation 26: Where automatic or continuous monitoring is required, consents should usually indicate the types of data needed and the degree of accuracy required rather than the particular equipment to be used. Consents should provide for independent certification of the equipment's accuracy at regular intervals and in appropriate cases may require facilities for the NRA to interrogate the equipment remotely.

Practical problems associated with continuous monitors have already been referred to under the response to Recommendation 24.

Recommendation 27: The NRA should always be ready to indicate to dischargers which of the data they may be expected to provide, has to appear on the register. The NRA can and should also indicate which data they will not rely on as evidentiary.

This recommendation appears acceptable in principle but the proposal needs to conform with the prescribed particulars for the contents of the Public Registers as set out in Section 117 of the Water Act.

3.20 The Motivation of Dischargers and Other Considerations

Recommendation 28: With the increased number of results likely to be flagged as exceedances on the public registers following the introduction of 80 and 50 percentile limits, the NRA should develop a clear introductory note on the meaning and interpretation of percentile limit exceedances, and arrange for this to be readily available by anyone consulting the public registers.

An introductory note would be welcome. WSCs disagree with the introduction of 80 and 50 percentile limits for the reasons given in our response to Recommendation 9.

3.21 Precautions

Recommendation 29: The NRA needs to consider all relevant

circumstances in deciding on prosecution in individual cases including the discharger's record of care. Where a dicharger has shown little or no care, or active contempt, for consent obligations over a period, this should be a factor in favour of prosecution. The NRA must not be regarded as reluctant to prosecute in situations where significant pollutions occur and relevant evidence is available.

It would be helpful if the NRA would publish a clear statement of their prosecution policy, which should confirm that a prosecution should not be taken where, for example:

- remedial action was being taken or planned;

- there were mitigating circumstances such as power failure or exceptional weather conditions.

3.22 Personal Designation in Consents and Updatings

Recommendation 30: Application forms by corporate bodies for discharge consents should require the applicant to designate by name and post a manager of an appropriate level to take a direct interest in the good operation of the discharges in compliance with the limits which the consent will define. Other contacts may be used in addition for day-to-day purposes as convenient, but the NRA will aim to maintain dialogue and liaison with the designated person from time to time and any change in the person assigned this task should be notified to the NRA.

All consent applications are signed by a responsible officer or director of the company making the application. A water company is corporately responsible for achieving compliance with its consents of which there may be several thousand. The NRA needs to know whom to contact in order to maintain contact with a discharger. WSCs would suggest that there should be a single point of contact in the companies for policy matters, and a number of points of contact for operational matters. These contacts however should be post holders (eg Director of Quality, District Managers) rather than named individuals. This would avoid administrative problems should individual managers move to other posts.

WSCs think that it would be wholly inappropriate to state a named manager in a consent. Further, this would require a variation to a consent should there be a change to the organisation or to the postholder.

Recommendation 31: For many discharges not subject to regular sampling, any billing system introduced for annual charges should include a section or enclosure where from time to time the discharger can notify any change in circumstances relating to the discharge (eg change of occupier) or confirm that no changes have occurred and any maintenance obligations have been fulfilled. Applications forms for consents should be revised to make clear that this practice will be introduced.

No comment.

3.23 Action Warnings

Recommendation 32: The NRA should introduce a system of formal Action Warnings on the lines indicated above, in addition to existing procedures for warning dischargers when their effluents are or threaten to be unsatisfactory.

WSCs are of the view that action warnings are in effect already in place in that warning letters are sent to companies which seriously infringe their consent conditions. These instances are recorded in the Public Register. A detailed publication, say, of the number of action warnings received per company would be invidious, could lead to misleading comparisons and might prejudice any subsequent court proceedings. If the NRA decided to proceed in this way, then WSCs would require a right to challenge the NRA's actions.

3.24 Implementation of Recommendations

Recommendation 33: Much of the work of implementing our recommendations as they are adopted should go forward on a catchment basis with the sort of factors we have indicated influencing the priority for each catchment. This approach should lend itself well to providing worthwhile progress reports locally and nationally as the work goes forward on a well-defined time-table.

WSCs are of the view that if this means looking at consents from the needs of rivers - tightening some, relaxing others - then the recommendation has much to commend it. Revisions should also be considered in line with the factors set out in section 2.10 of this response.

Waveney District Council

District Health and Housing Officer
J.E. Johnstone

Your ref
My ref
IGW/KB

80 Clapham Road
Lowestoft Suffolk
NR32 1RB

Fax No: 0502 501215
Telephone Lowestoft 562111 STD code 0502
When calling please ask for
Mr. Watson

Direct Dial Number 523111

02 NOV 1990
2813

31 October 1990

Dear Dr. Pentreath,

Review of NRA's Discharge Consent Policy

At its meeting of 18th October, 1990 the Health and Housing Committee of this local authority considered a report on the above review, based on the NRA's document "Discharge Consent and Compliance Policy, A Blueprint for the Future".

The Committee welcomed this document as a serious attempt to improve the overall framework and philosophy of giving consents to industry and sewage treatment works, to discharge into rivers and coastal waters. Waveney District Council looks forward to the implementation of the new and uniform consent and compliance policy which will ensue.

Yours sincerely,

Ian G. Watson

for District Health and Housing Officer

Dr. R.J. Pentreath,
Chief Scientist,
National Rivers Authority,
30-34 Albert Embankment,
London.
SE1 7TL

LOCAL WATER

The Water Companies' Association

14 Great College Street
Westminster, London SW1P 3RX
Telephone: 071-222 0644
Telefacsimile: 071-222 3366

President: The Lord Elliott of Morpeth DL
Director & Secretary: Michael Swallow LLB Solicitor
Deputy Secretary: Mrs Valerie Homer
Assistant Secretary: Ian Bryan BA

VAH/JW/490

26 OCT 1990
2426

25 October 1990

J Pentreath Esq
Chief Scientist
National Rivers Authority
Rivers House
30-34 Albert Embankment
London SE1 7TL

Dear Mr Pentreath

NRA CONSULTATION DOCUMENT : DISCHARGE CONSENT AND COMPLIANCE POLICY - A BLUEPRINT FOR THE FUTURE

The Water Companies' Association is pleased that the NRA is pursuing an open consultation policy in relation to this important topic.

Member companies of the Water Companies' Association are major licensed abstractors of water throughout the UK. The cost of treating water fit for human consumption relates directly to the purity of the nation's water resource. The fundamental aim of the consultation document is to improve the quality of the nation's waters, an objective to which the Association commits its full support. Water supply companies are prepared to shoulder their fair burden of responsiblity with respect to their own effluent discharges into the water environment and welcome the NRA commitment to ensure that a like response is forthcoming from all other dischargers.

Comments from this Association are aimed at improving further the practicability and soundness of the document, so that it is robustly sustainable in operation over an extended period. To promote clarity, comments on principles and technical points are under separate headings.

1. Principles

1.1 An important omission in the document is the relatively scant attention given to groundwaters. Section 103 of the 1989 Water Act includes groundwater in the scope of "Controlled Waters". Terms of Reference for the Group refers to "all discharges to controlled waters." Thus the omission of serious consideration to groundwaters is significant to the point that the Group did not comply fully with its Terms of Reference.

Groundwaters are at least as an important a national resource as surface waters and the consequences of environmental pollution can be problematical, although hidden from the eye of the public.

cont...

The Association thinks that this omission is so important that the Group should be reconvened to produce relevant proposals. This supplementary phase should be concluded before the document is implemented as policy.

1.2 Whilst the document seeks "even-handedness" between manufacturing industry and sewage plants, areas of diffuse pollution are insufficiently addressed. Agricultural pollution, fish farms and storm water discharge are very important areas in the attainment of improved river quality. Supplementary consideration is suggested for these topic areas.

1.3 The document declares an intent to introduce retrospective changes to both existing consents and consents to be issued by the NRA. There seems a danger that the NRA might be seeking an unequal position in law. Existing consents have been bilaterally negotiated and accepted by the regulatory agency of the day. This will be the case also where the NRA itself grants consent licences. A change in consent conditions will frequently have significant investment implications for the discharger. Whilst the NRA has responsibility for improving the water environment, a more sympathetic approach than that conveyed in the document could well prove more productive to the NRA itself.

1.4 This Association is concerned whether the NRA is correct in asserting that "the purpose of a consent is to define operating and maintenance obligations which the discharger is required to fulfil." (Paragraph 127). The purpose of a consent, as understood by the WCA, is to place restrictions upon the volume and quality of effluent such as that significant adverse environmental impact does not follow from its discharge into the water environment. These two statements are fundamentally different. NRA powers cannot come into effect until the quality of effluent exceeds consent conditions. In the opinion of the Association, the reputation of the NRA would not be enhanced by a successful legal challenge by an industrial discharger against the ability of the NRA to insert such a clause into the consent licence.

1.5 The advent of a charging scheme concentrates attention upon the definition of "discharge". Storm water overflows from sewers and sewage pumping stations are recognised in the document and a consent "waiver" seems intended here. However, the document appears to overlook "emergency" overflows granted to the NRA by the former water authorities. In the consenting of these emergency overflows the definition of "emergency" was sometimes lax. Hence some emergency overflows operate too frequently resulting in unnecessary pollution. The definition of an "emergency" overflow discharge should be re-examined by the NRA.

Washout points on water supply mains are potential discharge points. It is entirely impractical to "consent" each washout point and is unnecessary, as discharge of drinking water is environmentally beneficial. This aspect of "discharge" definition is important to water supply companies and clarification is desired.

1.6 The NRA should insist upon the illustration of professional standards of sampling and analysis, equivalent to that of its own laboratories, before accepting analytical results from voluntary bodies as evidence for prosecution. Some voluntary bodies are stronger on enthusiasm than upon scientific rigour of results.

2. Technical Points

2.1 Initial 50 and 80 percentile values will be derived from "model" effluent concentration distribution. A real effluent will deviate from this profile markedly, even an effluent which is in compliance with the consent licence. A small change in the statistical profile will impact significantly upon 50 and 80 percentile values. At the earliest opportunity "real" plant effluent profiles should be constructed upon which the specific industrial process 50 and 80 percentile consent values should be based.

2.2 A proposal is offered to substitute TOC for BOD without any justification offered of the range of chemical species measured. For all its defects BOD has the advantage of many years of effluent plant history. Clearly this cannot be the case for TOC. It is not made clear in the document that substitution of TOC and BOD would fundamentally alter the consent. The document does not claim that such a change would produce environmental benefit, but is proposed merely for convenience. This does not seem convincing to the Association.

2.3 The document further considers substituting turbidity measurement for suspended solids. Technically, these measure quite different ranges of suspended particles. Turbidimeters measure colloids well and responds poorly, if at all, to large particles. Suspended solids measure particulate matter of all particle sizes. In this case, change of measuring technique would lower the stringency of the consent parameter. No further consideration should be given to this proposition.

2.4 Two additional parameters should be considered in consent conditions, as appropriate to specific instance:-

i) Ammonia, where some sewage discharges do create problems to member companies.

ii) Badenoch Report recommendations place obligations upon the NRA to reduce the entry of cryptosporidium oocysts into river water sources. Effectiveness of NRA measures commences with this parameter being specified in appropriate consent conditions.

2.5 Greater scientific rigour is required in the areas of NRA sampling and accuracy.

i) Sampling needs to be stated as representative. Spurious discharge measures can arise from sampling at low discharge flows or from a discharge pipe subject to biological growth. Without a requirement for "representative" samples, vis-a-vis 50 or 80 percentile values, it is open to an NRA sampler to sample in such a way that the sampler determines compliance or non-compliance. It is assumed that the NRA does not desire that the sampling programme be subjective.

11) Consideration of analytical accuracy is insufficient in the document. Sampling/analytical error for some parameters can be high (20%) and the exclusion of this error from the standards set can increase the severity of the consent. As a minimum the NRA should operate a system of analytical quality control to the same standard required of water companies. The document does not signify that this is the intent of the NRA.

The Association has made considerable efforts to provide a serious and constructive response to this important consultation paper. I hope that the NRA will recognise the validity of many of the points contained herein and adopt them in the finalised policy document. There is no objection to the NRA making the Association's response publicly available.

Yours sincerely

Valerie Homes

Deputy Secretary

Wessex Water
Wessex House Passage Street Bristol BS2 0JQ Telephone 0272 290611 Telex 444130 Telefax 0272 293137

29 AUG 1990
1988

Dr R J Pentreath
Chief Scientist
National Rivers Authority
30-34 Albert Embankment
LONDON
SE1 7TL

Our Ref: JGJ/saw

Your Ref:

24 August 1990

Dear Dr Pentreath

NRA "DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE"

Thank you for your letter of 26 July and a copy of the above report.

I hope that you find the detailed comments on each of the recommendations of use to you. I must admit that in a world that is continually competing for scare resources, it does seem totally inappropriate that we are advocating the setting up of a system which is requiring Water Service Companies to spend customers money on measures which will clearly assist the National Rivers Authority in undertaking its duties but will not in any way contribute to an improvement in the general fabric of the severage and sewage treatment systems. Surely it will be a much more cost effective use of reosources to enhance severage and sewage treatment systems in advance of the implementation of sophisticated monitoring techniques. This document in its current form highlights the need for considerable expenditure purely to indicate whether or not a problem exists. I am sure that the Industry would prefer to invest customers monies in rectifying problems which we jointly know are already there.

Yours sincerely

S Woodland

pp J G Jones
Director of Science and Quality

Wessex

NRA DISCHARGE CONSENT AND COMPLIANCE POLICY: A BLUEPRINT FOR THE FUTURE

Recommendation 1:

Whilst the wider analysis and publication of information on consents and discharges is obviously desirable in today's 'green' climate, the cost of the resources necessary to carry this out should not be bourne by the discharger but by the Government.

Recommendation 2:

This move is desirable and hopefully will, in many cases, eliminate the need for investigative charges to be incurred by the NRA.

Recommendation 3:

This is a sensible approach to the problem of non specified constituents in a discharge. The discharger is not prosecuted for their mere presence but the environment is protected against any abuse of the system.

Recommendation 4:

Wessex Water would strongly support this line of action.

Recommendation 5:

Stringent upper flow limits on marine discharges may cause considerable difficulties to dischargers unless the complete co-operation of the local planning authorities is forthcoming. If maximum flow limits are imposed then this will necessitate an increase in the number of storm overflows.

Recommendation 6:

The responsibility of the NRA with regard to numeric consents should stop at the monitoring and enforcement of the consent condition. The meeting of the terms of these conditions will necessarily mean that the discharger is meeting his maintenance obligations and hence the statutory keeping of maintenance records is not relevant.

Recommendation 7:

As in Recommendation 5, the co-operation of the local planning authority is essential to enable the discharger to give any guarantee on number of dwellings connected to any plant.

Recommendation 8:

In respect of the setting of absolute limits for discharges, the Company is encouraged by the remarks in the report that each discharge must be looked at individually for an effective balance between protection of the receiving water and cost to the discharger. The present situation is not at all satisfactory and this has resulted, to date, in 22 appeals being made against what we believe to be unjustified absolute limits.

Recommendation 9:

The Company is concerned about the intention to introduce 80 percentile or even 50 percentile consents instead of the existing 95 percentile. A sewage works does not receive a smooth even load during the day where measurement of 50 percentile and 80 percentile on the final effluent could be translated as accurate measures of performance, nor is the daily load constant and is subject to seasonal changes especially at holiday resorts. It is difficult therefore to see how the results of sampling could produce a neutral transition from the existing 95 percentile as suggested in the report. The danger is that the translation will in fact effect a considerable tightening of consent which will possibly result in an environmental gain which is unnecessary at an increased cost to the consumer.

Recommendation 10:

The administrative and monitoring implications of the recommendation are so great that it should only be used where there is a real risk of building of undesirable constituents in the event of 'deliberate manipulation of the discharge'.

Recommendation 11:

The water industry is obliged to receive anything that comes down the sewer to a storm overflow or sewage treatment works. It is difficult to see what action could be taken to prevent an absolute flow limit being broken. A much more sensible solution is to stick to agreed levels of treatment for various multiples of normal flow.

Recommendation 12:

The capital expenditure implication of this proposal to the Company would be considerable and we would hope to see it as a long term project concentrating on the worst catchment first.

Recommendation 13:

The Company would be very interested to know where the finance for such projects would come from.

Recommendation 14:

The majority of Wessex Water's sewage treatment works are already subject to ammonia limits.

Recommendation 15:

The Company is unhappy about the proposed changes as it feels BOD and Suspended Solids are more appropriate measures of polluting matter. In addition, neither TOC nor turbidity are particularly suitable determinands to evaluate crude and settled sewages, even if they prove viable to evaluate the quality of effluents. This would make design considerations and comparative unit performance assessment very difficult.

Recommendation 16:

The Company accepts this philosphy if it is viable. It will be difficult, however, to produce a method that is practicable, reproducable and at an acceptable cost.

Recommendation 17:

The Company understands the philosophy behind this suggestion but doubts the practicality, especially for Health and Safety reasons, of routine sampling in the early hours of the morning.

Recommendation 18:

It has been the practise of the NRA (Wessex Region) and indeed its predecessors, Wessex Water Authority and Avon & Dorset, Bristol Avon and Somerset River Authorities, to inform dischargers of the results of any samples taken from their premises. This Company would be very disappointed if this courtesy was discontinued.

Recommendation 19 & 20 - no comments

Recommendation 21:

The Company will expect that any sample used in assessing non-compliance with absolute limits would be taken as a tri-partite if legal action was to be based upon the result.

Recommendation 22:

Assessments over periods of less than 12 months could cause the Water industry considerable problems especially if 80 or 50 percentile limits were introduced. A good example of this is 'spring overloading' on a biological filter plant where humus tank capacity would need to be increased excessively to meet such limits.

Recommendation 23:

The Company would hope this would be the case.

Recommendation 24:

The proposal is only viable if TOC and turbidity are found to be acceptable limits. It should be understood that the cost of any such exercise would be passed on to the customer and this on top of the cost of the NRA's own monitoring which will also be passed on might be politically very sensitive.

Recommendation 25:

The NRA sampling will need to be of sufficient frequency to make statisical comparison in line with the requirements of BS5700 feasible.

Recommendation 26:

Again this proposal can only significantly add to the Company's costs.

Recommendation 27:

No comments.

Recommendation 28:

It is our experience from operating the Public Registers that the general public are rarely interested in individual results and the pressure groups will draw their own conclusions regardless of anyone elses interpretation.

Recommendation 29:

This Company takes its 'Duty of Care' very seriously and so would strongly support this proposal.

Recommendation 30:

The Company can see no advantage in this proposal over the current procedures. Senior management already have this desired dialogue and liaison with the NRA and the culture of operations in sewage treatment is quality led.

Recommendation 31:

No comments.

Recommendation 32:

This would seem to be a sensible course of action if used. Care should be taken however that NRA do not look upon a high number of Action Warnings as indicating good pollution control. This introduces a target figure which can lead to bad relationships between discharger and Regulator.

Recommendation 33:

It is essential that a good liaison between the Company and the NRA exists for this catchment basis policy to be successful. Capital expenditure has to be planned years ahead and major expenditure may have to be committed outside catchment order criteria if complete chaos is to be avoided.