REGULATION REVIEW COMMITTEE

PARLIAMENT OF NEW SOUTH WALES

REPORT IN RELATION TO THE COMMITTEE'S INQUIRY INTO THE CLEAN WATERS ACT 1970 REGULATION (RELATING TO STANDARDS FOR WATERS AND TESTING PROCEDURES) WHICH WAS PUBLISHED IN THE GOVERNMENT GAZETTE OF 31ST MARCH, 1994 AT PAGE 1431 AND AS TO THE COMPLIANCE WITH THE REQUIREMENTS OF THE SUBORDINATE LEGISLATION ACT 1989 IN THE MAKING OF THAT REGULATION

Report No. 30
October 1994

REGULATION REVIEW COMMITTEE

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The Regulation Review Committee was established under the Regulation Review Act 1987. A principal function of it is to consider all regulations while they are subject to disallowance by Parliament.

In examining a regulation the Committee is required to consider whether the special attention of Parliament should be drawn to it on any ground, including any of the following :-

(a) that the regulation trespasses unduly on personal rights and liberties;

(b) that the regulation may have an adverse impact on the business community;

(c) that the regulation may not have been within the general objects of the legislation under which it was made;

(d) that the regulation may not accord with the spirit of the legislation under which it was made, even though it may have been legally made;

(e) that the objective of the regulation could have been achieved by alternative and more effective means;

(f) that the regulation duplicates, overlaps or conflicts with any other regulation or Act;

(g) that the form or intention of the regulation calls for elucidation; or

(h) that any of the requirements of sections 4, 5 and 6 of the Subordinate Legislation Act 1989, or of the Guidelines and requirements in Schedules 1 and 2 to that Act, appear not to have been complied with, to the extent that they were applicable in relation to the regulation.

The Committee may, as a consequence of its examination of a regulation, make such reports and recommendations to each House of Parliament as it thinks desirable including reports setting out its opinion that a regulation or portion of a regulation ought to be disallowed and the grounds on which it has formed that opinion.

CLEAN WATERS ACT 1970 - REGULATION
(Relating to standards for waters and testing procedures)

GOVERNMENT GAZETTE OF 31ST MARCH, 1994, AT PAGE 1431

The object of this Regulation is to amend the Clean Waters Regulations 1972, so as to permit the Authority to approve, subject to conditions, the discharge of certain overflows into protected waters and to make other amendments relating to protected waters and testing for the presence of substances in waters and wastes.

LETTER TO MINISTER FOR ENVIRONMENT

This regulation was considered by the Committee at its meeting on 5 May 1994. The Committee resolved to write to the Minister asking for details of the assessment carried out by him of the regulatory proposal under s4 and Schedule 1 of the Subordinate Legislation Act. The Committees letter of 12 May 1994 stated as follows:

"Dear Mr Hartcher

Clean Waters Act 1970 - Regulation
(Relating to standards for waters and testing procedures)
Gazette 31 March 1994

My Committee examined this Regulation at its meeting on 5 May 1994 and resolved to request from you details of the assessment carried out in relation to it under section 4 and Schedule 1 of the Subordinate Legislation Act.

Under the Regulation Review Act, my Committee has the function of reporting on any departures from the requirements of those provisions. It also has the function of deciding whether a regulation trespasses unduly on person rights and liberties, and whether it is in accordance with the spirit of the Act under which it is made.

The Committee understands that new sewerage schemes are proposed for certain urban areas within catchments of Class P Waters and that these plants could replace septic tanks, with the objective of improving water quality. The Committee understands, however, that these new sewerage schemes will not be able to fully meet the standards applying to Class P Waters under the Clean Waters Regulation and for this reason it is necessary to exempt those schemes from its requirements.

Lack of an environmental impact assessment of these proposals was raised in the report of the Joint Select Committee on The Sydney Water Board (April 1994, at pages 109-110).

The comments made in that report point up the difficulty of attempting to accommodate, by a blanket exemption, the new sewerage proposals within the limits of the existing classification. They also indicate a need to clarify why, if all sewerage plants overflow, the exemption is restricted to a number of specified localities and not extended to all existing sewerage systems within Class P waters in New South Wales.

Amongst the matters to be addressed under Schedule 1 in relation to each regulatory proposal are:

* *an evaluation of the costs and benefits of that proposal and its options;*

* *an examination of the proposal to determine whether it accords with the principles and spirit of the enabling Act.*

My Committee would be grateful if you could provide it with details of the assessment carried out under Schedule 1 by your department in relation to this regulation.

I am enclosing with this letter, a copy of a letter my Committee received from the Australian Conservation Foundation, dated 10 May 1994. My Committee would be grateful if you could also comment on the issues raised in that letter."

LETTER FROM AUSTRALIAN CONSERVATION FOUNDATION

"Dear Mr Cruickshank *10 May 1994*

Re: Disallowal of Proposed Amendment to Clean Waters Regulation

I am writing to ask the Committee to disallow the proposed amendment to the Clean Waters Regulation by deleting proposed paragraphs (b) and (c).

The arguments for disallowing these parts of the regulation include:

- *The regulation weakens the protections currently operating under the Clean Waters Regulation by for instance, increasing the amount of nitrogen that may be emitted to the waters by 400 percent. The*

regulation will allow sewage containing nitrogen, one of the major causes of blue-green algae, to be disposed into protected waters in Picton, Tahmoor, Thirlmere, Moss Vale, Mittagong, Bulahdelah, Karuah, Tanilba Bay and Lemon Tree Passage.

- *The Australian Conservation Foundation has sought the advice of industry and has been advised by industry that it is able to meet the existing standard under the "P" classification and that its ability to meet the standard does not involve technology that is more expensive than the Water Board's current proposal.*

- *The EPA have written to ACF refusing to allow them to exercise their rights to appeal the change of classifications to the Land and Environment Court. The ACF must now seek a declaration from the Court that the EPA is acting illegally. Unless the regulation is disallowed, there is a real prospect that plants may be built to discharge sewage in breach of the regulation and before the Court, makes a decision.*

- *The regulation is opposed by many community groups, including in the areas to be affected: ACF, Cleanup Australia, Surfrider Foundation, NSW Shellfish Association, National Parks Association, Total Environment Centre, Greenpeace, Wollondilly Residents Environment Network and others.*

- *The NSW Shellfish Association has expressed its grave concerns to ACF about the impact that the amended regulation will have on its industry if the proposed sewerage treatment plants proceed in the Port Stephen's area. The Hunter Division of the NSW Health Department has advised, "To ensure the public health safety of oysters grown in this state, Sewerage Treatment Outfalls into or affecting areas used for growing oysters, irrespective of the degree of sewage treatment, must be avoided."*

- *The regulation is almost certainly invalid. It is invalid because the EPA has no power to make it under the Clean Waters Act. Section 11(3) does not confer a power to make a regulation prescribing the classification of waters. Section 36(1) (k) appears to be the only source of regulation-making power to create an exemption to the Act. But this regulation is inconsistent with the Act and so ultra vires. Compliance with a standard cannot be waived for the particular waters except by effecting a*

reclassification. This regulation contradicts rather than complements the Act by derogating from the duty to apply standards for classified waters: see Burnum Burnum v Electoral Commissioner, 15 September 1993, C/A.

Should the Committee not agree to disallow the regulation, I would respectfully request the opportunity to address the Committee about these matters before it makes such a decision.

Yours sincerely
Sue Salmon
National Water Campaign Convener"

MINISTER'S RESPONSE

In a letter dated 10 August 1994, the Minister wrote to the Committee enclosing the assessment of the regulatory proposal that was conducted by his department. (That Assessment is set out in Appendix I of this Report) The Minister said:

"Dear Mr Cruickshank

Clean Waters Act 1970 - Regulation
(Relating to standards for waters and testing procedures)
Gazette 31 March 1994

I refer to your letter dated 12 May 1994 concerning the above Regulation. I regret the delay in responding but, as discussed with officers of your Committee, that letter appears to have been lost in transit. I am replying to the copy faxed by Mr Jefferis to the EPA on 18 July 1994.

As required by the Subordinate Legislation Act, a very detailed Schedule 1 assessment of the Regulation was carried out by a team of officers at the EPA comprising lawyers, economists and technical experts. In accordance with that Act, I considered this assessment before approving the making of the Regulation.

Class "P" standards - changes: In particular, I would stress that the Regulation does not have the effect of exempting any sewerage schemes from all the standards applying to Class "P" waters.

The only change in standards is to increase the ammonia limit (from 0.5 mg/l to 2 mg/l) and to permit the construction of sewer overflows (and even then only if approved by the EPA).

The other standards set out for Class "P" waters in the Regulation (in particular, clause 8 paragraphs (a) - (l) and Schedule 2) continue to apply.

The sewer overflow change has been limited to existing residential areas in which the provision or upgrading of sewerage infrastructure will result in an improvement in water quality. The sewer overflow change does not apply more broadly because the Government believes that the Regulation should not open the way for <u>new</u> urban development or subdivision in areas near Class "P" waters at the present time, due to existing water quality concern.

ACF Letter: You have asked me to comment on the letter to you from the Australian Conservation Foundation. That letter raises technical and legal issues.

Technical Issues: The old ammonia limit of 0.5 mg/l was a 1970's British drinking water standard. I am advised that sewage treatment systems generally cannot produce effluent of this standard 100 percent of the time without more serious environmental consequences. Although there is a treatment technology available to reduce the concentration to 1 mg/l and below, the potential environmental damage associated with the by-products may outweigh the environmental benefit associated with the ammonia reduction. The new limit will allow the EPA to decide which process is the most environmentally beneficial in licensing the plants, on a case by case basis.

I understand that there may be private sector companies that say they can meet the existing ammonia levels. I understand that in more detailed discussions with technical experts they have, however, noted that this may not be feasible 100 percent of the time.

The Government is certainly willing to explore innovative solutions put forward by the private sector if these can meet the environmental requirements. I have been advised that the Minister for Planning and Housing has indicated a willingness to consider private sector solutions through an open tender process in relation to the Picton Scheme to determine whether there are new solutions available. The changes to the Regulations will not preclude these from being considered.

Legal issues: ACF wrote to the EPA on 14 April, raising objections to the Regulation under Part 3 of the Clean Waters Act. That part deals with the process of classifying and reclassifying waters. The EPA responded

by clarifying that the Regulation does not change the actual classification of any waterways protected under the Regulations. The waters in question are still Class "P" waters. Furthermore, the procedure for reclassifying waters contained in Part 3 does not involve any alteration to the Regulations.

The confusion seems to have arisen because of a misunderstanding of the legislative scheme. The scheme is that the Regulations create the various classifications and the standards that apply. Part 3 of the Act then deals with the method by which these classifications and standards are applied to particular bodies of water.

I am advised that the Regulation is not invalid. In accordance with standard procedure, the Regulation was referred to the Parliamentary Counsel, who gave an opinion that it could legally be made. As noted in the explanatory note to the Regulation, the power to make it derives from sections 11 and 36 of the Clean Waters Act.

Yours faithfully
Chris Hartcher MP
Minister for the Environment"

COMMITTEE HEARING

As the Minister in his letter had strongly refuted the assertions of the Australian Conservation Foundation, the Chairman considered the appropriate course was to invite the parties to give evidence on the regulation at a meeting of the Committee. The Chairman was also aware that notice of motion for disallowance of the regulation had been given by Dr. Peter Macdonald, Member for Manly, in the Legislative Assembly. A meeting was convened on 12th August to discuss this proposal, but a quorum was not present. Accordingly, arrangements were made to take evidence on the first available date thereafter, 15th September 1994.

At its meeting held on 15th September, 1994, the Committee took evidence in relation to this Regulation from the following persons:

Ms Donna Elizabeth Campbell, Legal Officer, Environmental Planning Authority of NSW.

Mr. Peter James Marczan, Waste Water Engineer, Environmental Planning Authority of NSW.

Mr. Michael Charles Dean, representing Save Hawkesbury's Unique River Environment (SHURE).

Mr. Andrew John Speer, Manager, Environment Branch, Sydney Water Board.

Mr. Timothy Lordon Fisher, representing the Australian Conservation Foundation.

The complete transcript of evidence is set out in Appendix 2 to this report.

EVIDENCE OF ENVIRONMENT PROTECTION AUTHORITY

Ms Campbell of the Environment Protection Authority, outlined the purpose of the regulation as follows:

Ms Campbell: I thought I just might take this opportunity to give people a bit of a background on what the Regulation is all about. It should only take about five minutes. I thought I would explain exactly what the Clean Waters Regulations do. They have a classification system for bodies of water in New South Wales. Not all waters are classified, but some of them, particularly around the metropolitan area have been classified and there are six classes in that classification, starting with Class S which is the most pristine. That is for specially protected waters and in the case of Class S, no waste at all must be discharged. The next category down is Class P waters and they are called protected waters and this regulation relates to those protected waters. The standards that apply in relation to these Class P waters were set in the 1970s when these regulations were made and are based on British Drinking Water Standards. These Standards allow for waste be discharged into Class P waters, but they regulate the sort of waste that can go into the waters and they restrict the concentration of such things that can be discharged. The sort of things they regulate are things like pesticides, lead and ammonia. The Standard expressly authorises discharges by sewer, but prohibits overflows from sewers. That is basically the classification system.

.....

Basically, what the Regulation does, it allows for the possibility for the Planning Environmental Evaluation to proceed. The Regulation does not authorise any particular system, it just sets a frame in which it can occur. What has to happen is it does not override any of the final processes, Part 5 of the Environmental Planning Assessment Act will have to be complied with. Environmental assessments will have to be done and the processes that are put forward will have to be evaluated. What happens then is if it actually survives that test and the system with the sewer overflows and the ammonia levels proposed appears satisfactory to everyone, then the EPA is in a position where it can regulate it and attach stringent conditions.

Ms Campbell under cross examination by Committee members, indicated that the systems proposed could not prevent overflows.

Committee Member: In the document, I have that analyses the various options in relation to this Regulation, it is made clear that the EPA will conduct or that there will be monitoring by the EPA and proper environmental impact statements done on a case by case basis and this document says in relation to that, that each of these developments will need to show that the expected improvements in water quality outweigh any possible impacts due to overflow.

Ms Campbell: That is right.

Committee Member: With the poor information that I understand you have on overflow events, how are you going to come to a fairly conclusive result?

Ms Campbell: I think that when I am talking about the poor information, that is on existing systems that we have had up to date. These are new or augmented systems that have been designed and they will be designed so that they have this monitoring and this monitoring will be part of the process. The way the Regulation is framed is it actually requires the EPA before we actually approve any sewer overflows to take into account whether the difference between having it and not having it, so we will be required to monitor what happens.

Committee Member: But you are not going to know that prior to it actually being put in place, though, and once it has been put in place then you have probably spent a lot of money and it is going to be difficult to pull it out. You are going to have to have, I would have thought, to really come to an empirical conclusive result, you are going to have a couple operating a monitor for a while to see what happens, otherwise you are in guessing land aren't you, if you have got no real data already on what the existing overflows are on existing plants.

Ms Campbell: I am just wondering; Peter Marczan is the technical expert, I am just a lawyer.

Mr Peter Marczan gave technical advice on the monitoring of the systems.

Committee Member: Can you tell us what structure your organisation will put in place to monitor the performance of the work over time? What is your normal process? You issue a license which sets standards and then you have to, I assume, enforce compliance with those standards?

Mr Marczan: Yes, we normally require monitoring of the effluent itself. Most other plants around the Sydney area are on a six day cycle and then there's actually another day either side of that sixth day, so the requirements for these plants would be similar or, perhaps, even more stringent. So, I suppose we are getting close to taking a

sample on average, every second day and the EPA comes in and audits that. Every now and again, we will come in and take our own samples and take them away and analyse them.

Committee Member: Mr Chairman, could I ask for an explanation of the reasons for variation in ammonia level output. You say that maybe half of the time they will be .5 and then they will vary. What is the process going on there and what I am trying to get down to is earlier comments by the Water Board and the need for culpability in going for a prosecution. I am thinking that under the licensing proposal that is going to be in place by the EPA, I am trying to understand what is going to allow the operator or a sewage treatment plant to get away with consistently higher levels than .5. What sort of reasons would be offered for those variations? I am trying to find if there's a number of escape hatches there for people where there is not a strong enough will within the EPA and I think clearly one of the concerns is how determined the EPA is perhaps going to be in relation to monitoring and so forth in the future. If you could just give me an explanation of that process and how you see it occurring in the future.

Mr Marczan: The first part of your question - the reason that the ammonia concentration coming out of the plant varies is for a number of reasons. The main ones all revolve around the fact that it is a biological process so that the rate at which ammonia is removed, varies and it varies as the temperature changes, as the flow changes and most important one is as the characteristics of the sewage coming in vary and that varies throughout the day, because people's activities changes and biologically what it means is that the ratio of carbon to nitrogen changes during the day and that affects the rate at which the organisms doing the work can remove the ammonia. So during the day the ammonia levels just sort of follows a wave in concentration. And the second part of your question - I think I need to ask you to run it by me again.

Committee Member: Given those sort of reasons that you put forward it seems to me that there doesn't seem to be a lot of control over technology once it's in place. So in other words what is going in to the front end of the system has a consequent result on what comes out at the other end in terms of ammonia levels. Really, you are in no position to go to that sewage plant and say some process or technique has now got to be put into place or something has got to be done to improve the level. You have really got no control over it so in effect what's the role of the monitoring process? Is it once that technology is in there and is working to its maximum capacity one would assume 24 hours a day and that other variable factors that technology has no control over, like temperature input, really, what's the purpose of the monitoring process, because you are not going to be able to say to the operator that they have got to undertake some action.

Mr Marczan: The design of the plant revolves around picking or trying to estimate what the most, the largest excursion in temperature and flow and characteristics of the sewage are going to be and designing around those. So we are talking about the process controlling the variations within boundaries. Experience has been that the upper bound is around 2mg per litre. I am not talking about varying wildly around above two. I am saying that the variation in process during a normal day will take it up to around about 2.

Committee Member: We are really going to get to maximum levels every day of the week then?

Mr Marczan: No, sorry; on a very cold day in winter you might hit 2. You are trying to design your plants so that you cope with the worst case.

Committee Member: What you are really saying is it would vary somewhere between .2 and 1 in most cases with occasional fluctuations in others?

Mr Marczan: Up to 2, yes.

EVIDENCE REGARDING COMPLIANCE WITH SCHEDULE 1 REQUIREMENTS OF THE SUBORDINATE LEGISLATION ACT

Ms Campbell was re-examined and gave evidence on compliance with the Schedule 1 requirements of the Act.

Committee Member: I would just like to ask a few questions that actually relate to our function. We are here to determine really whether or not you comply with the requirements of the Regulation Review Act. One of those is that an Environmental Impact Statement is made. We are just wanting to be sure that Schedule 1 was complied with.

Ms Campbell: Yes.

Committee Member: There was an assessment annexed to the Minister's letter to us. It wasn't signed or dated, I am advised. Do you know who actually prepared that particular assessment?

Ms Campbell: Yes, that was prepared by - there was a team of people on it. There were lawyers, there were economists and there were technical experts; water quality experts and waste water engineers like Peter and that went to the Minister before he actually made the decision to make the Regulation.

Committee Member: Schedule 1, clause 2(b) of the Subordinate Legislation Act requires that the objectives of the regulatory proposal are to be checked to ensure that they accord with the objectives, principles, spirit, and intent of the enabling Act.

Apart from attaining the certificate to the Parliamentary Council that the Regulation could be legally made, can you indicate what other steps you may require to comply with this requirement of Schedule 1?

Ms Campbell: As far as the legal checks are concerned the EPA has a Legal Branch and I am the Director of it and we have to be satisfied that it can be legally made. We don't want to recommend to the Minister something that can't legally be done. The ultimate check is the Parliamentary Counsel's office. Their job is to advise the Government actually of all regulations. No regulation can actually be made unless there is opinion from the Parliamentary Counsel that legally it can be made and that was obtained in this case.

Committee Member: Item 2(c) of Schedule 1 requires that alternative options for achieving the objectives of the regulatory proposal, whether wholly or substantially, and the option of not proceeding with any action must be considered. I note that you have considered four options in the Schedule 1 assessment. Apart from the do nothing option which is option 1, would the other options wholly achieve the objectives?

Ms Campbell: Not to the same extent as the preferred option. That was the view. All the options were analysed and option 4 I think which is the one we came up with is the one that achieves the best environmental outcome which is what this is about.

Committee Member: You don't believe that any of the other options would substantially achieve the objectives?

Ms Campbell: They may substantially but this was the best one.

Committee Member: Schedule 1, 2(d) requires a cost benefit analysis for each option and a comparison of the direct and indirect and tangible and intangible cost benefits. The cost benefit analysis you have provided with the Minister's letter does not seem to identify these costs. For the benefit of committee members would it be possible for you to identify the direct, indirect, intangible or tangible costs of these options?

Ms Campbell: On Page 5 of the analysis there is discussion about the various costs. If you look at Page 6, I'm sorry, it talks about the costs.

Committee Member: The Environmental Impact Statement for each of these developments will need to show that the expected improvements in water quality outweigh any possible impacts due to overflow events.

Ms Campbell: Can I also say a more detailed cost analysis will need to be done as each infrastructure proposal is analysed in accordance with Part 5 of the Act has to be done under the planning legislation on a case by case basis. So this isn't the end of it.

Committee Member: This is merely the regulation that enables the areas to be undertaken.

Ms Campbell: That's right.

Committee Member: We are really here, not to examine public policy, we are only here to make sure you have complied with the requirements of the Act. The Minister must also consider the principle that implementation of a statutory rule should not normally be undertaken unless the anticipated benefits to the community outweighs the costs, bearing in mind its impact on the economy, consumers, members of the public, relevant interest groups and any sector of industry and commerce that may be affected. What steps did the Minister take to determine what impact would arise for these groups? Did adequate consultation take place?

Ms Campbell: The environmental groups were aware of this Regulation. They were not aware of the precise details of it, but they were aware that this Regulation was being made and there was correspondence that I have got on file between us and some of the peak environmental groups about this Regulation.

Committee Member: Was there any advertising?

Ms Campbell: No.

Committee Member: There was no formal consultation process put in place?

Ms Campbell: There wasn't a formal process, that's true.

Committee Member: This is Schedule 1, so it is not a strict requirement?

Ms Campbell: No, there's no legal requirement, that's right.

Committee Member: Why did you decide not to conduct a formal process? Was there some reasoning behind that? If it wasn't necessary so why do it?

Ms Campbell: In this particular case because there will be extensive public consultation if the infrastructure proposal goes ahead and this Regulation will have no impact. It will achieve nothing until the actual infrastructure proposals go ahead and those proposals will be subject to exhaustive public consultation, under the EIS it has to be prepared and under the Planning Legislation it has to be exhibited and so on and people get an opportunity to comment at that stage.

Committee Member: Once this Regulation is in place you can have consultation or whatever else on a case by case basis but really the broad framework of the rules have been made and you can really do what you like within that framework can't you?

Ms Campbell: I don't think that's true. I think that the Planning Legislation requires that all the options be examined for a particular proposal and the Act requires that the best environmental outcome be decided is the one that you proceed with, taking into account economic factors. At the end of the day there must be public consultation. This Regulation does not plump for a particular system.

Committee Member: It is merely enabling?

Ms Campbell: That's right.

Committee Member: Yes that's right, it's enabling but then once it is enabled I understand it really comes down to a large extent to the credibility of the EPA that there's concern about whether or not you are going to be forceful enough in the process.

Ms Campbell: It is not just the EPA. What has to happen is the Environmental Impact Statement has to be done and it is now determined by the Minister for Planning, not by the Water Board and they have to come along to us and get a licence. If the Minister gives us any directions as to licensing, they have to be tabled in the House. We do have an independent Board.

Committee Member: So every one of these will require assessment?

Ms Campbell: Yes they will because they will significantly affect the environment.

EVIDENCE OF AUSTRALIAN CONSERVATION FOUNDATION

Mr Fisher outlined the Australian Conservation Foundations position as follows:

Mr Fisher: Yes I have a written submission which I would like to hand around - unfortunately there's only 8 copies - and I would like to run through it I think if that would be appropriate. I apologise for the quality of the photocopying.
The first page is just basically a summary of the points we want to speak to and I will go through them one by one. Firstly we consider that the Regulation my have an adverse impact on the business community. These are in no particular order, by the way. You will be aware the estimated cost to customers of one of the seven sewage schemes, the Picton one, is estimated to equate to an additional $600 per quarter per household or $130 per quarter of which is likely to be charged to residential customers as a recurrent charge, with the remainder being charged as an up-front development charge borne by developers which will be in the order of $21,000 per lot. In this way, consumers and other businesses, will pay for the cost of the sewage system.

It is our contention that a range of other options for the treatment and disposal of sewage were not given adequate consideration and that, as a result, the costs incurred on business and industry will be greater than if other options were explored and pursued. I will speak to those other options later.

Furthermore, the proposal to permit increased nitrogen levels into the Hawkesbury Nepean will further compound the serious problems associated with high nutrient levels such as algal blooms in the lower tidal and costal regions of the river. In the process, the Regulation will add to the costs incurred on the recreation and tourism industries, through reduced amenity and environmental values, on oyster production areas and perhaps on recreational and commercial fishing activities as well.

EVIDENCE OF WATER BOARD

Mr Spears Manager of the Water Board, Environment Branch outlined the Board's position as follows:

Committee Member: My understanding is that the purpose of this proposed regulation is to vary current EPA standards to potentially allow discharges into waterways that would otherwise exceed current standards. How does this proposal relate to the proposed licence the Water Board has indicated it will agree to enter into should it be corporatised? Are the standards in that licence, the corporatisation licence, the same as current standards or do they relate to these proposed variations?

Mr Spears: They don't relate to these proposed variations except in as much as the variations would allow certain conditions to be imposed on the Water Board through an EPA licence. In the process of developing the corporatisation instruments the EPA has always said, and rightly I think, that their licences should be held to be entirely separate from the operating licence given to the Water Board. So that their regulations and their requirements are not subservient to something else, some other instrument. So the intention of the operating licence is to require the Water Board to meet the relevant standards imposed on it by the EPA but without referring to these particular standards. If you wanted to follow up what those particular standards would be or are, in certain circumstances you would have to go from the operating licence to the various licences imposed on the Water Board by the EPA.

EVIDENCE OF SHURE

Mr Dean, Secretary of Save Hawkesbury's Unique River Environment (SHURE) indicated his position as follows:

Mr Dean: I would like to address a couple of issues that relate specifically to the regulation and why we think it is hastily drafted, inappropriate and non-specific and why the Committee should not make this regulation now. We have dealt with the problem of on site disposal systems and the pressing problems to improve water quality

systems. The same problem exists everywhere in the Hawkesbury Nepean system where on site disposals are used and I mentioned the problem with the trade off we are experiencing acutely in a number of places in the Hawkesbury Nepean system where we have freed our backyards but lost the river. There is a methodology about using on site disposal systems which has to be addressed. I know there's a great deal of resistance to it and rightly so for anyone who has experienced the old style brick pit septic trickling filter system, some of which still exist in my locality and none of which are working any more because they're full. But workable on site disposal systems exist and they should be used in low density areas because they are going to save us an enormous amount of money and the alternative of centralised treatment is not cost effective in these local areas and it is not going to give us better water quality in the local waterways and this is extremely important before we spend $65 million or more of public money.

A lot of the discussion about the regulation deals with the level of ammonia and it was asked "what levels of ammonia should we be looking at?" The regulation proposed to change the level of ammonia. Ammonia nitrogen is broken down in the treatment process, whether it is biological or biochemical or natural or artificial, into nitrate and other forms of nitrogen and these are plant nutrients and they are taken up by the plants in the system. The plants can be algae in the sewerage system, they can be organisms in the river, if you overload the system with nutrients in the river you get the blooms that we have all been seeing.

The levels that we should be seeing in natural waterways, in a modified eco-system protection scheme which is sub-pristine, range between .8 to 30 degrees C at a high pH up to about 2.5 at zero degrees at a lower pH - this is within the normal pH range in a river. So the figure of 2 we are taking about - when you consider ambient temperatures in waterways in Australia in the Sydney region - is going to be too high most of the time. There aren't any figures that I have got on hand in my mind about the pristine systems but I know that AWT have done monitoring in our area which would give us an idea of what the ammonia nitrate levels are.

GENERAL DISCUSSION

In the discussion which followed the giving of formal evidence the Environment Protection Authority undertook to respond to the issues raised by all the parties on production of a transcript of the proceedings.

Committee Member: We have heard evidence from the EPA that they considered options, four of them. We have heard other evidence from the opponents to the scheme that there were other options that they don't believe were considered. I would be interested in hearing formal submissions from the Board to find out what are the alternatives.

Committee Member: What about from Mr Dean?

Committee Member: Maybe when the transcript is typed up they can be circulated amongst the various people here and give some commentary on the various allegations and assertions about the shortcomings of each of the various players.

Committee Member: What I would like; Mr Dean speaks with great confidence about his subject and I am in a bit of a dilemma because I come from the other side of the ranges where a lot of these things do work but unfortunately you have got four million, five million people here living on this side of the ranges. I'm not sure how all these systems work. I know they will work out in the scrub where it's all sandy and there is one person to every couple of square miles.

Committee Member: For what it is worth, the Water Board Inquiry could not agree on almost anything. One thing that we all did agree with which is that the Water Board has historically been locked into a pipes and pumps engineering mentality and I think that is what SHURE is trying to get across to us. There was evidence presented that the Board is trading off and trying to invest and explore new technology. I am just wondering whether it may be worthwhile getting these people to come up with formal commentary on those other alternatives looked at. Maybe the pipe and pump option is the only way to go given the level of sophistication or level of confidence. It may be worthwhile getting that commentary.

Committee Member: You have heard what Mr Knowles said. I agree with that. The transcript will be circulated and then at the next meeting we will be asked to come back again. It won't be next week. Then we break for two weeks, so it is going to be at least three weeks.

Committee Member: How long is this going to go on for? Is this going to turn into a grand inquiry where every environmental group is going to be able to come on?

Committee Member: What we have got, as Craig said, there are all kinds of differing views.

Committee Member: My view, there were only 350 individual submissions to the Water Board Inquiry on the different options to deal with this sort of thing. I am not wanting to repeat that performance. However, what I wanted is some commentary from these players, particularly on their compliance with our Act and requirements, alternatives and cost benefit relationship of those alternatives. We have been told by other people that they are not satisfied with the work they have done. The EPA has said it has done what it can.

Committee Member: I don't want this to turn into anything other than what we have got here. I think we have enough from both sides of the story, confusion if you like, in the minds of some of the Committee members and myself. I would like to get that

resolved along the lines that Craig has talked about.

Committee Member: That is what worries me, it is just going to be never ending in terms of people who say they want to have input.

Committee Member: Is there a formal motion? The EPA has asked to address us briefly.

Ms Campbell: I just wanted to be clear about what it was you wanted me to do. Is it that you want me to respond to what has been said? I can just make a couple of observations now I guess. One is that I think the basic problem with maintaining the system of having septic systems which is basically what you are saying, we can kind of upgrade them but from a regulated point of view.

Mr Dean: Not 'kind of'; I put a proposal forward about what the Board should start doing tomorrow.

Ms Campbell: And it related to individual households; it is not a centralised system.

Mr Dean: No.

Committee Member: Is it possible on the question, through Mr Chairman to any of you - is it possible to send these people a copy of the transcript; they can then reply in writing to any point that they feel has been raised by various other parties here today and we can have those ready for the next meeting. We could have a meeting next week or we could have a meeting in three weeks time. Let me finish by saying if you send us something this high in paperwork I'll throw it in the garbage bin and won't bother reading it; but if you send back something that is brief and short then I would be very interested to receive it. Is it possible to have that done? That is the question I am directing to you.

Mr Jefferis: There is no need for the Committee to have another formal hearing: if the EPA responds to each of the matters raised on behalf of SHURE and by Mr Fischer then the Committee can deliberate on those and come to a conclusion.

Ms Campbell: That seems fair.

Mr Spears: I understood that the request from Mr Knowles was for the Water Board to make a submission presumably in the same manner the EPA has been asked to.

Committee Member: There are five of you here today, that goes to you five.

Mr Fisher: If you have any specific questions that you want to add to those transcripts that would be helpful too because it would direct us to what you want to know basically.

SUBSEQUENT SUBMISSIONS

Mr Fisher of the Australian Conservation Foundation wrote to the Committee on 30 September 1994 in the following terms:

"Thank you for your letter of 21 September regarding the above. I apologise for my late response; unfortunately your letter was addressed incorrectly.

As you proposed at the hearing, I wish to provide a brief supplement to the evidence which I presented on 15 September.

ACF submits it would be prudent for the Committee to make enquiries about best available technology in Australia and its capacity to meet the existing Clean Waters regulation. Perhaps a national advertisement would be appropriate, together with some enquiries to industry organisations, the Federal Environment Protection Authority and the CSIRO. You may also wish to note a forthcoming AWWA International Conference on Biological Nutrient Removal 4-6 October, in Albury. At this conference, a number of Australian and International papers will be presented on recent advances in both biological and chemical removal of nitrogen from waste streams. An understanding of these advances is, we believe, necessary if world best practice is to be achieved.

ACF maintains its total opposition to the proposed change in the Clean Waters regulation in question. To this end ACF proposed alternatives to the proposed change to the regulation which would protect the environment and ensure that best available technology is applied at least cost to the consumer.

At least one of the technologies discussed below complies with the current Clean Waters Regulation on ammonia and nitrogen levels.

1. The total recycling and re-use of effluent produced by any large or medium scale sewerage treatment plants; &/or

2. The adoption of on-site domestic and commercial sewerage management options, including
   - improved management of existing septic systems, particularly in terms of regular desludging and reduced water input;
   - the use of small and medium scale on-site aerobic treatment and effluent re-use systems in all new allotments, and to replace unserviceable septic systems;
   - a regulated requirement that on-site systems be periodically cleaned and maintained, and replaced where necessary

In all cases, a full assessment of economic and environmental costs should be undertaken before any option is chosen. Furthermore, given the large number of private companies now active in the provision of sewerage infrastructure, tenders from the private sector should be invited as part of the technology selection process.

The following are examples of various sewerage management options, the like of which should be given serious consideration prior to approving a change to the regulation:

1. **Envirocycle Aerobic System:** (Envirocycle P/L NSW)
Attachment 1 is documentation of the Envirocycle Aerobic on-site sewage processing and effluent re-use system. Envirocycle is one of several on-site domestic aerobic sewerage treatment systems currently available in Australia.

The Envirocycle system is one a number of self-chlorinating systems which is designed to provide disinfected water for on-site re-use, such that BOD and nutrient content are subject to further "processing" within the soil. Much of the nutrient content in the effluent is then taken up in plant growth, leaving little - if any - nutrient content in any off-site runoff.

It is important to note systems such as this are not simple septic tank systems. Rather they are small or medium-scale sewerage treatment plants which include multiple processing stages, and which disinfect effluent to standards acceptable for non-potable re-use. This and other systems are available not only for domestic applications, but can also accommodate shopping centres, office blocks, hotels, etc.

I am reliably informed by Mr Roger Vass, Sewage Strategy Team, Melbourne Water, that a typical domestic system such as this costs the equivalent of $600 to $800 per year; well below the $2,400 per year projected household cost of the proposed Picton sewerage plant.

2. **Corinet Bay, Victoria** (Aeration & Allied Technology, NSW/Westernport Water Board)

The sewerage treatment plant under construction at Corinet Bay, Victoria, is an example of a medium-scale local aerobic treatment facility, designed ultimately to cater for a population of 7,500 to 8,000 people.

The facility will not discharge any sewage into waterways or the sea; 100% of its effluent will be discharged to land. As such, the facility includes:

- 29 ha of woodlots (soon to be planted) for timber and firewood production under a 15 to 20 year rotation, managed principally under a contour and furrow irrigation regime; and

- a large storage lagoon (60M1) to hold all winter flows until required for irrigation purposes. Holding and irrigation capacity based on a 1 in 10 wet year.

Attachment 2 provides further details of this plant. Assuming an ammonia level of 20 to 30 mg/1 concentration (max) on discharge to the lagoon, together with extensive nitrification through lagoon storage and irrigation, I am informed by a technical expert that any effluent returned from the woodlot to the lagoon would have ammonia levels of no more than 1mg/1. As overflow discharges to Westernport Bay would only occur under 6:1 or greater stormwater dilution factor, **resultant ammonia levels (<0.2 mg/l) would fall well within the existing Clean Waters regulation for ammonia (0.5 mg/l).** Furthermore, under a worst-case wet-weather scenario, discharge from the complex into Westernport Bay will be less than 3 mg/l BOD5.

3. Bio-Resources Value-adding Anaerobic Treatment System

Bio-Resources P/L successfully operates an anaerobic plant which processes the waste of 12,000 pigs (equivalent to 50,000 people) on-site at a pig farm near Ballarat, Victoria. The remarkable features of this plant include:

- a world-best-practice dissolved air flotation system, using ferric chloride and high-pressure air injection, at the primary treatment stage;
- a first stage anaerobic treatment tank, heated to 35 Celsius;
- a second-stage tank which collects and diverts methane (via scrubber) to a series of generators which power the entire farm. Excess power is sold to the SECV grid;
- on-site utilisation of 50% of the liquid compost to fertilise 800 ha of grain crops, enough to provide on-half of the farm's feed requirements;
- processing of the remainder of the compost into a bagged horticultural product;
- grass-filtration, storage and re-use of liquid effluent to clean the pig farm and transport pig waste for treatment.

The plant cost $5 million, and will have paid for itself within 5 years from commencement. The plant is fully automated.

Bio-Resources is adapting this system into a domestic sewerage treatment system for consideration by a number of interested parties, including the Shire of Narracan and the Latrobe Regional Commission in Gippland, Victoria. To accommodate the low solid content of domestic sewage, Bio-Resources proposes incorporation of a solid organic waste service where non-toxic waste from industrial, commercial and domestic sources would be mixed with the sewage for processing into energy and fertiliser products.

Attachment 3 provides further details of the Bio-Resources approach to waste management.

4 Caroline Springs Proposed Sewage and Stormwater Treatment and Re-use, Melbourne (Coomes Consulting P/L, Victoria)

Caroline Springs is a new urban subdivision of some 600 ha to the west of Melbourne. Due to the high costs of connection to existing sewage infrastructure, the developers (which include the Coomes Consulting Group) have proposed an innovative wastewater management and re-use model which includes:

- construction of a storage dam on Kororoit Creek, which runs through the subdivision, from which non-potable water would be drawn as required;
- construction of wetlands and retarding basins to 'treat' stormwater prior to discharge into the reservoir;
- construction of a sewerage treatment facility, treating to high, tertiary standards, and discharging into the reservoir;
- a second reticulation systems for non-potable water use (residential garden irrigation; toilet flushing; car washing; fire-fighting; waste bodies for passive, non contact recreation; and irrigation of sports facilities)

Attachment 4 provides further details of the Coomes proposal

Attachment 5 provides extracts from a research paper prepared by Coomes Consulting (and others) entitled Regional Development Implications of Wastewater Re-use: Werribee Case Study. This report discusses the feasibility of utilising effluent form the Werribee Treatment Complex for domestic, non-potable use by up to 200,000 people in Melbourne's Werribee growth corridor.

Thank you once again for the opportunity to present our case. If you or any members of the Committee should require further information, please don't hesitate to call.
Yours sincerely
Tim Fisher
Natural Resources Campaign Co-ordinator"

A further letter of the same date from the Australian Conservation Foundation was subsequently received by the Committee:

" Since writing to you earlier today, further information has come to hand about some more sewerge plants that operate within the existing Clean Waters standard, containing average NH3 pollution to below 0.5mg/l.

Lists of these plants are attached for the information of the Regulation Review Committee.

Clearly the design of plants to meet the existing standard is technically feasible, eliminating the need to change the regulation to a highly simplistic, flat rate NH3 level of 2 mg/l.

This information encourages the Foundation to repeat the earlier submission we made requesting the Committee to make its own inquiries about the best available technology in Australia.
Yours sincerely
Tim Fisher
Natural Resources Campaign Co-ordinator"

MINISTERS RESPONSE

The Minister for the Environment responded to the above issues on 10 October 1994 as follows:

" Dear Mr Cruickshank

AMENDMENTS TO CLEAN WATERS REGULATION

I refer to the recent hearing of the Regulation Review Committee at which the Environment Protection Authority provided evidence in relation to the Clean Waters Regulation.

Attached is the response of the EPA to outstanding issues raised by the Committee and the representatives of the peak environment groups who also attended the meeting held on 15th September 1994.

Also attached is advice from the Parliamentary Counsel's office confirming that the Regulation is within power. The advice was obtained in light of concerns expressed by the Australian Conservation Foundation as to the legal validity of the Regulation.

I trust that this information is of assistance. Please do not hesitate to contact me should you require further information.

Yours faithfully
Chris Hartcher
Minister for the Environment"

The Environment Protection Authority's response was as follows:

RESPONSE OF ENVIRONMENT PROTECTION AUTHORITY TO ISSUES RAISED AT REGULATION REVIEW COMMITTEE MEETING, 15/9/94

"The Environment Protection Authority (EPA) has been asked to respond to any outstanding issues raised by the Regulation Review Committee and the representatives of peak environment groups at the recent meeting of the Committee which considered the amendments to the Clean Waters Act 1970 - Regulation. Outstanding issues have been identified on the basis of the transcript of the evidence which the EPA received on 26 September 1994.

Concerns of environment groups. The environment groups acknowledged that septic tanks are a significant environmental problem in the areas affected by the regulation. The disagreement related mainly to the means of overcoming their impacts. Environment groups perceived the regulatory amendments as favouring the traditional, large-scale engineering approach to achieving improvements in sewage treatment. One other concern related to a perception that the regulation change meant that large-scale projects could proceed irrespective of their environmental impacts. Another concern was about the consistency of the amendments with the EPA'S legislation.

What the regulation does. The amended regulation allows for the possibility of developing sewerage schemes in designated areas which discharge into Class P waters, where operational authorities have argued that this will improve water quality and protect public health. The EPA considers that the regulation is necessary for providing not simply traditional solutions but as importantly, more innovative technological solutions. The new regulation does not automatically allow for any schemes to proceed. Any proposed scheme must be justified by the proponent through the formal environmental impact assessments required by the Environmental Planning and Assessment Act. Irrespective of whether a traditional approach has been proposed initially, the planning legislation requires that alternatives to the favoured option be evaluated as part of the comprehensive environmental assessment process, which also requires an assessment of social and economic impacts. If this first test is met, it will then be strictly controlled through the EPA's pollution control approval and licensing system.

In short, the amended regulation allows both traditional and innovative technological solutions to be considered on their merits in terms of both the environment, social and economic impacts.

Following is a detailed summary of the outstanding issues and the EPA's response.

Issues

Appropriateness of ammonia standard

The Regulation Review Committee questioned the appropriateness of setting the maximum ammonia limit at 2 milligrams of ammonia-nitrogen per litre of water in the context of practices elsewhere and in light of ambient ammonia levels. The EPA was also asked to supply information on compliance with ammonia levels from sewage treatment plants elsewhere in Sydney and comment on the relative performance of alternative technologies in terms of ammonia discharges.

Representatives of conservation groups also questioned whether, in the case of the proposed Picton scheme, these levels would result in an increase in algal blooms in the Hawkesbury-Nepean system, and the standard's appropriateness in light of ambient temperature conditions and the contribution sewage effluent would provide to total water flows. Another concern was that companies capable of meeting a lower standard would be commercially disadvantaged by the regulation.

Response: Sewage treatment plants (STPs) across Australia typically discharge ammonia-nitrogen in concentrations of between 2 and 10 milligrams per litre (mg/L). The EPA believes that a level of 2 mg/L in effluent can be achieved as an upper limit using presently available technology and this has been demonstrated at a number of sewage treatment plants throughout the State.

The 1992 publication "Australian Water Quality Guidelines for Fresh and Marine Waters", which has been endorsed by the two peak national Ministerial Councils concerned with water resources and environment protection, summarises the international literature on ammonia toxicity and specifies benchmark ammonia levels under a range of temperature and pH conditions. The ambient ammonia-nitrogen benchmark for the Picton region, if the average water temperature was 15 degrees Celsius, and pH was 7.0, which would be typical for the Blue Mountains, would be 1.8 mg/L.

Analysis of monitoring data from two large Water Board plants (Winmalee and West Camden) which discharge into waters which are unclassified shows that the ammonia-nitrogen concentration in effluent from these plants is less than 0.2mg/L 50 percent of the time, less than 0.3 mg/L 80 percent of the time and less than 2 mg/L 95 percent of the time. The national guidelines for in-stream ammonia concentrations here are able to be met without dilution most of the time.

The creation of algal blooms is more complex than a simple relationship with ammonia discharges and the EIS for any proposed scheme must canvass the potential effects of a range of pollutants under a range of conditions for all options, including the status quo. These matters will also be considered by the EPA when it sets approval and licensing conditions if the project passes the first (environmental impact assessment) test.

It has yet to be demonstrated to the EPA that any technology is available to meet the 0.5 mg/L limit specified in the previous regulation 100 percent of the time. Traditional biological treatment technology can reliably reach ammonia levels around 2 mg/L. Break point chlorination, another technology, can achieve 1 mg/L, however, it can generate additional environmental side-effects. The EPA is not aware of other practicable alternatives that achieve comparable environmental results.

Need for further consideration of alternative sewerage management options

The conservation groups expressed concern about the lack of consideration of alternative options, particularly small scale technologies which it was argued would be preferable and more cost-effective for small scale effluent treatment problems such the Picton situation. Mr Dean of the group Save the Hawkesbury Unique River Environment (SHURE) felt that the objectives of the regulation could have been achieved if the EPA instead required the Board to implement Least Cost Planning measures, for example, by upgrading existing septics, involving water reuse options, retention basins, etc.

> Response: Alternatives will need to be looked at as part of the environmental impact assessment process. The EPA aims to ensure that all methods of treating household wastewater for residential areas within the catchments of Class P waters are considered so that the preferred management system results in the last environmental impact, protects public health and can be afforded by the community. This includes full examination of all reuse and partial reuse options. The regulation change does not preclude full consideration of options, and would be needed irrespective of the nature of the nature of the scheme selected to deal effectively with sewage treatment in these urbanised areas.

Inconsistency of amendments to regulation with EPA legislation

The conservation group representatives expressed concern that the amendments to the regulation are not within the general objects of the legislation under which it is made, and if it is lawful, it is outside of the spirit of the legislation as it permits increased levels of pollutants into the rivers.

Mr Dean argued that the regulation change is premature, and should await development of an optimum solution as the Water Board Project Manager cannot provide assurances that the Picton plant will lead to improvements in local water quality. The regulation change creates a loophole with no trade off in improved water quality as a result of these lack of assurances.

> Response: The amendment do not change the EPA's need to consider the objectives of its enabling legislation in exercising its environment protection and pollution control functions.
>
> The amendments favour neither the traditional approach to sewerage provision in urban areas nor the use of viable alternative technologies. Without amendments, it would be illegal for the EPA to approve or licence a proponent to provide a sewerage scheme which operational authorities have argued, subject to detailed environmental impact studies, would improve the environment. The EPA does not consider either the status quo or simply

upgrading septics to be environmentally responsible courses of action for dealing with this urban sewage problem in the short term.

Other Issues:

Mr Dean has argued that a sewerage scheme at Picton will result in a trade-off of local water quality improvement with degradation of regional water quality.

Response: The EPA believes that the impact of discharges must be considered in the context of the whole catchment. This will be an important consideration for the environmental impact assessments."

FURTHER COMMENT BY SHURE

On 13th October 1994 the Committee received the following additional submission from Ms Jenny Rowe, President of SHURE. That submission states as follows:

"Dear Mr Cruickshank

re: The Clean Waters Regulations

Thank you for your letter of 21/9/94. The corrected transcripts were forwarded to your Committee by express post under a separate cover on 29/9/94.

Although Dr Macdonald's motion to disallow the Regulation has lapsed, we understand that the Committee is still interested in information pertaining to its review.

The Clean Waters Regulations are now amended specifically to allow provision of the type of sewage treatment technology preferred by the Sydney Water Board. This technology has failed to protect regional water quality in the Hawkesbury-Nepean.

The critical issues for SHURE are firstly, the principle that pollution regulation must be based on scientific criteria, and not on what is merely convenient for the sewage treatment operator; and secondly that the practical effects of the legislation, or any changes to it, must be to achieve protection of waterways and aquatic life by ensuring best international practice.

If you can, we would like you to ask the EPA the following questions:

- Why was existing information on background levels of ammonia not taken into account?

- Why was the ammonia level raised, if it indeed needed to be, on an absolute basis and not on a percentile basis?

- Why does the amendment differ from the ANZECC guidelines for protection of aquatic ecosystems? What scientific data, if any, was used?

- Why was the decision made to broadly exempt sewer overflows despite the lack of information provided on means to prevent them?

- Have the advantages of a more limited reticulation system, and/or higher levels of on-site treatment (as proposed in SHURE's submission to the 1993 Supplementary EIS) been assessed?

- Will the licensing of any permitted overflows be subject to the EIS process now that the Minister has announced the licensing of all sewer overflows? Will the overflows be licensed?

- Why does the amendment not meet the EPA's responsibilities under the Protection of the Environment Administration Act s.6(2)(a)(b)&(c); 7(2)(a)(b)&(c) and 9(1)(a)?

- What information does the EPA have about background water quality and effluent treatment options for the other places exempted by the amendment?

The question of inconsistency with other Acts is a matter for the Committee to consider under Schedule 1 of the Subordinate Legislation Act. The Act cited above is critical because it is the EPA's enabling legislation. The sections referred to are various objects, general responsibilities and requirements imposed upon the Authority by the legislation.

Some information on the matters such as ammonia levels and alternative technologies arising from the Committee hearing of September 15th is given in the attachment. In relation to Mr Rixon's question on background ammonia levels, data from the 1990 and 1993 EIS and from an AWT study indicate that mean ammonia levels are 0.05mg/litre for waterways in the Picton region, and lower for pristine waters. We have not been able to get some figures we would like from overseas sources, unfortunately our resources to do this are limited. We will forward this information as it becomes available. We feel it really should be the EPA's role to be informed as to international best practice, but as yet they do not do this.

We are also disturbed a the lack of consultation by the EPA on the change. The need for administrative decisions to be based on "adequate information and consultation" is also a matter listed under Schedule 1.

The Regulation now clearly permits discharge of excessive levels of ammonia. (see attachment) This pre-empts the necessary detailed environmental impact assessment process for Picton and the other places. We note that the stricter ammonia standard did not and would not prevent the preparation of an EIS. In fact the 23/3/94 EPA

submission to the 1993 Picton SEIS clearly put to the Board that they should address means of meeting the then existing Regulation. Concluding this submission, Mr Peter Yates also said:

> The foreshadowed changes to the Clean Waters Regulations indicated in the SEIS are somewhat pre-emptive and possibly restrict the range of schemes which may be considered for the Picton Sewage Scheme.

SHURE believes that the amendment should be rescinded as it is too broad, ill-timed, and will permit second-rate sewage treatment in protected waters. In fact, SHURE believe that, unfortunately, this is exactly what the amendment is designed to effect, from the Water Board's point of view.

The EIS process now should proceed to identify the range of alternatives, and undertake detailed assessment of a number of them. Then, if it is indeed required (ie to implement a scheme that will genuinely protect local and regional water quality, as the Board's proposals thus far have not) then a specific, focused and carefully drafted amendment may be made at the appropriate time. It would then receive SHURES's support.

SHURE is also concerned at the question of cost of the scheme to the local community, and that cost is being used as a justification for a poorer environmental outcome. We would like to bring to the Committee's attention the EPA's concerns, expressed by Mr Yates in the same document, that $20M of Special Environment Levy money which was committed to the Scheme, seems to have dropped from sight.

Thank you for the opportunity to put our views to the Committee. Please feel free to contact Mr Dean on 985 7719 should you wish any clarification or further input."

On receipt, a copy of this letter was provided to the EPA but a formal response had not been received at the date this report was finalised.

COMMITTEES CONSIDERATION

Section 4 of the Subordinate Legislation Act states that before a statutory rule is made, the responsible Minister is required to ensure that, as far as is reasonably practicable, the guidelines set out in Schedule 1 are complied with.

That Schedule is as follows:

1. Wherever costs and benefits are referred to in these guidelines, economic and social costs and benefits are to be taken into account and given due consideration.

2. Before a statutory rule is proposed to be made:
   a) The objectives sought to be achieved and the reasons for them must be clearly formulated.
   b) Those objectives are to be checked to ensure that they:
      . are reasonable and appropriate; and
      . accord with the objectives, principles, spirit and intent of the enabling Act; and
      . are not inconsistent with the objectives of other Acts, statutory rules and stated government policies.
   c) Alternative options for achieving those objectives (whether wholly or substantially), and the option of not proceeding with any action, must be considered.
   d) An evaluation must be made of the costs and benefits expected to arise from each such option as compared with the costs and benefits (direct and indirect, and tangible and intangible) expected to arise from proceeding with the statutory rule.
   e) If the statutory rule would impinge on or may affect the area of responsibility of another authority, consultation must take place with a view to ensuring in advance that (as far as is reasonably practicable in the circumstances):
      . any differences are reconciled; and
      . there will be no overlapping of or duplication of or conflict with Acts, statutory rules or stated government policies administered by the other authority.

3. In determining whether and how the objectives should be achieved, the responsible Minister is to have regard to the following principles:
   a) Administrative decisions should be based on adequate information and consultation concerning the need for and consequences of the proposed action.
   b) Implementation by means of a statutory rule should not normally be undertaken unless the anticipated benefits to the community from the proposed statutory rule outweigh the anticipated costs to the community, bearing in mind the impact of the proposal on the economy and on consumers, members of the public, relevant interest groups, and any sector of industry and commerce, that may be affected.
   c) The alternative option that involves the greatest net benefit or the least net cost to the community should normally be chosen from the range of alternative options available to achieve the objectives.

4. A statutory rule must be expressed plainly and unambiguously, and consistently with the language of the enabling Act.

- **Clear formulation of objectives**

Committees view: The Committee considers that the objectives expressed in the Schedule 1 assessment were satisfactorily formulated. The objective section of the assessment referred to the three substantive issues of removing the impediment to the provision of upgrading of sewerage infrastructure in Regulation 8, providing legally enforceable ammonia control for discharges and to allow for scientifically valid sampling methodology.

- **Objectives to be: (i) reasonable and appropriate; (ii) accord with spirit of principal act and (iii) not be inconsistent with other acts or government policies**

The legality of this amending regulation has been challenged by the Australian Conservation Foundation and this is the subject of a recommendation in this report. With regard to (iii) the Department was keen to point out in the Schedule 1 assessment that the proposed amendment will in no way override the environmental assessment process under the Environmental Planning and Assessment Act. It stated on page 4 of the assessment that this amendment does not necessarily mean that the provisions of the upgrading of such systems will go ahead. This was reiterated in the course of the hearing and in the subsequent submission by the EPA. The submission of SHURE dated 13 October 1994 questioned whether the amending regulation met the EPA's responsibilities under the Protection of the Environment Administration (s6 2(a),(b)&(c); s7 2(a),(b)&(c) & s9 (1)(a)).

- **Alternative Options Considered**

Alternative options were proposed for each of the substantive provisions of the regulation. The alternative options evaluated in respect of the first objective (upgrading of sewerage systems) were: to do nothing, to make a general exemption for overflows into protected waters; to reclassify waters near overflows and to provide specific exemption for overflows into protected waters for identified communities only.

Committees view: Under section 10 of the Subordinate Legislation Act the Clean Waters Regulation 1972 which was gazetted on 3.11.72 was due for repeal on 1.9.94. That repeal was postponed under section 11 of the act by an instrument published in the Government Gazette of 20.5.94. Given that the present regulation involves a major reconsideration of the substantive provisions of the Clean Waters Regulation a relevant option would have been to review the whole regulation and prepare a Regulatory Impact Statement under Schedule 2 of the Act which would assess the regulation in full. This option was not examined by the Environmental Protection Authority and this was a major failing. The cost effectiveness of the Clean Waters Regulation 1972, as a whole, has been called into question in the past. This is referred to later in this Report.

- **Evaluation of Costs and Benefits of Options**

The costs and benefits of the options were unquantified, despite the fact that the assessment states that each preferred option meets the objective at the least environmental and economic cost. Only option 2, the preferred option with respect to the ammonia control objective contains quantified costs of installation of chlorination but does not address the costs to the community. Objective 3 only involved the consideration of two alternative options, the do nothing option and making the regulation as drafted. None of the costs and benefits were quantified. The detailed assessment has generally been left to the environmental impact statements for individual projects. The conclusions reached in the Schedule 1 assessment were as follows:

Provision and Upgrading of Sewerage Systems

The proposed amendment relating to overflows is recommended by the Authority as it will facilitate the provision or upgrading of sewerage systems in the Picton, Thirlmere, Tahmoor, Moss Vale, Mittagong, Bulahdelah, Karruah, Tanilba Bay, Mallabula and Lemon Tree Passage areas where it can be demonstrated that this will improve water quality. The provision or upgrading of specific sewerage systems in these areas will still be subject to assessment under the Environmental Planning and Assessment Act 1979 and will only be permitted subject to the pollution control approval and licensing requirements of the EPA.

The Schedule 1 assessment concludes that the amendment will allow the provision or upgrading of sewerage infrastructure with the least environmental risk. It will allow the provision or upgrading of sewerage infrastructure leading to water quality improvements without allowing urban expansion near Protected waters or changing the other standards protecting the waters in question.

Ammonia Control

The proposed amendment relating to ammonia sets a limit on nitrogen (ammonia) discharges to protected waters from sewerage treatment plants that will produce the best environmental outcome, given the technology currently available. The amendment will not preclude the setting of more stringent limits in licence conditions where warranted or as new technology becomes available.

Sampling Methodology

The Schedule 1 assessment finds the proposed amendment will enable the EPA to specify, by way of licence condition or otherwise, the sampling procedures or methods and/or the methods of statistical analysis which are to be used to determine whether the nature or concentration of wastes set out in Regulation 8 has been complied with.

Committees view: The Committee is of the view that the assessment would have benefited from a quantification of the costs of the regulation, particularly as the Schedule 1 assessment of each of the substantive provisions of the regulation and its alternatives concludes with a statement that the preferred option meets the objective at the least environmental and economic cost. Clearly it would have been possible to quantify the economic costs if not necessarily the environmental costs.

- **Resolution of Conflict with Other Departments**

The representatives of SHURE have raised a possible conflict between the regulation and the national water quality guidelines for protection for aquatic ecosystems issued by ANZECC. This issue needs attention.

- **Adequate Consultation**

Committees view: In the course of evidence the Legal Officer for the EPA said that there was no legal requirement for the EPA to undertake a formal consultation process with the public and that one was not carried out. However Schedule 1 places an obligation on the Minister to ensure that a statutory rule is not implemented unless the anticipated benefits to the community outweigh the costs bearing in mind its impact on the economy, consumers, members of the public, relevant interest groups and any sector of industry and commerce that may be affected. The Committee is of the opinion that the obligation to adequately take into account the impact of the regulation on groups and members of the public was not satisfied by the EPA.

The piecemeal nature of the consultation that preceded the regulation is clear from the evidence of the Legal Officer of the EPA:

Committee Member: ...What steps did the Minister take to determine what impact would arise for these groups? Did adequate consultation take place?

Ms Campbell: The environmental groups were aware of this Regulation. They were not aware of the precise details of it, but they were aware that this Regulation was being made and there was correspondence that I have got on file between us and some of the peak environmental groups about this Regulation.

Committee Member: Was there any advertising?

Ms Campbell: No.

Committee Member: There was no formal consultation process put in place?

Ms Campbell: There wasn't a formal process, that's true.

Committees View: It would seem to the Committee that in view of the importance of the changes made by this regulation to the public that it should have been preceded by detailed documentation for public examination and discussion. It is obvious from the many issues raised in evidence before the Committee by public interest groups that the consultation undertaken by the EPA on this regulatory proposal was inadequate.

- **Costs of statutory rule outweighed by benefits; alternative option involving least net cost or greatest net benefit to be chosen**

Committees view: As indicated above there were no quantified costs on which to base the required assessment. The most relevant option of redrafting the whole of the Clean Waters Regulation 1972 as required under the staged repeal programme was not considered.

- **Plain language drafting**

The regulation satisfies this requirement.

CONCLUSIONS AND RECOMMENDATIONS OF COMMITTEE

The Committee is of the opinion that section 4 and Schedule 1 of the Subordinate Legislation Act requires the impact of the regulation to be adequately assessed and that this obligation is separate from any other legal requirement of the Environmental Planning and Assessment Act. Assessments made under the provisions of the Subordinate Legislation Act enable Parliament to determine whether the regulation should remain on foot; environmental impact statements attract no parliamentary review. Environmental Impact Statements produced under the Environmental Planning and Assessment Act 1979 are not required to be tabled in Parliament and are not subject to Parliament's power to disallow or review.

The practical function of this regulation is to put in place a scheme in which certain otherwise prohibited sewerage projects in specifically named areas of the state can go forward for examination under the EP&A Act. It is therefore not appropriate for the Authority to argue that it is only obliged to conduct a full assessment of options as part of the environmental assessment process. Far from this being merely an enabling regulation, as the EPA argues, the regulation clearly contemplates that specific projects can legally be put in place in the areas it mentions providing that they satisfy the requirements of the EP&A Act. The assessment itself states that the regulation "will facilitate the provision or upgrading of sewerage systems in the Picton, Thirlmere, Tahmoor, Moss Vale, Mittagong, Bulahdelah, Karruah, Tanilba Bay, Mallabula and Lemon Tree Passage areas where it can be demonstrated that this will improve water quality."

Under this regulation the Authority will be able to authorise, without further Parliamentary scrutiny the discharge of certain overflows into protected waters (something previously totally prohibited) providing the Authority considers the following matters:

(a) the amount and frequency of the discharge concerned;
(b) the practical measures that may be taken to prevent or reduce the discharge;
(c) the likely impact of the discharge on the protected waters;
(d) the impact on the environment of the approval or of not approving the discharge or conditions.

In essence the concerned public interest groups are asking for this major shift in the law to be justified at the outset and by the only formal means involving parliamentary oversight.

The EPA's approach has been to argue that detailed appraisal of the merits of alternatives to the regulation will be carried out by means of environmental impact statements on individual sewerage projects and that it will need to be demonstrated that the expected improvements in water quality outweigh any possible impacts due to overflow events. While it is appropriate that the individual impact of each project be assessed under the Environmental Planning and Assessment Act, it is equally the case that a satisfactory assessment must be carried out under the Subordinate Legislation Act of the costs and benefits of the regulatory proposal and its options. The need to adequately meet this obligation is accentuated in the case of a regulatory proposal of such obvious importance as the present one - a proposal enabling the Environment Protection Authority to approve an activity currently totally prohibited, that is, the discharge of overflows into protected waters from outlets in a sewerage system servicing 10 urban areas.

The view of the EPA is not dissimilar to views expressed by the Director of the Department of Conservation and Land Management which was set out in the Committee's Report No.20 on the Hawkesbury-Nepean Catchment Management Trust Regulation 1993. In that report the Committee said that the assessment required under the Subordinate Legislation Act with respect to regulations was independent of any assessment required under the planning legislation. In that case a requirement for a regulatory impact statement on the regulation was viewed by the Department as being subordinate to the proposed review of the relevant regional environmental plan. The Committee considered it inappropriate that the proper assessment of the trust area should be left to the review of this regional plan. In that case the Minister undertook to carry out a further regulatory impact statement.

The history of the classification of waters is set out in The Environmental Law Handbook, Planning and Land Use in New South Wales by David Farrier, Professor of Law, University of Wollongong. He states: "When the Clean Waters Act was first enacted, the intention was to "classify" the waters of New South Wales into a number

of categories (for example, "specially protected waters", "controlled waters") based on the uses to which they were to be put (Clean Waters Regulation cl.8). The classifications were designed to determine the types and concentrations of pollutants which could be discharged. Although some were framed in terms of discharge standards, other were defined in terms of the effect which they would have on the receiving waters. The aim was to move some way towards setting ambient water standards which dischargers would be required to comply with under their licence and approval conditions. Proposed classifications were to be advertised and any objections referred to the Land and Environment Court, which was to make the final decision (CWA ss. 11-14). In practice, this process has proved too time-consuming and a drain on limited resources. The formal procedure for classifying waters has been largely abandoned, although conditions attached to licences still take into account the state of particular waters and downstream uses."

The Committee considers rather than making piecemeal amendments, the principal statutory rule should have undergone a complete review to determine whether it was cost effective.

This Report recognises various inadequacies in the Schedule 1 assessment conducted by the Environmental Protection Authority. The Committee recognises, however, that the Schedule 1 assessment was intended by the legislature as an internal Departmental appraisal of regulatory proposals and did not have the objective of comprehensively addressing the detailed concerns that have arisen in the course of the Committee's inquiry. The Committee's principal aim in this matter is to ensure that the justified issues raised by concerned public interest groups are properly examined under appropriate procedures. It believes that this can best be accomplished through the appraisal required under Schedule 2 of the Subordinate Legislation Act. In the present case that full appraisal, which involves a detailed written regulatory impact statement accompanied by formal public consultation, was intended to have taken place in regard to the whole Clean Waters Regulation not later than 1 September 1994 in accordance with the staged repeal or sunset provisions of the Subordinate Legislation Act. However as mentioned in this report, that full review was postponed for 1 year by the Governor on the recommendation of the Minister. That review will again become due on 1 September 1995 unless it is further postponed. The Committee is of the opinion that the review should not be again postponed and that it should be advanced so that it is completed by 1 March 1995 in accordance with the Committees recommendations.

Opposing views were put to the Committee concerning the legality of the Clean Waters Regulation. The Australian Conservation Foundation in its submission said there was no power under the Clean Waters Act to make the regulation and that it was invalid. The Minister, in reply, relies on the certificate of the Parliamentary Counsel that contains the opinion that the regulation can legally be made.

The Minister has provided a copy of further advice from the Parliamentary Counsel's Office as follows:

"I refer to previous discussions about this matter and confirm that it is the view of this Office that the Regulation is within power.

The scheme established under the Clean Waters Act 1970 for the classification of waters is a complex one. Section 11 of the Act provides for the making of regulations to prescribe classifications of classified waters and requires the regulations to specify standards applicable to classifications. The standards are in effect the attributes which characterise the classified waters. Section 11 (1) provides for the classification by the Authority, by notice published in the Gazette, of specified waters as classified waters by reference to the prescribed classifications. It is by virtue of the powers contained in section 11 that Regulation 8 of the Clean Waters Regulations 1972 has been made and is being amended by the amending regulation.

The effect of the classification of specified waters and the application of standards to classes of water is not completely contained in the Act. Section 17 of the Act makes it an offence to discharge pollutants from drains into classified waters without a licence. Drains include sewers. Under section 16 of the Act it is generally an offence to cause or permit any waters (including classified waters) to be polluted, except where any such pollution does not contravene the conditions of a licence issued under the Pollution Control Act 1970. A discharge from a sewer is likely, unless licensed, to be a contravention of section 16. However, apart from licence conditions, there is no mechanism for requiring that discharges from drains actually meet the relevant standards in relation to classified waters.

Section 36 (1) (k) of the Act enables regulations to be made to exempt persons, classes of persons, premises (including places) or classes of premises from any specified provision or provisions of the Act. The exemption may be confined to particular circumstances and be subject to any conditions as specified by the regulations. Regulation 10 exempts certain overflows from specified sewerage systems from the operation of section 11 (3) in its application to a particular standard for classified waters. Section 11 (3) is a provision of the Act. It requires standards to be made for classified waters and applies them to classified waters. The exemption contained in Regulation 10 is a conditional one applying to particular places. Its effect is to remove the requirement for the mandatory standard concerned in respect of the places and circumstances set out. Regulation 10 is not inconsistent with the Act because the Act authorises the regulations to provide for the exemption.

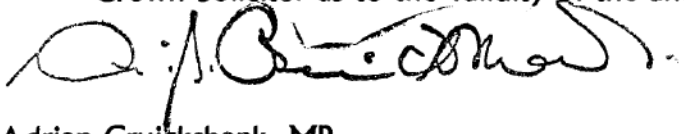
I would be happy to discuss this matter with you if required."

It would be open for the Minister to further clarify this issue by seeking the views of the Crown Solicitor. The Committee recommends that this course be followed.

Recommendations

1. The Committee recommends that the Minister carry out by 1 March 1995 an assessment of the Clean Waters Regulations 1972, that is, of the principal statutory rule, in accordance with the requirements of Schedule 2 of the Subordinate Legislation Act. That will involve a full assessment of the whole regulation as amended together with public consultation upon it. That full assessment would in any event have been required at the expiration of the current postponement of the staged repeal of this regulation. The Committee's recommendation has the effect of advancing the time for that assessment.

2. The Committee also recommends that the Minister seek the advice of the Crown Solicitor as to the validity of the amending regulation.



Adrian Cruickshank, MP
Chairman
Regulation Review Committee

APPENDIX 1

REGULATION REVIEW COMMITTEE

REPORT IN RELATION TO THE COMMITTEE'S INQUIRY INTO THE CLEAN WATERS ACT 1970 REGULATION (RELATING TO STANDARDS FOR WATERS AND TESTING PROCEDURES) WHICH WAS PUBLISHED IN THE GOVERNMENT GAZETTE OF 31ST MARCH 1994 AT PAGE 1431 AND AS TO THE COMPLIANCE WITH THE REQUIREMENTS OF THE SUBORDINATE LEGISLATION ACT 1989 IN THE MAKING OF THAT REGULATION

ASSESSMENT CONDUCTED BY THE ENVIRONMENT PROTECTION AUTHORITY OF PROPOSED AMENDMENTS TO THE CLEAN WATERS REGULATIONS 1972

SCHEDULE 1 REQUIREMENTS OF THE SUBORDINATE LEGISLATION ACT 1989

Objectives

The objectives of the proposed amendments are:

- to remove the impediment created by Regulation 8 of the Clean Waters Regulation 1972 to the provision or upgrading of sewerage infrastructure in a number of specified existing residential communities where it can be demonstrated by the proponent that this will improve water quality;
- to provide for practical, technically achievable, and legally enforceable ammonia control for discharges into Protected waters; and
- to allow for scientifically valid sampling methodology to be used in determining the nature or concentration of matter in wastes being discharged to classified waters or in the classified waters themselves.

Background

Provision and upgrading of sewerage systems

The Sydney Water Board, the Hunter Water Corporation and the Public Works Department have argued that provision of new or upgraded sewerage infrastructure for a number of existing residential communities in the State is being prevented by the requirements of the Clean Waters Regulations even though the provision or upgrading of such facilities is likely to result in improved water quality. The communities considered to be directly affected are Picton, Thirlmere, Tahmoor, Moss Vale,

Mittagong, Bulahdelah, Karuah, Tanilba Bay Mallabula and Lemon Tree Passage.

Water quality problems have arisen in these areas as a result of pollution caused by runoff from septic tanks and outdated or overloaded sewage systems. Without the provision of new or upgraded sewerage systems, waterways in the communities identified will continue to be degraded.

Septic systems are considered to be inferior to reticulated sewerage systems because they result in drainage nuisance, potential health risks during wet weather and ongoing pumpout costs. Many of these problems can be attributed to the lack of control over maintenance and the inherent deterioration of these systems over time.

Effluent disposal from septic tanks is by means of pump-out or adsorption trenches. The use of pump-outs can be expensive and generates potential problems due to overflow and illegal syphoning of tanks. The use of adsorption trenches in areas where the predominant soil type is clay results in unusable backyard areas due to dampness, increasing seepage to streets watercourses and onto downslope properties. This leads to public health concerns such as increasing **faecal coliform levels in waters used for recreational purposes.** Where soil type is predominantly sand or a high water table is present then the use of adsorption trenches may result in contamination of groundwater.

The cost of degradation of waterways is borne by the community through the water becoming unsuitable for use as a potable water source, for shellfish, production, recreational use and agricultural use. Water quality will degrade due to increases in oxygen depleting substances and nutrients in the water. An increase in the level of oxygen depleting substances will decrease the level of dissolved oxygen and can result in harm to aquatic biota and occasionally lead to fish kills and offensive odours. Increased nutrient levels in waters lead to an excessive growth of aquatic plants including algae and may include harmful blue-green algae. An increase in algae concentration in water may render it unsuitable for use by the community for beneficial activities such as potable water supply, agricultural activities or recreational use.

Environmental benefits, in terms of both a reduction in faecal coliforms, nitrogen and phosphorus levels in local creeks, and improvement in the amenity of these areas resulting from a reduction in odours and septic system overflow are expected with the provision or upgrading of sewerage systems. In the case of the Tilligerry scheme Serving the towns of Tanilba Bay, Mallabula and Lemon Tree Passage the benefits also include the protection of groundwater reserves.

The provision or upgrading of sewerage systems in the specific communities identified is currently impeded by Regulation 8 of the Clean Waters Regulations which provides that Protected waters are waters into which overflows from sewers, waste pumping stations, treatment works or other parts of a sewerage system are not to be discharged".

Operational authorities have argued that n is not technically possible to design sewerage systems that are guaranteed not to overflow. That is, modern sewerage systems are designed to **include** structures that allow sewage to overflow to the environment under emergency conditions to prevent sewage overflows inside houses or on land. The situations during Which an overflow could occur include uncontrollable events such as blockages, electrical failure and uncontrolled influent to the system.

Provided that the provision of sewerage systems (including overflows) will improve water quality, the EPA has indicated that it would be prepared, if legally possible and only after undergoing the full environmental assessment process in accordance with the planning legislation, to approve and license reticulation/overflow systems in proximity to Protected waters. Stringent conditions attached to such approvals and licences will ensure that appropriate design features are incorporated to minimise the risk of overflows and that the system is operated in an appropriate fashion.

Ammonia control

Ammonia can have acute effects on fish species, in extreme cases resulting in fish kills. At lower concentrations, ammonia has many other effects including a reduction in hatching success, reduction in growth rate and morphological development, and pathological changes in tissues of gills, livers and kidneys. Acute and chronic toxicity increases as pH decreases and acute toxicity increases as temperature decreases. Invertebrates are generally more tolerant than fish.

Regulation 8 provides that Protected waters are waters into which "wastes are not to be discharged if the concentration of any restricted substance in the waste exceeds the concentration specified opposite that substance in Schedule 2". Nitrogen (ammonia) is one of the restricted substances set out in Schedule 2. The concentration specified for the purposes of Regulation 8 is 0.5 mg/L.

Sewage treatment technology has never been able to produce an effluent able to comply with this limit. As a result there are a number of sewerage treatment plants unable to achieve this limit. These plants are discharging effluent with ammonia concentrations of 2 mg/L. Although there is a method available to reduce the concentration to 1 mg/L, the environmental damage that may be caused by the by products outweigh the minimal environmental benefit associated with the reduction in ammonia concentration. The costs and benefits of enforcing various limits which are achievable will be discussed in the options section of this paper.

Sampling methodology

It is accepted that it may be difficult for licence holders using best management practices to comply with the limits set out in Regulation 8 all of the time. Biological systems are inherently variable due to extraneous factors such as rapid temperature changes. As a result, the distribution of discharge concentrations may have some outliers which exceed the prescribed limits. This exposes some operators to the risk of prosecution as a result of normal daily operations.

The Regulations do not specify a method by which samples are to be collected, nor do they specify how, in statistical terms, compliance with the Regulation limits is to be demonstrated. Without a legal framework for specifying methods of statistical analysis to determine compliance there will continue to be a question of whether licence holders using best management practices are complying with the limits set in the Regulations.

Proposed Amendments

Provision and upgrading of sewerage systems

The proposed amendment will allow the discharge into Protected waters of overflows from sewers, waste pumping stations, treatment works or other parts of a sewerage system servicing existing residential areas in Picton, Thirlmere, Tahmoor, Moss Vale, Mittagong, Bulahdelah, Karuah, Tanilba Bay, Mallabula and Lemon Tree Passage provided that the discharge is in accordance with conditions stipulated by the EPA. That is, the amendment will allow for the possibility of the EPA approving and licensing proposed new or upgraded sewerage facilities in these areas.

It is emphasised that the proposed amendment will also in no way override the environmental assessment process which must be followed in relation to sewerage systems pursuant to the provisions of the Environmental Planning and Assessment Act 1979. That is, the amendment does not necessarily mean that the provision or upgrading of such systems will go ahead. These decisions will only be made after the required environmental assessment process has been completed. Further, given that the amendment will be limited to specified existing residential areas, it will not facilitate urban expansion into environmentally sensitive areas.

Furthermore, if a scheme passes the environmental assessment test, it will then be subject to stringent approval and licensing conditions imposed by the EPA.

Ammonia control

An amendment is proposed to increase the concentration limit in relation to nitrogen (ammonia) from 0.5 mg/L to 2 mg/LI thus enabling practical, technically achievable, and legally enforceable ammonia control for sewage treatment plants discharging into Protected waters. Although it is primarily aimed at sewerage treatment plants the amendment will apply to all discharges to Protected waters Statewide.

The proposed increase in the limit will not automatically permit plants to discharge that concentration of nitrogen (ammonia) to Protected waters. The proposed limit will not preclude the EPA from setting a more stringent limit where it is warranted or as new technology is developed.

Sampling methodology

The proposed amendment will enable the EPA to specify by way of licence condition or otherwise, the sampling procedures or methods and/or the methods of statistical analysis which are to be used to determine whether the nature concentration of wastes set out in Regulation 8 has been complied with. The amendment is to apply Statewide.

The amendment will allow the most appropriate combination of statistical and absolute limits to be imposed as legally enforceable conditions. It will provide for the control of effluent discharges in a practical manner.

Analysis of Options

Provision and upgrading of sewerage systems

The options available include:

Option 1 Do nothing

The do nothing option would maintain the current legal impediment to the construction of new or upgraded sewerage systems for the communities identified. Septic tanks and inferior (outdated or overloaded) sewage treatment plants would continue to be used for treatment and disposal of sewage.

Option 2 General exemption for overflows into Protected waters

Under this option, the regulation would permit discharges from overflows into Protected waters in any area provided they occur in accordance with conditions stipulated by the EPA. In essence, this would mean that overflows from sewerage systems would be dealt with in the same manner as they are dealt with in relation to Controlled waters or Restricted waters.

Option 3 Reclassification of waters near overflows

Under this option, waters in the vicinity of overflows from sewerage systems may be reclassified to a lower classification (namely Class C or R) under Section 11(1) of the Clean Waters Act.

Option 4 Specific exemption for overflows into Protected waters for identified communities only (Preferred Option)

The preferred option will allow overflows into Protected waters, subject to approved conditions from sewers, waste pumping stations, treatment works or other parts of a sewerage system servicing residential areas in Picton, Thirlmere, Tahmoor, Moss Vale, Mittagong, Bulahdelah, Karuah, Tanilba Bay, Mallabula or Lemon Tree Passage where appropriate.

Benefits

Options 2, 3, and 4 all allow the provision or upgrading of sewerage systems for the specified residential areas in the vicinity of Protected waters to proceed, subject to appropriate environmental assessment and approval and licence requirements imposed by the EPA. The improvements expected for these areas include environmental benefits, in terms of a reduction in faecal coliforms, nitrogen and phosphorus levels in local creeks, and improvement in the amenity of the areas resulting from a reduction in odours and septic system overflow.

The Environmental Impact Statement for each of these developments will need to show that the expected improvements in water qualify outweigh any possible impacts due to overflow events.

Costs

The costs of options 2, 3, and 4 consist of the risk if discharges of raw sewage into Protected waters during overflow events.

The preferred option will allow the ultimate objective of removing septic systems to be achieved and provides for the least environmental risk. It will allow for the provision or upgrading of sewerage infrastructure leading to water quality improvements without allowing urban expansion or reducing other types of protection afforded to the waters in question.

The cost of option 2 relative to the preferred option is that it would not prevent the degradation of environmentally sensitive areas as a result of urban expansion in the vicinity of Protected waters. This degradation may have negative impacts on public health, natural ecosystems that depend on the waterway, the productivity of activities depending on the waters, and recreational opportunities.

There are various costs associated with option 3 in comparison to the preferred option. A reclassification to a classification lower than Class P would mean that the level of protection afforded to the waters in question would be reduced, possibly leading to environmental degradation. The rest of **the standards set out** in Regulation B applying in respect of Class P waters would no longer apply to the reclassified waters. Degradation of water quality may reduce possible uses of the waterways, cause damage to natural ecosystems, reduce the, productivity of activities that depend on the waters and impact upon public health. In addition, there would be administrative costs and delays involved in reclassifying waters on a case by case basis.

The preferred option meets the objective of allowing for the provision or upgrading od sewerage system based on environmental assessment for the specified residential areas at the least environmental and economic cost.

Ammonia control

The options available include:

Option 1 Do nothing

Under the do nothing option, the limit for nitrogen (ammonia) discharged to Protected waters would remain at 0.5 mg/L. This prevents the EPA from regulating ammonia discharges from sewerage treatment plants in a practical and enforceable manner. That is, the current limit is unachievable using existing technology.

Option 2 Increase ammonia limit to 1 mg/L for Protected waters

Under this option, the concentration limit for discharges of nitrogen (ammonia) to Protected waters would be increased from 0.5 mg/L to 1 mg/L. The 1 mg/L limit can only be achieved by sewerage treatment plants using breakpoint chlorination supplementary to biological ammonia removal.

Option 3 Increase ammonia limit to 2 mg/L for Protected waters (Preferred Option)

Under the preferred option, the concentration limit for discharges of nitrogen (ammonia) to Protected waters will be increased from 0.5 mg/L to 2 mg/L. The 2 mg/L limit can be achieved by sewerage treatment plants using biological removal of ammonia only. This option would still leave open the possibility of licence conditions requiring 1 mg/L or a lower limit in particular cases where warranted.

Option 3 will not provide any net environmental benefits compared to the do nothing option as the concentration level of 2 mg/L is all that is currently being achieved. Similarly Option 3 has no associated costs. The advantage of Option 3 over Option 1 is that it allows for the practically enforceable regulation of ammonia discharges which recognise existing technology.

Option 2 requires the use of breakpoint chlorination and would impose significant costs on sewage treatment plants. The benefits and costs expected with the use of breakpoint chlorination are discussed below.

Benefits of Option 2

The adverse affects of ammonia on fish and invertebrates would be reduced to some extent if ammonia levels were at 1 mg/L rather than 2 mg/L.

The impacts of ammonia discharges in receiving waters are highly variable depending on factors such as the effluent volume discharged, the dilution offered by the receiving waters, and the temperature, pH and salinity of the receiving waters.

According to the ANZECC Australian Water Quality Guidelines for Fresh and Marine Waters, recommended instream total ammonia concentrations vary from 2.5 mg/L for pH 6.5 at 0 degrees celsius to 0.08 mg/L for pH 9.0 at 30 degrees celsius. The instream concentration refers to the recommended level after the effluent has been introduced to the receiving waters and has been diluted.

For typical receiving waters in NSW, the range of acceptable ammonia concentration would be 0.2 to 2.0 mg/L. An effluent concentration of 2.0 mg/L would only need to be diluted by a factor of 10 in the receiving waters to achieve the low end of this range. As the average that will be discharged will actually be lower than 2 mg/L, the dilution necessary to reach in-stream goals will, on average, be less than I O.

Under most discharge circumstances, only a minimal decrease in toxic effects would be expected as a result of reducing effluent ammonia concentrations from 2 to 1 mg/L. As indicated above, the preferred option leaves open the opportunity for the EPA to impose lower ammonia concentration levels where appropriate.

Costs of Option 2

Breakpoint chlorination removes ammonia from the wastewater stream by using chlorine to oxidise ammonia to nitrogen gas. The amount of chlorine necessary to remove ammonia in a reasonable time using breakpoint chlorination is high, with a mass ratio of chlorine to ammonia of I O to I commonly required. It is then necessary to dechlorinate the wastewater after breakpoint chlorination to reduce effluent chlorine to a level that is not toxic to aquatic animals.

There is a potential for the formation of chlorinated organic by-products at the chlorination stage. Dechlorination is carried out with either sulphur dioxide or sodium bisulphate. The resulting increase in dissolved solids in the wastewater generates an increase in effluent salinity. The adverse environmental effects of the chlorinated by-products far outweigh the benefits of reducing effluent ammonia concentration from 2 to 1 mg/L.

In general, the consensus is that the environmental benefit of enforcing an effluent ammonia limit of 1 mg/L rather than 2 mg/L is far less than the environmental damage that may be caused by the by products of breakpoint chlorination.

The capital costs of installing breakpoint chlorination to achieve the 1mg/L limit are estimated to range between $200,000 for a 2,000 person plant to $1.5 million for a 30,000 person plant. The chemical costs are estimated at approximately $20 per person per year, that is, $40,000 per year for a 2,000 person plant and $600,000 per year for a 30,000 person plant.

The preferred option achieves the objective of ensuring practical and legally enforceable control for the least environmental and economic cost.

Sampling methodology

The options considered are:

Option 1 Do nothing

Under the do nothing option, the Regulation will remain as it is, with no reference to the sampling or statistical methods to be followed for testing compliance with the limits set in Regulation 8.

Option 2 enable the EPA to specify, by licence condition Of otherwise, the methods of sampling and/or statistical analysis (Preferred Option)

The proposed amendment will provide the legal framework for the EPA to specify, by way of licence condition or otherwise, the sampling procedures or methods and/or the methods of statistical analysis which are to be used to determine whether the nature or concentration of wastes set out in Regulation 8 has been complied with. This will allow the most appropriate combination of statistical and absolute limits to be imposed as legally enforceable conditions.

Under the do nothing option some licence holders using best practices cannot prevent their discharges exceeding the concentration limits set out in Regulation 8. The difficulty is that the EPA cannot legally impose conditions which conflict with Regulation 8.

The benefit of the preferred option is that it will enable the EPA to enforce realistic conditions that reflect the best environmental performance that can be achieved with the use of appropriate management practices.

There are no costs involved with the preferred option. The amendment will not result in a relaxation of standards applying to protect waters. The amendment simply recognises that in certain circumstances best practices cannot ensure that the limits set out in Regulation 8 are not exceeded.

The preferred option meets the objective of allowing for scientifically valid sampling methodology to be used to determine compliance with Regulation 8 at the least environmental and economic cost.

Conclusions

Provision and upgrading of sewerage systems

The proposed amendment relating to overflows is recommended as it will facilitate the provision or upgrading of sewerage systems in the Picton, Thirlmere, Tahmoor, Moss Vale, Mittagong, Bulahdelah, Karuah, Tanilba Bay, Mallabula and Lemon Tree Passage areas where it can be demonstrated that this will improve water quality. The provision or upgrading of specific sewerage systems in these areas will still be subject to assessment under the Environmental Planning and Assessment Act 1979 and will only be permitted subject to the pollution control approval and licensing requirements of the EPA.

The amendment will allow the provision or upgrading of sewerage infrastructure with the least environmental risk. It will allow the provision or upgrading of sewerage infrastructure leading to water quality improvements without allowing urban expansion near Protected waters or changing the other standards protecting the waters in question.

Ammonia control

The proposed amendment relating to ammonia sets a limit on nitrogen (ammonia) discharges to Protected waters from sewerage treatment plants that will produce the best environmental outcome, given the technology currently available. The amendment will not preclude the setting of more stringent limits in licence conditions where warranted or as new technology becomes available.

Sampling methodology

The proposed amendment will enable the EPA to specify, by way of licence condition or otherwise, the sampling procedures or methods and/or the methods of statistical analysis which are to be used to determine whether the nature or concentration of wastes set out in Regulation 8 has been complied with.

APPENDIX 2

REGULATION REVIEW COMMITTEE

Parliament of New South Wales

REPORT IN RELATION TO THE COMMITTEE'S INQUIRY INTO THE CLEAN WATERS ACT 1970 REGULATION (RELATING TO STANDARDS FOR WATERS AND TESTING PROCEDURES) WHICH WAS PUBLISHED IN THE GOVERNMENT GAZETTE OF 31ST MARCH 1994 AT PAGE 1431 AND AS TO THE COMPLIANCE WITH THE REQUIREMENTS OF THE SUBORDINATE LEGISLATION ACT 1989 IN THE MAKING OF THAT REGULATION

MINUTES OF EVIDENCE

TAKEN BEFORE

THE REGULATION REVIEW COMMITTEE

At Sydney on Thursday, 15th September, 1994

The Committee met at 10.30 a.m.

PRESENT

Mr A. Cruickshank (Chairman)

Legislative Council	Legislative Assembly
The Hon. S. Mutch	Dr E. Kernohan
The Hon. P. O'Grady	Mr K. Yeadon
	Mr C. Knowles
	Mr M. Iemma
	Mr W.B. Rixon
	Mr J. Kinross

DONNA ELIZABETH CAMPBELL, Director of Legal Services, Environment Protection Authority, of 34 Nobbs Street, Surry Hills, affirmed and examined:

CHAIRMAN: Did you receive a summons issued under my hand in accordance with the provisions of the Parliamentary Evidence Act 1901?

Ms CAMPBELL: Yes I did.

CHAIRMAN: Is it your wish that the Minister's letter of 10 August 1994 be included as part of your sworn evidence?

Ms CAMPBELL: Yes it is.

CHAIRMAN: Do you wish to add or elaborate upon the Minister's response to the Committee?

Ms CAMPBELL: I thought I just might take this opportunity just to give people a bit of a background on what the Regulation is all about. It should only take about five minutes. I thought I would explain exactly what the Clean Waters Regulations do. They have a classification system for bodies of water in New South Wales. Not all waters are classified, but some of them, particularly around the metropolitan area, have been classified and there are six classes in that classification, starting with Class S which is the most pristine. That is for specially protected waters and in the case of Class S no waste at all must be discharged. The next category down is Class P waters and they are called protected waters and this regulation relates to those protected waters. The standards that apply in relation to these Class P waters were set in the 1970s when these regulations were made and are based on British Drinking Water Standards. These Standards allow for waste to be discharged into Class P waters but they regulate the sort of waste that can go into the waters and the restrict the concentration of such things that can be discharged. The sort of things they regulate are things like pesticides, lead and ammonia. The Standard expressly authorises discharges by sewer but prohibits overflows from sewers. That is basically the classification system.

I then want to move on to what the problems that the Regulation is trying to address. Historically the focus of our Clean Waters Regulation has been on point source pollution. That is the pollution that comes out of the end of the pipe. Traditionally we have regulated the discharge; the actual pipe that goes into the water from sewage treatment plants and factories and so on but there is an increasing recognition that the problem isn't just point source there is also the diffuse source pollution. And one of the major causes of diffuse source pollution is septic tanks. What happens is that when it is very wet the system does not work properly, it seeps out into the ground water and you actually

find that it actually finds its way into the protected waters. I think there is general agreement that the septic systems don't work very well. They deteriorate over time, they are not maintained properly and sometimes there is illegal siphoning because people have to pay for pump-out and it is quite a temptation for people actually to dispose of it illegally and it all finds its way into the protected water. So I think there is general agreement, even amongst the environmental groups, that something needs to be done about the septic system; that it is degrading our waterways.

The solution to the problem is to either build new sewage treatment facilities or to upgrade the existing facilities. The problem we have is that we just can't do it with the Regulations in their current form. First of all they prohibit sewer overflows and there is no sewage system that can be built without a sewer overflow. That is not to say the systems are designed to overflow, they are certainly not designed to overflow, but in periods of severe - for example, if there is a lot of rain and there is a freak storm and so on, a lot of water can go down the system and if there is not an overflow what happens is that that backs into peoples houses and there are public health risks associated with that. That is why all sewage systems have sewer overflows.

The current Regulations absolutely prohibit sewer overflows. So that is the first problem that the Regulation seeks to address. In enables the EPA to approve a system that has gone through the whole environmental assessment procedure; if it passes all those tests we can actually approve the building of sewer overflows but subject to stringent conditions. So sewer overflows is the first thing that the Regulation addresses.

The second relates to ammonia limits. Currently the Regulations say that the limit in the waste, that is, the waste that finds its way into the body of water is .5mg per litre and the Regulation changes it from .5 up to 2. It is true that in the last 10 years, the EPA has through the Pollution Reduction Program that it's negotiated with the Water Board and others, that ammonia levels have been substantially reduced as a result of those programs. However, the problem is that there is just no technology available at the moment that can guarantee 100% of the time that that .5mg per litre can be met. It can be achieved much of the time but it cannot be achieved all of the time. There are things that you can do to bring it right down. One of those things include chlorination but from an environmental point of view, the chlorination process actually causes greater environmental problems than the thing that it is designed to overcome. For this reason, the limit has been changed from .5 to 2. Now that is not to say that it is always going to be 2. It is just that there will be circumstances that there is no facility that can be built that can guarantee 100% of the time that that .5 will be met.

Basically what the Regulation does, it allows for the possibility for the Planning Environmental Evaluation to proceed. The Regulation does not authorise any particular system, it just sets a frame in which it can occur. What has to happen is it does not override any of the final processes, Part 5 of the Environmental Planning Assessment Act will have to be complied with. Environmental assessments will have to be done and the processes that are put forward will have to be evaluated. What happens then is if it actually survives that test and the system with the sewer overflows and the ammonia levels proposed appears satisfactory to everyone, then the EPA is in a position where it can regulate it and attach stringent conditions.

Basically what the Regulation is about is it is getting improved environmental outcomes. Without these sewage treatment plants the existing septic system will be there and everybody I think acknowledges that they are a problem. That is all I can say.

CHAIRMAN: Does anybody have any questions they wish to put forward?

Mr YEADON: It seems to me that a lot of this issue turns on the existence or otherwise of technology.

Ms CAMPBELL: Yes.

Mr YEADON: Are you aware, and I am not restricting this to protected waters but any waters and indeed internationally, of any plants with the technology that can achieve the .5 per litre on a 100% basis anywhere?

Ms CAMPBELL: No. Certainly not without this chlorination process and I have brought a technical expert along. I am a lawyer, not a technical expert - that is my understanding.

Mr YEADON: Following on from that, is there existing plants located alongside any bodies of water, not necessarily protected, where there has been a monitoring of the overflow from the sewage system; you say that they all must be built with an overflow capacity in case of emergency.

Ms CAMPBELL: Yes.

Mr YEADON: What sort of empirical evidence do we have for the regularities in overflows?

Ms CAMPBELL: I think Peter Marczan will be able to give advice about that. He will speak next. Certainly there is a proposal now where there's been a lot of concern, particularly as a result of the Joint Select Committee into the Water Board about this question of sewer overflows and that there are major

problems. In fact the EPA has been having discussions with the Water Board going back 12 months now to work out a process by which we can license them and there will be monitoring put in place. There are things that you can do to minimise the effect of sewer overflows. You can actually build big retention basins around them and so on to try and ensure that they don't find their way into the waters. There are things that you can do and we are in the process of looking at licensing all of the existing ones.

Mr KNOWLES: The Water Board Select Committee heard evidence that there were 21 STPs on the Hawkesbury/Nepean, all of which were at different stages in their cycles of overflows on a fairly regular basis. Can you define regular for me?

Ms CAMPBELL: It depends on the water; periods of high rainfall.

Mr KNOWLES: The Water Board's policy, particularly in periods of high rainfall, even dry weather, they are one of the major pollutants of the system.

CHAIRMAN: How do you arrange that with, for instance, the Belconnen Treatment Works on the Murrumbidgee River; everybody below the Belconnen Treatment Works gets what comes out of the Belconnen Treatment Works which is the whole of the city of Canberra. Except for algal blooms which happen probably once every couple of years, they are usually assigned to farmers putting too much of their rice water back into the river which is a long way below the Belconnen Treatment Works. People have tried to make politics about the Belconnen Treatment Works, particularly anybody who lives below. A very easy thing to get people worked up about, what's going to the river out at Canberra and we're copping the lot of it. However, up to date, there has been no and even some quite vociferous politicians have had to back down so far as the quality of the water coming out of the tertiary treatment of the Belconnen Treatment Works so how does that sit with all these people getting really bad news out of the discharges from sewers into protected waterways?

Ms CAMPBELL: Certainly I am not familiar with the system that you speak about but if it is a reticulated system it must have sewer overflows.

CHAIRMAN: I am sure it does; the point is people have tried to complain about it and anybody - 100% of the population will try and complain about it if they think there's anything to be gained out of it but so far all of the complaints have always come to nought because the quality of what comes out of the Works has been considered adequate for the river and we may have had algal blooms but we haven't had anybody getting health problems or anything like that.

Ms CAMPBELL: I think there is general agreement - the ACF may have different views - that something needs to be done about the septic tanks that they really are causing a major environmental problem and until this Regulation is amended nothing can be done.

Mr YEADON: In the document I have that analyses the various options in relation to this Regulation, it is made clear that the EPA will conduct or that there will be monitoring by the EPA and proper environmental impact statements done on a case by case basis and this document says in relation to that, that each of these developments will need to show that the expected improvements in water quality outweigh any possible impacts due to overflow.

Ms CAMPBELL: That is right.

Mr YEADON: With the poor information that I understand you have on overflow events, how are you going to come to a fairly conclusive result?

Ms CAMPBELL: I think that when I am talking about the poor information, that is on existing systems that we have had up to date. These are new or augmented systems that have been designed and they will be designed so that they have this monitoring and this monitoring will be part of the process. The way the Regulation is framed is it actually requires the EPA before we actually approve any sewer overflows to take into account whether the difference between having it and not having it, so we will be required to monitor what happens.

Mr YEADON: But you are not going to know that prior to it actually being put in place though and once it has been put in place then you have probably spent a lot of money and it is going to be difficult to pull it out. You are going to have to have, I would have thought, to really come to an empirical conclusive result, you are going to have a couple operating a monitor for a while to see what happens otherwise you are in guessing land aren't you if you have got no real data already on what the existing overflows are on existing plants.

Ms CAMPBELL: I am just wondering; Peter Marczan is the technical expert, I am just a lawyer.

PETER JAMES MARCZAN, Waste Water Engineer, Environment Protection Authority, Unit 4/10 Bruce Street, Brighton-Le-Sands, affirmed and examined:

CHAIRMAN: Did you receive a summons issued under my hand in accordance with the provisions of the Parliamentary Evidence Act 1901?

Mr MARCZAN: Yes I did.

CHAIRMAN: Do you wish to elaborate upon anything that has been said to us already by the Legal Officer?

Mr MARCZAN: No, I think I can just answer questions that are put to me.

CHAIRMAN: I invite some of those questions.

Mr YEADON: I am concerned as to how you are really going to know what the expected improvements in water quality are going to be and whether or not they outweigh the possible impacts due to overflow when you do not seem to have a lot of information in that area?

Mr MARCZAN: With new systems we can actually do a risk analysis before the system is put in place based on the design of the system and make an estimate of the frequency of overflows and what the likely volume of overflow is going to be and just compare that with water quality, see what impact that will have on the water quality and compare it with present water quality.

Mr YEADON: Has there been any risk analysis done on any existing or proposed plants in preparation for putting this Regulation in because I note that you really say in your assessment that really there is not a lot known about it so I would have thought that you would have undertaken some sort of predictive exercise by now. Has that been done and can any material be supplied in relation to it?

Mr MARCZAN: There has been no specific work done for these Regs, no.

Dr KERNOHAN: I had a question of the Legal Officer and that is, the Australian Conservation Foundation claim that the Regulation is invalid and the Authority under which it is made, would you like to comment on that please?

Ms CAMPBELL: Our legal advice is that it is valid and all Regulations, before they can be made, have to go to the Parliamentary Council for an opinion that they can legally be made and this Regulation has been through that process and the Parliamentary Council has said that it can be legally made. It is quite clear that the Regulation prescribes the classifications and Regulations can be changed by other Regulations. This is no different from any other process like that.

CHAIRMAN: So long as it is within the spirit of the Act?

Ms CAMPBELL: Yes.

CHAIRMAN: Would you have any problems if we asked the Attorney-General?

Ms CAMPBELL: No not at all.

CHAIRMAN: Going back to the technical aspect of things, can you tell me how come we are not poisoned to death below the Belconnen Treatment Works?

Mr MARCZAN: I can't tell you why we're not except that it does a good job, I suppose, previously.

CHAIRMAN: It seems to me that every time there is a problem with sewage works you call in for tertiary treatment. What is tertiary treatment that we don't get in secondary treatment or primary treatment?

Mr MARCZAN: Tertiary treatment just means that there's three stages of treatment.

CHAIRMAN: I realise that.

Mr MARCZAN: It is simply a higher level of treatment. The tertiary stage, it is a non-specific term. It can mean that there might be filters, there might be some type of chemical treatment. It can mean a variety of things.

CHAIRMAN: The fears that are expressed in this, may be addressed by tertiary treatment?

Mr MARCZAN: I am not sure what the fears are.

CHAIRMAN: The fears of the ammonia.

Mr MARCZAN: The level of ammonia removal that we are talking about here is the best that you can do with tertiary treatment.

Dr KERNOHAN: Could a treatment, by putting it through plants, disposing on land, with run off etc., could that improve the situation ultimately other than going into the river?

Mr MARCZAN: That is very difficult to predict. The levels of ammonia that we are talking about here are already so low that the biochemistry becomes difficult to predict. So at times you may go lower and then you may have weather changes and winter coming on, plants die and the levels of ammonia may rise again and actually you get plant matter, things like that rise above the level that we are talking about here.

Mr RIXON: You talked about two standards of rivers; Ss and Ps; S is pristine. What is the level of ammonia or nitrogen or any other measure would you expect to have in a pristine river?

Mr MARCZAN: In the water itself?

Mr RIXON: Yes, well that is what we are talking about.

Ms CAMPBELL: In the case of the pristine waters, no wastes are allowed to go into the water at all.

Mr RIXON: No, I'm not talking about waste, I am talking about naturally occurring ammonia, nitrogen, phosphorous, whatever else we are arguing about.

Ms CAMPBELL: That is one of the flaws of the Regulation because the Regulation focuses on the wastes that goes into the water, they don't actually focus on the standard of the water itself so that they don't measure the ambient.

Mr RIXON: That is why I am asking the question. In the normal pristine river, do we normally have some ammonia, nitrogen, whatever it is, in the normal pristine river and if so, roughly what level?

Mr MARCZAN: I am not a water quality specialist unfortunately.

Dr KERNOHAN: You just said that the cane vegetable matter would put ammonia into the rivers.

Mr MARCZAN: I can't really give you any numbers.

Mr RIXON: What I am really looking for is the background effect. Let's face it, if we are talking about radiation and we are talking about getting radiation down below what's normally provided by the sun and anything else, we're pushing uphill aren't we? So I am just wondering if we are at a level here which is normal background level anyway or whether we are miles below it, miles above it or whatever. Anyway you can't answer obviously.

CHAIRMAN: Would you like to say something about that?

Mr MARCZAN: No I don't think I can answer.

Mr KNOWLES: I assume if the work goes ahead, the EPA will issue some sort of operating licence?

Ms CAMPBELL: Yes that is right.

Mr KNOWLES: Can you tell us what structure your organisation will put in place to monitor the performance of the work over time? What is your normal process? You issue a license which sets standards and then you have to, I assume, enforce compliance with those standards?

Mr MARCZAN: Yes, we normally require monitoring of the effluent itself. Most other plants around the Sydney area are on a six day cycle and then there's actually another day either side of that sixth day so the requirements for these plants would be similar or perhaps even more stringent. So I suppose we are getting close to taking a sample on average every second day and the EPA comes in and audits that. Every now and again we will come in and take our own samples and take them away and analyse them.

Mr KNOWLES: Assume for the moment a breach in the standards that your operating licence prescribes by the operator, what measures exist to enforce compliance with those requirements - does it range from fines to removal of licence?

Ms CAMPBELL: Yes that is right. We can issue notices. It can range from a penalty notice which is an on the spot fine. If it is major, we can prosecute and we have prosecuted the Water Board on a number of occasions.

Mr KNOWLES: You have?

Ms CAMPBELL: The EPA, yes.

Mr O'GRADY: On how many occasions?

Ms CAMPBELL: I think three or four in the last; since the EPA started, since March 1992. I have not got the exact figures with me. We also issue notices.

Mr KNOWLES: There is a lot of criticism of the EPA's failure to prosecute the Board for repeated discharge into the water system.

Ms CAMPBELL: We have prosecution guidelines which have been approved by the Board of the EPA which talk about the circumstances in which we

prosecute. We have in fact prosecuted the Board for breaches. I guess it depends on culpability. If a breach occurs because of weather conditions over which they have got no control, there is no point in prosecuting them. So it is a question of culpability.

Mr KNOWLES: The .5 and the 2 - what units are we talking about?

Mr MARCZAN: Milligrams per litre or parts per million.

CHAIRMAN: The Regulation has not stipulated what sort of Technology has to be used, it has not specified a lower or an upper?

Ms CAMPBELL: That's right and that is for a particular reason because what has to happen is that before any infrastructure has to be built it has got to go through the environmental assessment procedure and of course what is available changes over time and improves over time so it is whatever is the best available at the time that process is carried out. In five years time we may be able to achieve .5 100% of the time, in which case that would be the system that would be chosen.

Mr RIXON: If you have an existing system you believe that you may be able to attach whatever the improvements are to the existing ---?

Ms CAMPBELL: I guess it depends on the particular improvement, certainly if it is possible. One of the things that the EPA can do, we do actually require pollution reduction programs on existing infrastructure so that we can go along to the Water Board and say - and we have done this - look, the standards you are reaching are not high enough, there's new technology available, you must use this new technology and this is the time frame over which it must be phased in and you must have it done and that's commonly done.

CHAIRMAN: The technology must exist because in Vintook in South West Africa, Vintook it used to be called, now Minibia, the water gets recycled for human consumption. They don't get a lot of rainfall.

Dr KERNOHAN: Certainly technology we would envisage in the future would be able to come and produce the results that anybody would want but can you see technology which will completely prevent and guarantee no overflows?

Mr MARCZAN: No, not while we use the same kind of sewage transport systems, no.

Mr YEADON: Probably following on somewhat from the Chairman's question and his example in Africa; surely there must be regulations by other countries around the world in relation to milligrams per litre of such things as ammonia.

How does the proposed 2mg per litre stand up against other regulations in other countries? Is it over, under - what is the story?

Mr MARCZAN: That is actually a little difficult to answer because the statistical methods that are used to determine compliance are different. But from what I have seen and I cannot remember numbers off the top off my head but these numbers would be about the same or tighter than most other countries.

Mr O'GRADY: 2 or .5?

Mr MARCZAN: The 2. The 2 as an upper limit.

Dr KERNOHAN: 2mg of ammonia, is that detrimental to human health

Mr MARCZAN: I don't know, I couldn't answer that, sorry.

Dr KERNOHAN: Does anybody know? At that level can you taste it? Is it anything? Could you tell the difference?

Ms CAMPBELL: Can I just say, the existing seager treatment facilities that we have now are not complying with this .5.

Mr O'GRADY: How many are not?

Ms CAMPBELL: None of them would be complying with it 100% of the time.

Mr O'GRADY: How often are they?

Ms CAMPBELL: It depends on temperature.

Mr MARCZAN: On average, most of the plants in Sydney for instance are around the .5 or even under so on average the .5 is okay but as an upper limit as the Regs are it can't be met.

Mr O'GRADY: You still haven't answered what I asked you?

Mr MARCZAN: If you want to know how many plants comply with .5 all of the time, there's none.

Mr O'GRADY: So how often don't they comply?

Mr MARCZAN: All of the time.

Mr O'GRADY: All of the time they don't comply?

Mr MARCZAN: With .5 as an upper limit.

Ms CAMPBELL: But there are times that they will.

Mr MARCZAN: Sorry, okay, well about half the time they will be around .5 or less.

Mr YEADON: And the rest of the time they will be?

Mr MARCZAN: They will be above it, between .5 and 2.

Mr YEADON: Has that been monitored? Do you have material on that in relation to plants in New South Wales?

Mr MARCZAN: We have got some, yes.

Mr YEADON: Could they be made available to the Committee or are they confidential?

Ms CAMPBELL: No, no, it is all available.

Dr KERNOHAN: Mr Chairman, the thing that really worries me; I want to try and get a handle on what 2mg means. I think what has been said about the change in Regulations and things, the impression given in the community is that there's something that probably looks like urine going out. The fact is that you probably couldn't see, couldn't taste, couldn't smell; the levels are so small. You said yourself about the levels affect on plant life. Now, plants are desperately short of nitrogen in various forms and any chance of taking it up and you say biochemically it is minuscule. How minuscule is it? What are we really complaining about?

CHAIRMAN: They are working right throughout the Commonwealth of Australia at the moment, particularly in the State of New South Wales, whatever the limits are at the moment. Now you are saying that the EPA is monitoring that and will be whatever later technology comes in which is compatible with costs and risk to the community will be adopted surely.

Mr KNOWLES: Chairman, isn't it fair to assume that one of the reasons why organisations like the ACF are complaining is that there is the knowledge that the bulk of Sydney's septic tanks are not complying with standards and they are suspicious that adding another one into a system such as this particular area is also unlikely to comply and three or four prosecutions over a period of years is not regarded as good performance in terms of regulatory policing processes by the EPA and I would suspect - isn't that a summary of the ACF concern? That certainly was their concern to the Water Board Inquiry?

Ms CAMPBELL: I think the point about the standards is that no-one can meet them 100% of the time and the Regulations are not clear about whether they have to be met most of the time or all of the time. It's just not possible to meet them all of the time and putting it into legislation doesn't make it happen. The Regulations have to reflect the reality and the reality is that there will be occasions on which they will exceed .5 and go up to 2. The EPA's role is to make sure that the best technology is put in to achieve the best environmental outcome and the environmental assessment process that has to be gone through and the licensing that we have to carry out as the EPA is designed to achieve that.

Mr RIXON: Under the existing regulations you can never improve it for those particular areas. Only by the introduction of the new regulations do you have the opportunity.

Ms CAMPBELL: We cannot actually approve the new ones because we know that if we have to give an approval to these new ones, we know they are not going to achieve it 100% of the time. So it is better to have them reflect what actually is achievable.

Mr RIXON: What you are really saying is we have got two alternatives, septic or sewage and the sewage alternative is better than the septic alternative?

Ms CAMPBELL: That's right.

Mr RIXON: That is really what it boils down to?

Ms CAMPBELL: In a nutshell, yes.

Mr RIXON: And this Regulation enables the sewage alternative to be actually used?

Ms CAMPBELL: Yes.

Mr RIXON: Without the change in regulation we don't have access to the sewage alternative and we would have to continue using the second best.

Ms CAMPBELL: Yes.

Dr KERNOHAN: And the people of Picton will have to bear the smell every night.

Ms CAMPBELL: And the problem with septic systems, it's very difficult to regulate septic systems because everybody has their own. It's much easier to regulate a centralised system.

Mr KNOWLES: When do you anticipate a Stage 2 result? It's been announced three times by the Governor.

Ms CAMPBELL: Is it something I should answer?

CHAIRMAN: It is up to you to answer.

Ms CAMPBELL: That is up to the Government, I can't comment on that.

Mr KNOWLES: I was talking to Bob Wilson yesterday, the former Head of the Water Board, who tells me his recollection of the matter, the EIS was done also by the local council to upgrade drainage as part of the overall scheme. Do you know about that, as part of the conditions of the scheme going ahead?

Ms CAMPBELL: Is this for Picton?

Mr KNOWLES: Yes, and if that is correct, the upgrading of drainage for further run-off control, has that in fact been done?

Ms CAMPBELL: I'm sorry I don't know.

Mr RIXON: Can I regress a little bit. They've just put in a sewage system in Nimbin; talk of being in other places like Dunoon and other villages around about. Is what this really boils down to, without this Regulation, places like that couldn't legally really put these in, if the river or creek, or whatever near them happens to be a Class S or P?

Ms CAMPBELL: That's right. We have got a map which we have brought along which shows you where they are and a lot of the State has not been classified but to the extent that the waters have been classified, that's a problem.

Mr RIXON: Let's face it; my part of the world is perfect; all our rivers up there are S or P. I can guarantee it, cross my heart sweep the floor. We live in the Garden of Eden. So what we are really saying is if the rivers and creeks across New South Wales were all classified, the chances are a fair percentage of them would be S or P, in which case you couldn't then put in sewage systems without this Regulation?

Ms CAMPBELL: Yes.

Mr YEADON: Mr Chairman, could I ask for an explanation of the reasons for variation in ammonia level output. You say that maybe half of the time they will be .5 and then they will vary. What is the process going on there and what I am trying to get down to is earlier comments by the Water Board and the

need for culpability in going for a prosecution. I am thinking that under the licensing proposal that is going to be in place by the EPA, I am trying to understand what is going to allow the operator or a sewage treatment plant to get away with consistently higher levels than .5. What sort of reasons would be offered for those variations? I am trying to find if there's a number of escape hatches there for people where there is not a strong enough will within the EPA and I think clearly one of the concerns is how determined the EPA is perhaps going to be in relation to monitoring and so forth in the future. If you could just give me an explanation of that process and how you see it occurring in the future.

Mr MARCZAN: The first part of your question - the reason that the ammonia concentration coming out of the plant varies is for a number of reasons. The main ones all revolve around the fact that it is a biological process so that the rate at which ammonia is removed varies and it varies as the temperature changes, as the flow changes and most important one is as the characteristics of the sewage coming in vary and that varies throughout the day because peoples' activities changes and biologically what it means is that the ratio of carbon to nitrogen changes during the day and that affects the rate at which the organisms doing the work can remove the ammonia. So during the day the ammonia levels just sort of follows a wave in concentration. And the second part of your question - I think I need to ask you to run it by me again.

Mr YEADON: Given those sort of reasons that you put forward it seems to me that there doesn't seem to be a lot of control over technology once it's in place. So in other words what is going in to the front end of the system has a consequent result on what comes out at the other end in terms of ammonia levels. Really you are in no position to go to that sewage plant and say some process or technique has now got to be put into place or something has got to be done to improve the level. You have really got no control over it so in effect what's the role of the monitoring process? Is it once that technology is in there and is working to its maximum capacity one would assume 24 hours a day and that other variable factors that technology has no control over, like temperature input, really what's the purpose of the monitoring process because you are not going to be able to say to the operator that they have got to undertake some action.

Mr MARCZAN: The design of the plant revolves around picking or trying to estimate what the most, the largest excursion in temperature and flow and characteristics of the sewage are going to be and designing around those. So we are talking about the process controlling the variations within boundaries. Experience has been that the upper bound is around 2mg per litre. I am not talking about varying wildly around above 2. I am saying that the variation in process during a normal day will take it up to around about 2.

Mr YEADON: We are really going to get to maximum levels every day of the week then?

Mr MARCZAN: No, sorry; on a very cold day in winter you might hit 2. You are trying to design your plants so that you cope with the worst case.

Mr RIXON: What you are really saying is it would vary somewhere between .2 and 1 in most cases with occasional fluctuations in others?

Mr MARCZAN: Up to 2, yes.

Dr KERNOHAN: Does what you are saying apply to all the alternate technologies that have been mooted around the place?

Mr MARCZAN: I think most of the alternate technology - it depends what the alternate technologies are really.

Dr KERNOHAN: In that case I cannot ask you. Everybody is mooting new alternate technologies for sewage, as I understand they are all biological. So if they are biological this is the thing that if it comes in, temperature difference, changes of what comes in and what goes out, so that if they are biological, these changes that you mentioned pertaining to the Water Board system and current system would apply to them too.

Mr MARCZAN: Yes.

CHAIRMAN: And would either be changed by either, I think sewage engineers dictum is size, you just make it a hell of a lot bigger or you have a combination; mechanical, aeration and all those sorts of things plus the extras, so it can be overcome just with biological but then there is also the mechanical things. There are filters, membranes, all that sort of stuff in there which you can, if you really want to get smart, you can implement that sort of stuff. So there really is no end to the technology that you can use if you really have got the money to do it.

Mr MARCZAN: Yes that is right.

Mr MUTCH: I would just like to ask a few questions that actually relate to our function. We are here to determine really whether or not you comply with the requirements of the Regulation Review Act. One of those is that an Environmental Impact Statement is made. We are just wanting to be sure that Schedule 1 was complied with.

Ms CAMPBELL: Yes.

Mr MUTCH: There was an assessment annexed to the Minister's letter to us. It wasn't signed or dated I am advised. Do you know who actually prepared that particular assessment?

Ms CAMPBELL: Yes, that was prepared by - there was a team of people on it. There were lawyers, there were economists and there were technical experts; water quality experts and waste water engineers like Peter and that went to the Minister before he actually made the decision to make the Regulation.

Mr MUTCH: Schedule 1, Section 2B of the Subordinate Legislation Act requires that the objectives of the regulatory proposal are to be checked to ensure that they accord with the objectives, principles, spirit and intent of the Enabling Act. Apart from attaining the certificate to the Parliamentary Council that the Regulation could be legally made, can you indicate what other steps you may require to comply with this requirement of Schedule 1?

Ms CAMPBELL: As far as the legal checks are concerned, the EPA has a Legal Branch and I am the Director of it and we have to be satisfied that it can be legally made. We don't want to recommend to the Minister something that can't legally be done. The ultimate check is the Parliamentary Counsel's office. Their job is to advise the Government actually of all regulations. No regulation can actually be made unless there is opinion from the Parliamentary Counsel that legally it can be made and that was obtained in this case.

Mr MUTCH: Item 2(c) of Schedule 1 requires that alternative options for achieving the objectives of the regulatory proposal, whether wholly or substantially, and the option of not proceeding with any action must be considered. I note that you have considered four options in the Schedule 1 assessment. Apart from the do nothing option which is option 1 would the other options wholly achieve the objectives?

Ms CAMPBELL: Not to the same extent as the preferred option. That was the view. All the options were analysed and option 4 I think which is the one we came up with is the one that achieves the best environmental outcome which is what this is about.

Mr MUTCH: You don't believe that any of the other options would substantially achieve the objectives?

Ms CAMPBELL: They may substantially but this was the best one.

Mr MUTCH: Schedule 1, 2(d) requires a cost benefit analysis for each option and a comparison of the direct and indirect and tangible and intangible cost benefits. The cost benefit analysis you have provided with the Minister's letter does not seem to identify these costs. For the benefit of committee members

would it be possible for you to identify the direct, indirect, intangible or tangible costs of these options?

Ms CAMPBELL: On Page 5 of the analysis there is discussion about the various costs. If you look at Page 6, I'm sorry, it talks about the costs.

CHAIRMAN: The Environmental Impact Statement for each of these developments will need to show that the expected improvements in water quality outweigh any possible impacts due to overflow events.

Ms CAMPBELL: Can I also say a more detailed cost analysis will need to be done as each infrastructure proposal is analysed in accordance with Part 5 of the Act has to be done under the planning legislation on a case by case basis. So this isn't the end of it.

CHAIRMAN: This is merely the regulation that enables the areas to be undertaken.

Ms CAMPBELL: That's right.

Mr MUTCH: We are really here, not to examine public policy, we are only here to make sure you have complied with the requirements of the Act. The Minister must also consider the principle that implementation of a statutory rule should not normally be undertaken unless the anticipated benefits to the community outweighs the costs, bearing in mind its impact on the economy, consumers, members of the public, relevant interest groups and any sector of industry and commerce that may be affected. What steps did the Minister take to determine what impact would arise for these groups? Did adequate consultation take place?

Ms CAMPBELL: The environmental groups were aware of this Regulation. They were not aware of the precise details of it, but they were aware that this Regulation was being made and there was correspondence that I have got on file between us and some of the peak environmental groups about this Regulation.

Mr MUTCH: Was there any advertising?

Ms CAMPBELL: No.

Mr YEADON: There was no formal consultation process put in place?

Ms CAMPBELL: There wasn't a formal process, that's true.

Mr MUTCH: This is Schedule 1, so it is not a strict requirement?

Ms CAMPBELL: No, there's no legal requirement, that's right.

Mr YEADON: Why did you decide not to conduct a formal process? Was there some reasoning behind that? If it wasn't necessary so why do it?

Ms CAMPBELL: In this particular case because there will be extensive public consultation if the infrastructure proposal goes ahead and this Regulation will have no impact. It will achieve nothing until the actual infrastructure proposals go ahead and those proposals will be subject to exhaustive public consultation, under the EIS it has to be prepared and under the Planning Legislation it has to be exhibited and so on and people get an opportunity to comment at that stage.

Mr YEADON: Once this Regulation is in place you can have consultation or whatever else on a case by case basis but really the broad framework of the rules have been made and you can really do what you like within that framework can't you?

Ms CAMPBELL: I don't think that's true. I think that the Planning Legislation requires that all the options be examined for a particular proposal and the Act requires that the best environmental outcome be decided is the one that you proceed with, taking into account economic factors. At the end of the day there must be public consultation. This Regulation does not plum for a particular system.

CHAIRMAN: It is merely enabling?

Ms CAMPBELL: That's right.

Mr YEADON: Yes that's right, it's enabling but then once it is enabled I understand it really comes down to a large extent to the credibility of the EPA that there's concern about whether or not you are going to be forceful enough in the process.

Ms CAMPBELL: It is not just the EPA. What has to happen is the Environmental Impact Statement has to be done and it is now determined by the Minister for Planning, not by the Water Board and they have to come along to us and get a license. If the Minister gives us any directions as to licensing, they have to be tabled in the House. We do have an independent Board.

CHAIRMAN: So every one of these will require

Ms CAMPBELL: Yes they will because they will significantly affect the environment.

(The Witnesses withdrew)

TIMOTHY GORDON FISHER, National Resources Campaign Co-ordinator for the Australian Conservation Foundation, of 3 Furley Street, Chadstone, Victoria, affirmed and examined:

CHAIRMAN: Did you receive a summons from me to be here today?

Mr FISHER: Yes.

CHAIRMAN: Do you wish to make a statement or make a submission?

Mr FISHER: Yes I have a written submission which I would like to hand around - unfortunately there's only 8 copies - and I would like to run through it I think if that would be appropriate. I apologise for the quality of the photocopying.

The first page is just basically a summary of the points we want to speak to and I will go through them one by one. Firstly we consider that the Regulation may have an adverse impact on the business community. These are in no particular order, by the way. You will be aware the estimated cost to customers of one of the seven sewage schemes, the Picton one, is estimated to equate to an additional $600 per quarter per household or $130 per quarter of which is likely to be charged to residential customers as a recurrent charge, with the remainder being charged as an up-front development charge borne by developers which will be in the order of $21,000 per lot. In this way, consumers and other businesses, will pay for the cost of the sewage system.

It is our contention that a range of other options for the treatment and disposal of sewage were not given adequate consideration and that, as a result, the costs incurred on business and industry will be greater than if other options were explored and pursued. I will speak to those other options later.

Furthermore, the proposal to permit increased nitrogen levels into the Hawkesbury Nepean will further compound the serious problems associated with high nutrient levels such as algal blooms in the lower tidal and costal regions of the river. In the process, the Regulation will add to the costs incurred on the recreation and tourism industries, through reduced amenity and environmental values, on oyster production areas and perhaps on recreational and commercial fishing activities as well.

Mr RIXON: I think we have probably got the guts of it; can you just pick out the really pertinent points.

Mr FISHER: The second one, that the Regulation is not within the general objects of the legislation under which it is made.

Mr RIXON: That is self-explanatory.

Mr FISHER: That's right. The third, if it is lawful, then it is outside the spirit of the legislation and here in our submission we refer to a number of pieces of legislation, Clean Waters Act, Protection of the Environment Administration Act, the Environmental Offences and Penalties Act and that by permitting increased levels of pollutants into the rivers it does appear to be contrary to the spirit of the legislation.

No. 4 is perhaps the point we would like to focus on most that the objectives of the regulation could have been achieved by alternative and more effective means. Here we refer to principles of Integrated Least Cost Planning where really you should test the full range of options for their financial and economical implications before you proceed with one or the other. And I think in some ways that this is a case of the cart pulling the horse by changing the regulation before these have really been given adequate consideration.

Firstly, what sewage treatment technologies have been considered and/or costed? We would suggest that only a very limited range have been considered and I think it is probably fair to say that there was pretty clear mind set within the Authorities as to what was the preferred option prior to a broader canvassing of other options.

We would ask whether tenders have been invited from private companies to provide sewage services, reticulated sewage services as well as perhaps non-reticulated sewage services, within the context of the existing regulatory arrangements.

Mr RIXON: I think you can keep going, I think you have covered that.

Mr FISHER: I just want to make the point that we don't see any evidence that tenders have been called or invited for and we would also suggest ---.

Mr RIXON: It's made in the papers, there's no need to repeat it, that's all I am saying.

Mr FISHER: I would like to make the point if it is all right.

CHAIRMAN: It is your prerogative.

Mr FISHER: That the tendering at the proposed ammonia levels of 2mg per litre will disadvantage companies which might be in a position currently to tender at the existing levels.

The third point we would like to ask: has an assessment of existing infrastructure, particularly septic tanks, been undertaken with particular reference to the cost of upgrading and/or maintaining this infrastructure to

acceptable health and environmental standards. And there are a number of issues. We have placed two attachments to this which refer to the benefits of reducing water input into septic systems in particular that they can operate much more effectively and it may well be worth the Water Board considering basically paying for retro fitting, particularly in low flow shower heads and for the dual flush toilet system, the 63 toilet system, which would substantially reduce inflow into septic systems and improve their performance.

Septic systems traditionally are just put in and forgotten until it's got to the point where you actually can smell them. I think there is every potential to look at regular de-sludging of septic tanks as a way of maintaining them and that this could vastly improve their performance. It may well be that the costs both to the consumer and to the Water Board of providing that regular de-sludging services may well be far lower than a reticulated service and there may be some scope too for upgrading and/or replacing existing septic systems, particularly looking at the arranged systems. It could be considered also that there might be some regulatory considerations here that indeed consumers of septic tanks might well be forced at some stage in the future to maintain them to acceptable standards. We don't see that as being unreasonable. Having said that, there is no doubt that septic systems do contribute to water pollution.

CHAIRMAN: I think the case we are talking about is they are falling to bits.

Mr FISHER: That is perhaps the case but I am not aware of the status of the septic system in place in the Picton area or elsewhere.

The fourth point, what is the range and cost of various water re-use options. Water re-use is another alternative. Two were mentioned by the previous speakers before me. But water re-use was not seriously considered. Particularly where that re-use involves using all or most of the effluent involved that might come out of the reticulated sewage system and they referred to domestic non-potable re-use, such as that being proceeded with at Rouse Hill. Irrigated plantation forestry and keep in mind plantation forestry is a very efficient user of water, much more efficient than pasture for example and can reduce run-off from sewage systems substantially if not totally. (iii) Irrigated grazing and/or horticulture, (iv) re-use on parks, gardens, golf courses, etc, and perhaps if you look at the septic systems which obviously increase recharge to groundwater, you could increase groundwater pumping for irrigation purposes by a corresponding amount.

The fifth point is that regulation will not reduce current levels of pollution in waterways. There is a reference in the Picton Supplementary EIS to an objective to reducing the present pollution in backyards and local waterways, it is the local waterways we are principally concerned with here. By weakening

the regulations clearly there will be increased pollution. We think that that really contravenes that objective that was set down in that Supplementary EIS.

A couple of other points I would like to make; there was reference made to overflow and that it can't be prevented. Of course it can be prevented, it is simply a matter of costs and pipe diameter and so forth. I am not seriously suggesting that we go to that huge expense but retention basins are an important part of any sewage overflow capacity and especially when you are talking of new urban areas, there's enormous potential to building a design into the design of your sewage systems, retention basins, so that when you do get an overflow of that, you can restore it and take it back into the system at a later date.

There is a point made in the letter to yourselves from Chris Hartcher. He says:

> "I understand that there may be private sector companies that say they can meet the existing ammonia levels. I understand that in more detailed discussions with technical experts they have however noted that this may not be feasible 100 percent of the time."

I think it would be well worth this Committee's time to ask what percentage of the time they could achieve because that may well be an issue that you might want to consider. If they can get a very good compliance rate in the 90% range, 95% range that it may well be that the existing regulation can be maintained and that there might be some small degree of latitude on compliance if this could be achieved by those companies. According to Chris Hartcher's letter, that may well be the case. And that is about it, I think, yes.

Dr KERNOHAN: Mr Fisher, you say the Regulation will not reduce current levels of pollution in the waterways. Have you been and seen what those waterways look like now and the pollution been around the area?

Mr FISHER: I'm not as familiar as I'd like to be with the Hawkesbury Nepean system.

Dr KERNOHAN: You haven't been there, you haven't seen what's happening now?

Mr FISHER: Yes, I have been to the Hawkesbury River, yes.

Dr KERNOHAN: Have you been to Picton; Picton is specifically pointed out?

Mr FISHER: No I haven't.

Dr KERNOHAN: At the moment your information is leaking old septic tanks putting sewage of all kinds of treatment down into the groundwater and going ultimately into the creeks?

Mr FISHER: I have no doubt of that.

Dr KERNOHAN: What is proposed in your statement there, I'm sorry, but it will not improve it. Just by the fact of the change of ammonia; there's more than ammonia going in there now - a lot more. Most of the other comments you made were general under things that are surely to be taken up when the Environmental Impact Statements are made; the use of plantation forestry, things like that, is that not true?

Mr FISHER: If I could just take your first point first; I am not aware of any studies which has quantified the amount of pollution coming out of the septics in the Picton area and to my way of thinking at present that you may well be right but it's probably little more than hearsay in all honesty. I've got no doubt that there are septic systems failing in the areas as they do tend to everywhere. But I make the point again that very little effort or thought has been put into operating those septic systems, be they old, new or whatever to their maximum capacity. We believe that in all likelihood that pollution will increase as a result this regulation.

Mr YEADON: Over and above the existing problems that may exist out there with septic systems?

Mr FISHER: Yes and particularly as this may well be another way by which urban development; this regulation may open the door essentially to increased urban development there.

Mr YEADON: You are aware of that? It's geographically specific?

Mr FISHER: Yes. If there's any addition to the pollution loads in the Hawkesbury they it will of course have their impact downstream.

Mr RIXON: Part of your objection to this regulation is that you don't want to see any more urban development in the Hawkesbury area?

Mr FISHER: No that is not part of our objection.

CHAIRMAN: Doesn't this regulation - you say it is lawful but it is outside the spirit; may have an adverse business impact; the objectives of the regulation could have been achieved by alternative and more effective means; at the moment, am I correct, correct me if I am wrong; at the moment it can't be with the introduction of new regulations everything that you want to try or you

feel may be of benefit to the forestry, irrigation, then becomes available under the exploration by the individual bodies under their EISs they can examine all of those things. At the moment they can't. Doesn't it sound like a smart idea to me, to have the regulations so that these things can be done?

Mr FISHER: No, I disagree. I think that there has not really been any process of inviting companies with expertise in waster water management to come up with proposals, cost effective proposals to meet the existing regulations. Whether they use new technologies, existing infrastructure, water re-use in various forms, is, to my way of thinking, irrelevant but as soon as the regulatory limit is raised I think it makes it much more difficult for those companies to compete with highly efficient, in terms of pollution, systems.

CHAIRMAN: I am not understanding what you are saying. It is a bit all over the place. Start again, tell me ---.

Mr FISHER: If you raise the regulation level from 5 to 20.

CHAIRMAN: You are talking now about ammonia?

Mr FISHER: Yes.

CHAIRMAN: From 5 to 20?

Mr FISHER: Yes, then it will be much more difficult for those companies which can get a cost effective solution under the .5mg level, it would be much more difficult for them to compete against other companies if they're not bound to that 5mg per litre level.

Mr KINROSS: If they are not able to follow it at the moment isn't that like an analogy of speeding, if no-one is complying with the level, why not bring it in so that our lows actually enforce what practically can be achieved rather than just pay lip service to levels that are at present technology almost unattainable?

Mr FISHER: We don't know that because we haven't tendered it out to the private sector.

Mr RIXON: Coming back to your question a moment ago; you gave an example going from 5 to 20, aren't we talking about 05 to 2?

Mr FISHER: The number I was concerned about - it's the same order of magnitude.

Mr RIXON: The point I am making is any mug can perhaps get 20, takes it a bit better to get 5; when you start to talk about .2 to .5 we are talking about

the highest level of expertise, we are not talking about any partly qualified call him what you like; so that is what I am saying; your example is probably not a very good one.

Mr FISHER: If I rephrase it simply with the .5 to 2, then my statement stands.

Dr KERNOHAN: Mr Fisher, the new technology, you obviously have had a lot to do with the private firms and the proposals that they have?

Mr FISHER: We had something to do with it, yes.

Dr KERNOHAN: They have indicated that they can provide that level virtually all the time.

Mr FISHER: I will give you an example and I don't know the levels involved; I will give you an example anyway; that a private developer, Coombs Pty Ltd, is proposing to provide reticulated water and sewage and drainage for a new urban development called Caroline Springs in the western suburbs of Melbourne. They are proposing to construct a storage site for both treated stormwater and treated sewage effluent and that that storage site would hold effluent which is of sufficient quality to discharge into the waterway and I cannot say because I don't know what the standard is for that waterway and to draw that water off for non pipeable use to a second water supply pipeline system for domestic re-use. I fail to see why that sort of system can't be considered in this regard.

Mr RIXON: What is the Victorian standard?

Mr FISHER: I honestly can't tell you.

Mr RIXON: Is it .2, .5?

Mr FISHER: I can't tell you, I don't know.

Mr YEADON: But you are speaking about overflow prevention there, aren't you, rather than ammonia?

Mr FISHER: No.

Dr KERNOHAN: The next question is can they prevent overflows?

Mr FISHER: I'm not sure but they are proposing a large storage area.

Dr KERNOHAN: The question is this; nothing can happen; no-one is prepared to do anything and bring out any wondrous ideas and new techniques

because the guarantee; this regulation makes a flat statement .05 and no overflows. Nobody will do anything. Is the ACF happy to see the creeks polluted by septic tanks, everything else that is going into them now?

Mr FISHER: No.

Dr KERNOHAN: What I am saying is can you tell me are there any technologies available that you have heard of that can prevent overflows that can say we can build a septic system and not have overflows?

Mr FISHER: A septic system.

Dr KERNOHAN: Sorry, sewage system?

Mr FISHER: Okay. Well there are technologies. In regards to overflows a good retarding basin design can prevent overflows entering waterways almost all of the time.

Dr KERNOHAN: Almost, not 100 percent; specifically prohibits.

Mr FISHER: I think that even the current standards given that the Water Board has been prosecuted a few times in the last few years they cannot guarantee 100 percent of the time and whilst that is not satisfactory I think that you are always going to get the odd exception. The second thing in relation to discharge levels that re-use, viable re-use schemes can effectively eliminate all or almost all discharge and hence there is no need to change the regulation.

Dr KERNOHAN: Mr Fisher, I'm sorry, go back to the overflows. This regulation categorically states there will be no overflows.

Mr FISHER: Yes.

Dr KERNOHAN: Not there may be some or anything like this. There will be no - therefore nobody is prepared to spend any money on any plans on anything to try and look at alternatives to reduce it down to a system, a suitable environmental system because this regulation, unless they can say no categorically, they can't go ahead.

Mr FISHER: I think that it is worth saying that it is impossible to say no categorically in a thing like this.

Dr KERNOHAN: We need to change the regulation.

Mr FISHER: That doesn't mean that the regulation needs to be changed; that you should do everything possible to avoid at reasonable cost - hang on, hang

on - everything possible to reduce the discharge of overflows into waterways and the best way of doing that is through a retarding basin system. If there is the occasional overflow then you have every right to prosecute.

Mr RIXON: The retarding basins are usually after the treatment works and the overflows are usually before the substance gets to the treatment works so are you suggesting we are going to have retarding basins every half mile all along the main?

Mr FISHER: No I don't think there's going to be overflows every half mile along the main either.

Mr RIXON: That's a possibility. If you know the sewage system is around the overflows occur before and the overflows can occur in any number of a whole host of places wherever there happens to be a blockage or a tree root or anywhere else.

Mr FISHER: Yes and that's where you build your retarding basins.

Mr RIXON: In other words up on the side of the mountain if I happen to get some tree roots in there causing an overflow up there I'm going to have a retarding basin up there and when I've got halfway down the mountain I'm going to have one over the root - it is not practical.

Mr FISHER: The major overflows ---.

Mr RIXON: I am talking about any overflows. Let's take my own village of Lismore, it is up and down dale, all over the place and there's trees here and there all through the town. Every so often tree roots get into those pipes and they cause a blockage, you get an overflow occurring absolutely anywhere in the whole of the city of Lismore. There is an overflow which is recurring because tree roots have got into it, which is just impossible not to prevent absolutely all the time. It is not just stormwater getting into these things and this is occurring before the treatment works. We are talking about those sorts of overflows, there is no way retarding basins or anything else are going to prevent that sort of odd mishap. What do you do about it?

Mr FISHER: I'm not a water engineer so I can't give you a good answer. What I would suggest is that the main wet weather overflow points are where you focus your retarding basins.

Mr RIXON: The problem being we are talking about 100 percent no overflow. We are not talking about - I agree with you, with the wet weather coming down and there's just too much for the whole capacity of the thing. The overflow is most likely to occur down at the treatment works and retarding basins and all

those things are the right thing to do. But we are not just talking about that. We are also talking about all along the main, everywhere else, where this can happen.

Mr FISHER: I respond though to the question, if you take the Sydney Water Board and knowing that they do breach the regulations from time to time would you advocate that those regulations be changed so that they could guarantee that they will never breach them. I don't think you would. I think the purpose of these regulations is to try and ensure the best possible standards and that's what I'm after.

Mr RIXON: Coming back to you - are you saying there is some magical way in which we can prevent these overflows which occur with tree blockages before the treatment works?

Mr FISHER: What I am saying is that the purpose of the regulation ---.

Mr RIXON: So in other words what your are doing is just getting around the question I've asked, okay.

Mr FISHER: No, no I'm not at all. The purpose of the regulation is to ensure best practice. If you take out the requirement ---.

Mr RIXON: The purpose is also to be allowed something which is practical and sensible, as I understand it, and if we can't come up with something which is more practical and more sensible than what is being put forward then I don't see any alternative but to change this regulation, that's what I'm getting at.

Mr FISHER: I'm not sure if that's a question but I'll answer it anyway. There is no reason why you can't fairly cheaply and efficiently incorporate retarding basins into your major stormwater overflow points.

CHAIRMAN: It's not cheap.

Mr RIXON: Remember, overflows are not just stormwaters.

Mr FISHER: They are not just stormwater but that is the major issue as I understand it.

CHAIRMAN: I don't think there's any great problem with what you are saying, that there's a dispute on the dimensions, etc., cost wise etc. and I think we are probably starting to traverse old ground.

Mr KNOWLES: Mr Chairman, my question might be to anybody sitting down the back including Mr Spears from the Water Board. Can I just ask the

question and then he might think about it so that when he comes in he might be able to address it. My understanding is this regulation seeks to relax the standards for a specific number of locations. The Water Board is just about to try to be corporatised and I for one have been given by the Water Board the draft legislation and the package with lots of other people so they are prepared for debate next weeks. There's an operating license as part of that package for the Water Board that sets down the standards that the Water Board will meet to ensure that the EPA standards can be met. What standards are set in that operating license for the Water Board under corporatisation proposals? Are they the same as what we are seeking to vary here? I think they are.

CHAIRMAN: Why don't we get Mr Dean sworn in.

Mr KNOWLES: If the Water Board is able to agree to a license to meet service standards Sydney wide, why are they seeking to vary it in these specific locations?

Mr FISHER: A couple of points - we are talking about, if I understand ---.

CHAIRMAN: As this is a fairly shotgun type of question to the Water Board or scattergun I should say, would the gentleman from the Water Board, Mr Dean, come up please.

ANDREW JOHN HARLEY SPEARS, Manager of the Water Board Environment Branch, 10 Wyuna Avenue, Harbord, sworn and examined:

CHAIRMAN: We have a question before us at the moment. Do you wish to say anything before the question is answered or anything like that?

Mr SPEARS: I will just respond to the statement that Mr Knowles made.

Mr KNOWLES: It was not a statement, it was a question. I will re-state it. My understanding is that the purpose of this proposed regulation is to vary current EPA standards to potentially allow discharges into waterways that would otherwise exceed current standards. How does this proposal relate to the proposed licence the Water Board has indicated it will agree to enter into should it be corporatised? Are the standards in that licence, the corporatisation licence, the same as current standards or do they relate to these proposed variations?

Mr SPEARS: They don't relate to these proposed variations except in as much as the variations would allow certain conditions to be imposed on the Water Board through an EPA licence. In the process of developing the corporatisation instruments the EPA has always said, and rightly I think, that their licences should be held to be entirely separate from the operating licence given to the Water Board. So that their regulations and their requirements are not subservient to something else, some other instrument. So the intention of the operating licence is to require the Water Board to meet the relevant standards imposed on it by the EPA but without referring to these particular standards. If you wanted to follow up what those particular standards would be or are, in certain circumstances you would have to go from the operating licence to the various licences imposed on the Water Board by the EPA.

Mr KNOWLES: Do I ask you or do I ask the EPA, which standards will the EPA apply to the Water Board?

Ms CAMPBELL: The standards that will apply; if this regulation goes through the EIS, will be so that all the options examined and whatever is best, whatever the best environmental outcome that can be achieved.

Mr KNOWLES: I was talking about for the Water Board's operation as a corporation, you will give them a license?

Mr SPEARS: Yes.

Mr KNOWLES: That they will have to comply with?

Mr SPEARS: Yes.

Mr KNOWLES: And in that license it will set certain standards in some instances relating to nitrogen and ammonia discharges.

Ms CAMPBELL: It will be the same. We license them in the same way even if they were not corporatised.

Mr KNOWLES: Which standards will you adopt, .5 or 2?

Ms CAMPBELL: If the proposal goes ahead; the best that can be achieved after examining all the options, the best that can be achieved is 2 and it depends; and the other point, I may have mislead you earlier, this ammonia level it is not universal across the whole State. Most of the sewage treatment plants don't comply with this standard because they don't have to because they are not discharging into Class P waters, it is only to the extent of discharging into Class P waters. So far as the Water Board is concerned, the only issue will be Picton and what will happen is the EIS will be done and the EPA will make an assessment of what is the best that technology can achieve. We could have, for example, statistical limits; we could say it's okay for the standards to be breached 2 percent or 5 percent of the time but in the rest of the time it has to be less than .5. I think monitoring is sophisticated enough for us to do that.

CHAIRMAN: I think we will ask both of you to come in back close to the table and we will swear in Mr Dean from SHURE also. Some of these questions are getting fragmented, as in the previous case, scatter gun.

Mr KNOWLES: I take offence at that, the relevance on how the EPA licenses the Water Board's various operations Sydney wide and the consistency of those licenses are relevant to what we are trying to do.

CHAIRMAN: I'm sorry, I just meant in relation to the people we have here that they could cover more than one person.

MICHAEL CHARLES DEAN, Secretary of Save Hawkesbury Unique River Environment, Project Officer, Water Quality, of 133 Riverview Avenue, Dangar Island.

CHAIRMAN: Have you anything you want to say to the Committee before question time?

Mr DEAN: I presume you prefer to stop sitting at 12 o'clock?

CHAIRMAN: This thing is not governed by - I can stay here until midnight, I have got no problem. But what happens is various members of the Committee have question time or meetings, something like that and it is always very very difficult so that is why I am trying to get things moving along, not because I want to stifle anything at all. Some members may have to disappear.

Mr DEAN: I am just trying to tailor what I could say to the time you would like to have me before you. This committee has received a submission, it is from Jenny Rowe who is the President of SHURE. I have given my position. I represent SHURE on the Executive Committee of Change which is the Hawkesbury Coalition on the Berowra Waters Catchment Financial Committee and recently on the Scenic Environment Working Party which reviews the Hawkesbury Nepean REP. I won't address all of the points of the submissions. I will respond Mr Chairman to questions.

I would like to tell you very briefly what happened at the Berowra Creek Catchment where that is relevant to what is proposed in this regulation before you. It is always overlooked but when the Water Board installs an STP it makes a trade off. It trades an improvement in local water quality and it degrades regional water quality. This has happened throughout the catchment of the Hawkesbury Nepean system and it is a problem that our group has been dealing with for the last six years. At Berowra Creek now we have serious emissions, red tides which is a kind of algal bloom. It is damaging fisheries and tourism, not to mention the eco-systems. Last year Hornsby Council had to impose a moratorium. For nine months it stopped 400 DAs just to get some action on what was a long running problem.

Berowra Creek already has an advanced tertiary treatment sewage treatment plant facility. It still needs a $15 million fix and this fix is going to occur because of the first ever agreement between the State and Local Government to implement ecologically sustainable development in a catchment of the Hawkesbury Nepean system or really in New South Wales. These kinds of agreements need to be determined for each catchment.

Picton is a much smaller community than Hornsby so the economies of scale for the kinds of conventional sewage treatment plant technology that the Board

likes to install are much worse than they are at Berowra. They work best on the larger scale. So Winmalee which is 300,000 EP final stage. The Board's preferred option for Picton is just too expensive. It is going to cost over $60 million assuming it doesn't change a great deal when we see the updated supplementary EIS which will be No. 3 from the Board. It is going to cost $20,000 per lot for Stage 1 which is an extraordinary sum. It is going to take four years to build, on the information we have been given so far.

When I talk to people in the water treatment industry they can't believe that this is happening. So what SHURE wants to tell you is that this regulation is the wrong way to go.

The regulation has been extended to cover not only Picton but six other waterways I believe. We have looked at the Subordinate Legislation Act and the requirements too. Something we haven't looked at - we do have to consider the Acts which are relevant and that includes the EPA Enabling Legislation which is the Protection of the Environment Administration Act. In that Act is the need to implement ESD and the precautionary principle and they are both framed in non-discretionary terms in that Act. The proposed regulation is not consistent with either of these principles, either of these responsibilities. The EPA has got wide powers to implement ESD but there is little evidence so far it has tried very hard to do that. Neither the Board nor the EPA know what the optimum solution for Picton is and they are even further away from knowing what the optimum solution is for the other six waterways we are talking about.

When we have got a better idea of what the optimum solution might be then perhaps we could make a specific focused change to Schedule 2 of the regulation but quite possibly we may not have to do that. But at this stage the regulation as it stands does not stop anybody from undertaking an EIS for Picton or anywhere else. The evidence for that is that we have had two already. What it does stop - and this is the reason possibly that the amendment has been framed in the way it has - is it stops the Water Board's preferred technology and that technology is failing all over the Hawkesbury Nepean and while we accept that it will work with sufficient capital injection on the larger scale we don't accept that it is going to work on the small scale of Picton and this applies also to the six other communities which are affected by the regulation. These are all quite different waterways from Picton. I believe, SHURE believes that they will probably need different and more specific attention with respect to the regulation.

I have said that this is the wrong way to go and that this amendment to this regulation is premature at best. The Board's solution at Picton will take four years to build. So we are not going to see an improvement in water quality in Picton in that time. But more significantly than that, I know it is a highly

emotive issue, the Project Manager, Picton, cannot give an assurance to SHURE that when the Water Board builds its STP the plant will be an improvement in water quality in the local waterways of Picton. That disturbs us quite a bit. Because we are changing the regulation to improve the quality of the local waterways and the Water Board has not been able to give us that guarantee and that was August.

What the Water Board could do tomorrow at Picton is to start installing demand management hardware and Tim's already mentioned this so I won't go over it in detail but for example if the Water Board installs and retro fit low flow shower heads, high efficiency toilets and tap aerators in the 3,000 allotments, that will give us an immediate improvement in performance of all the on site disposal systems; septic tanks, aerated water treatment and the like, all of which are in use.

Some of the systems, I agree with you, have degraded to the point where they need to be replaced. Even if the Water Board replaces all those systems which are beyond repair, the cost is going to be significantly lower. When we talk about installing this demand management hardware we are talking about less than $1,000 per lot to start with and these are no regrets measures that will save the Water Board money regardless of whether or not it builds its preferred STP in the end. I don't believe it should because I believe the technologies which have been touted as alternative technologies - but they're not really because they have been in use in other places for quite some time would be a preferable solution for small scale effluent treatment problems like Picton.

SHURE put a proposal to the Board which considered the Dowmus composting system, that is an Australian company, together with centralised effluent treatment. If the effluent from the Dowmus systems overflow - this is in the upstream end of the reticulation system - then we are not going to get the ammonia levels that the Water Board is worried about and we are not going to get - I will have to deal with the overflow issue separately because I haven't got it in here but it has been discussed and I think it is important. The centralised effluent treatment system could be any number of things; it could be "Kikluth" reeded technology which has been installed in Ofthreser in West Germany for the last 25 years; it could be a system of just put in by "Aquazon" in Port Macquarie which is a lagoon plus ozonation system. It could be something else. I think the point that is being made is that these companies need to be able to tender to install these processes. With any of these, the effluent, instead of being a problem, becomes a product that the Board or the operator can sell. It can be sold as irrigation water, as industrial process water, as crop fertiliser. You also get, with those, an enhanced wildlife habitat and you reduce extraction of water from the river.

(Short adjournment)

Mr DEAN: I would like to address a couple of issues that relate specifically to the regulation and why we think it is hastily drafted, inappropriate and non-specific and why the Committee should not make this regulation now. We have dealt with the problem of on site disposal systems and the pressing problems to improve water quality systems. The same problem exists everywhere in the Hawkesbury Nepean system where on site disposals are used and I mentioned the problem with the trade off we are experiencing acutely in a number of places in the Hawkesbury Nepean system where we have freed our backyards but lost the river. There is a methodology about using on site disposal systems which has to be addressed. I know there's a great deal of resistance to it and rightly so for anyone who has experienced the old style brick pit septic trickling filter system, some of which still exist in my locality and none of which are working any more because they're full. But workable on site disposal systems exist and they should be used in low density areas because they are going to save us an enormous amount of money and the alternative of centralised treatment is not cost effective in these local areas and it is not going to give us better water quality in the local waterways and this is extremely important before we spend $65 million or more of public money.

A lot of the discussion about the regulation deals with the level of ammonia and it was asked "what levels of ammonia should we be looking at?" The regulation proposes to change the level of ammonia. Ammonia nitrogen is broken down in the treatment process, whether it is biological or biochemical or natural or artificial, into nitrate and other forms of nitrogen and these are plant nutrients and they are taken up by the plants in the system. The plants can be algae in the sewerage system, they can be organisms in the river, if you overload the system with nutrients in the river you get the blooms that we have all been seeing.

The levels that we should be seeing in natural waterways, in a modified eco-system protection scheme which is sub-pristine, range between .8 at 30 degrees C at a high pH up to about 2.5 at zero degrees at a lower pH - this is within the normal pH range in a river. So the figure of 2 we are talking about - when you consider ambient temperatures in waterways in Australia in the Sydney region - is going to be too high most of the time. There aren't any figures that I have got on hand in my mind about the pristine systems but I know that AWT have done monitoring in our area which would give us an idea of what the ammonia nitrate levels are.

Mr RIXON: Would you repeat those figures.

Mr DEAN: The ones I gave you before - they range from .8 ato 30 degrees C at a high pH, but within the range you would see in the river it would be a little higher, down to 2.5 at zero degrees C at a low pH. So the figure of 2 that we're talking about is going to be too high most of the time. When you

consider especially that when we put these systems in, the effluent from the sewage treatment plant often constitutes half, sometimes up to 90 percent of the flow in the natural waterway. So the level of ammonia or any other nutrient or toxicant - and ammonia is a toxicant, not a nutrient - that is coming out of the sewage treatment plant is going to equate with the level of ammonia which you are going to get in the local waterways because of the high proportion of flow that the sewage treatment plant is producing, I can't remember the figures exactly, but I know that Berowra Creek is upwards of 90 percent in low flow conditions. So whatever is coming out of the plant is the waterway with a very small margin and it is low flow conditions where the problem becomes critical because that's when we get the overload of the natural eco-system which gives us the bloom which kills in our estuaries the mussels and the oysters and the prawns and in Picton, of course, we have got fresh water organisms but they can still be killed or otherwise badly affected by too much effluent.

I think the panic about on site disposals that are breaking down and need to be overhauled and replaced, for goodness sake, how many forty year old sewage treatment plants are still running? The EPA rightly point out to a regulatory problem with something which is part way between a diffuse source and a point source but I think if you are going to do a serious cost benefit analysis you have to look at the costs of what the Board is proposing. And it has not gone through and done the sums right through to the stage of the post tertiary treatment level. As has been pointed out tertiary is almost a meaningless term. It simply refers to the number of stages. It has very little to do with the quality of the effluent that is coming out.

For example, at Berowra Creek they have got a tertiary treatment for cutting down levels of total nitrogen. They have got about 25 milligrams a litre which is two and a half times the regulation as it stands which they are proposing to amend. But they are not proposing to change that level. In SHURE's view, the total nitrogen level, if you are going to amend the regulation, for protected waters, should be lowered to 5 rather than 10 as it stands. So if the EPA is going to do a comprehensive systematic specific overhaul of this regulation, SHURE would certainly support it. But we are not interested in seeing the creation of a loop hole which gives us no trade off in improved water quality because we have had an admission from the Board this plant will not give us improved local water quality in Picton. And the reason for that is because they have to take an integrated catchment management approach because we have the problem of nitrates coming from agricultural uses and we have the problem of water extraction. Now if you use the kind of mix of on site disposal plus centralised effluent treatment of a different kind of technology altogether, but one of the kinds that is currently being used in either the Middle East or France or West Germany or parts of the United States, we can then re-use that water much more economically than the technology that the Board has proposed and

we can reduce the amount of nitrates going in for agricultural uses because these waters would supply a degree of fertiliser.

And the Regulations may well need to be adjusted to tailor for this kind of scheme but there is absolutely nothing to be gained now from changing this regulation to give us a loop hole to put through the old technology which isn't working anywhere in the Hawkesbury Nepean system on the admission of the speakers from the EPA and I think it is really important that you consider this. I think it is really important you go back to the EPA, you go back to the Minister, you go back to the Board and you ask them to think again about what they are asking you to do because it doesn't work anywhere. It's not going to work in Picton and it is going to create problems for the other local communities you have been talking about. And I think that is the main issue you have to consider, what is the effect of this regulation going to be; what is it going to cost; what is it going to do for us. And that is the bottom line of the issue.

CHAIRMAN: That sounds pretty reasonable to me. I don't have any great problem with that. To avoid any impression that I am giving that I am trying to kick you out as quickly as possible, I think it is best to truncate our inquiry because I think what you have said is interested and I would like to hear some answers to it too. I think other members of the Committee would and we would proceed to postpone any further hearing until such times as perhaps the EPA has answered your questions, etc. Because that is in effect what you are asking isn't it?

Mr DEAN: It sounds all right to me.

Mr KNOWLES: We have heard evidence from the EPA that they considered options, four of them. We have heard other evidence from the opponents to the scheme that there were other options that they don't believe were considered. I would be interested in hearing formal submissions from the Board to find out what are the alternatives.

CHAIRMAN: What about from Mr Dean?

Mr KNOWLES: Maybe when the transcript is typed up they can be circulated amongst the various people here and give some commentary on the various allegations and assertions about the shortcomings of each of the various players.

CHAIRMAN: What I would like; Mr Dean speaks with great confidence about his subject and I am in a bit of a dilemma because I come from the other side of the ranges where a lot of these things do work but unfortunately you have got four million, five million people here living on this side of the ranges. I'm

not sure how all these systems work. I know they will work out in the scrub where it's all sandy and there is one person to every couple of square miles.

Mr KNOWLES: For what it is worth, the Water Board Inquiry could not agree on almost anything. One thing that we all did agree with which is that the Water Board has historically been locked into a pipes and pumps engineering mentality and I think that is what SHURE is trying to get across to us. There was evidence presented that the Board is trading off and trying to invest and explore new technology. I am just wondering whether it may be worthwhile getting these people to come up with formal commentary on those other alternatives looked at. Maybe the pipe and pump option is the only way to go given the level of sophistication or level of confidence. It may be worthwhile getting that commentary.

CHAIRMAN: You have heard what Mr Knowles said. I agree with that. The transcript will be circulated and then at the next meeting we will be asked to come back again. It won't be next week. Then we break for two weeks, so it is going to be at least three weeks.

Dr KERNOHAN: How long is this going on for? Is this going to turn into a grand inquiry where every environmental group is going to be able to come on?

CHAIRMAN: What we have got, as Craig said, there are all kinds of differing views.

Mr KNOWLES: My view, there were only 350 individual submissions to the Water Board Inquiry on the different options to deal with this sort of thing. I am not wanting to repeat that performance. However, what I wanted is some commentary from these players, particularly on their compliance with our Act and requirements, alternatives and cost benefit relationship of those alternatives. We have been told by other people that they are not satisfied with the work they have done. The EPA has said it has done what it can.

CHAIRMAN: I don't want this to turn into anything other than what we have got here. I think we have enough from both sides of the story, confusion if you like, in the minds of some of the Committee members and myself. I would like to get that resolved along the lines that Craig has talked about.

Dr KERNOHAN: That is what worries me, it is just going to be never ending in terms of people who say they want to have input.

Mr KNOWLES: Is there a formal motion? The EPA has asked to address us briefly.

Ms CAMPBELL: I just wanted to be clear about what it was you wanted me to do. Is it that you want me to respond to what has been said? I can just make a couple of observations now I guess. One is that I think the basic problem with maintaining the system of having septic systems which is basically what you are saying, we can kind of upgrade them but from a regulated point of view.

Mr DEAN: Not "kind of"; I put a proposal forward about what the Board should start doing tomorrow.

Ms CAMPBELL: And it related to individual households; it is not a centralised system.

Mr DEAN: No.

Mr RIXON: Is it possible on the question, through Mr Chairman to any of you - is it possible to send these people a copy of the transcript; they can then reply in writing to any point that they feel has been raised by various other parties here today and we can have those ready for the next meeting. We could have a meeting next week or we could have a meeting in three weeks time. Let me finish by saying if you send us something this high in paperwork I'll throw it in the garbage bin and won't bother reading it; but if you send back something that is brief and short then I would be very interested to receive it. Is it possible to have that done? That is the question I am directing to you.

Mr JEFFRIES: There is no need for the Committee to have another formal hearing; if the EPA responds to each of the matters raised on behalf of SHURE and by Mr Fisher then the Committee can deliberate on those and come to a conclusion.

Ms CAMPBELL: That seems fair.

Mr SPEARS: I understood that the request from Mr Knowles was for the Water Board to make a submission presumably in the same manner the EPA has been asked to.

Mr RIXON: There are five of you here today, that goes to you five.

Mr FISHER: If you have any specific questions that you want to add to those transcripts that would be helpful too because it would direct us to what you want to know basically.

(The Committee adjourned at 12.45 p.m.)