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Appraisal and response to the applications for consent to discharge trade effluent from the Newbury Bypass

Report prepared for

Newbury

October, 1996

Introduction

This report has been produced on behalf of Newbury Friends of the Earth and the Third Battle of Newbury campaign. The Environment Agency should consider this report a FORMAL OBJECTION to the proposed discharges.

Application to discharge 'trade effluent' at a number of sites has been made by Costain Civil Engineering Ltd, produced from dewatering operations on the Newbury bypass construction site. Each of the sites is the location of bridge works where ground must be excavated in order to construct foundations. Each of the applications - 8777, 8778, 8779, 8780 and 8781 - is broadly similar. The only major differences are in the volumes of water discharged.

The text of the report considers all applications together. Where a particular application is considered the reference number is used to identify it.

Content of the applications

We consider that the information supplied with each application does not sufficiently address the problems that the discharges may create. The effects of the abstraction of the groundwater, given the proximity of sensitive aquatic habitats, is also of concern, but little can be done about this given the exemption under the Water Resources Act (WRA) 1991 (with one exception, noted later in the report).

The maps provided with each application, showing the location of the discharge, are in themselves misleading. They show the location of the finished road, but lack information relating to the discharge - for example, they do not show the location of the settling ponds. Given that the location of the discharge is not fixed (it apparently moves between two points), the location of the settling ponds is of interest. A pipe may be mobile, but how do you move a settling lagoon? If they are near to the watercourses themselves, in itself this presents a serious risk of pollution.

No evidence is presented regarding the relationship between the flow of the receiving watercourse and the rate of discharge. Since no evidence is given on the quality of the water discharged, we must consider dilution as the main safeguard against pollution. Looking at all the applications, there is a particular problem with the Pen Wood Stream (8777). This is one of the smallest receiving watercourses, but it has one of the larger discharge flows - 35 l s^{-1} . The nearby River Enborne, which has a greater flow, has much less effluent discharged into it - 10 l s^{-1} .

We would expect, given their experience of other similar sites, that the applicant could present some indication of the quality of the discharged effluent. The quality of the effluent will be related in part to the capacity of the settling lagoons, and the period over which water passes through the lagoon(s). No information is presented about either the design or capacity of the lagoons.

A significant risk, and one which has been a problem on other road schemes and in quarries, is where the lagoon is constructed near the watercourse. Following heavy rain, or where the lagoon is poorly maintained, the wall of the lagoon can break and allow sediment-rich water to escape. No information has been presented on the location of the lagoons, or their design.

The only indication as to how the discharges will be monitored is that 'visual' checks will take place. This assumes two important factors: firstly, that the checks will take place when necessary; secondly, that those conducting the checks will have the necessary skill to determine the presence of pollution.

The declaration in the applications states that none of the List I/List II substances noted in the application form is present in the discharge - but no evidence is given to support this statement. It is also stated that there are no other additives. This seems quite unlikely. For example...

- Additives (for example, PVA) are mixed with the concrete to make it set, or provide certain

engineering properties - these additives will certainly leak/leach as the concrete is poured;

- The concrete foundations will be treated with a sealing compound to prevent the ingress of water - this compound will contain some sort of hydrocarbon or polymer substance;
- It is almost certain that the machinery used in the construction works will leak/spill either fuel or hydraulic fluid. Both of these compounds are damaging to aquatic environments - particularly the hydraulic fluid which contains surfactants and other 'preservative' chemical compounds.

It is inconceivable that the discharge will consist solely of groundwater. The excavation works will provide a natural 'sump' to collect runoff from the surrounding construction site. If the calculations are based solely on the expected groundwater flow into the excavations, not only will the total volume of effluent be underestimated, but the pollution load will be much greater because the runoff will contain more sediment, and possibly carry with it more chemical pollutants from other construction activities. The fact that no allowance has been made for runoff anywhere is extremely alarming, since construction runoff could be particularly damaging to the high quality chalk streams which are receiving effluent. Also, given that construction is over some of the wettest months of the year, runoff could be a significant factor in determining flow.

The US Environmental Protection Agency has a whole programme devoted to the effects of runoff - including construction runoff. This cites a number of studies into the effects of runoff. Standard US environmental assessment manuals quote studies^[1] where it has been shown that sediment runoff from road construction can be as great as 82 te ha⁻¹, or 750 te km⁻¹. This is a significant quantity of sediment to place in sensitive chalk fed watercourses.

Finally, given the negotiations which had taken place between the Highways Agency and the National Rivers Authority/Environment Agency, We would have thought that the applications would have made reference to the relevant parts of the catchment management plans for this area^[2]. For example, table 2 on page 22 of the Second Annual Review states...

"Construction contract has commenced. The Agency stance still maintained on certain issues. Environmental studies of the river corridors have been completed by the Agency. Progress made on changes to bridge designs and this should go a long way to alleviate any direct physical impact on the two river SSSIs. Approach to treatment of runoff, e.g. via reedbeds more appropriate. Results of hydraulic model are awaited before conclusions can be drawn on any strategic scheme/implications"

It is not clear if the term 'runoff' relates to the final or the construction runoff, but we would assume that the necessity to implement reedbed systems to treat the final runoff would mean that special measures are needed to treat the construction runoff.

Nature conservation implications

The Kennet and Lambourn SSSI was confirmed in July this year. Since then the Department of the Environment and English Nature have consulted on the designation of a 'Special Area of Conservation', protected under the EC Habitats Directive, and the Conservation Regulations 1994^[3]. Although there is no absolute protection for SSSIs, SACs have absolute protection from direct damage, or pollution which might cause harm.

The habitat recently listed as a 'potential Special Area of Conservation' in accordance with Article 4 of the EC Habitats Directive (92/43/EEC) is adjacent to the application site near Speen (8780). As such it should be given a greater level of protection than that normally afforded to any other conservation site. Furthermore, under Articles 12 to 15 of the Habitats Directive, measures should be taken to prevent the damage to, the trapping of, or deliberate disturbance to species listed in Annexes II, IV, and V of the Directive. The only instances in which these provisions may be

waived is where the action is permitted within the criteria specified in Article 16 of the Directive, and then the Member State must issue a derogation to allow the activity to proceed.

The provisions of the Habitats Directive have now been enacted in UK law by The Conservation Regulations 1994. In relation to the above, Regulation 49 makes it clear that where works, which are not beneficial to protected species listed in the Directive, are undertaken, then such works must be authorised by the Secretary of State for the Environment. But in the first instance the 'responsible authority' - either English Nature or the Environment Agency - must undertake a full review of the proposed action to determine if it will have a detrimental effect upon listed species. If works are considered necessary, they must then seek guidance from the European Commission, from the Secretary of State, or both.

In this instance, Environment Agency has a *statutory obligation* to ensure that the proposed works - the abstraction of groundwater and the discharge of contaminated water - does not detract from the designation of the Special Area of Conservation, and furthermore, that the works do not damage or disrupt any species listed in Annexes II, IV and V of the Directive. In this case we find it difficult to see how the Environment Agency has discharged these duties in relation to the proposed works. This not only relates to the discharge of effluent, but also the abstraction of water - the exemptions covering abstraction, we believe, do not apply on this particular site because of the proximity to the proposed SAC.

It is clear from Article 16 of the Directive, enacted into UK law by Regulation 49, that the proposed works do not fall into any of the relevant categories. This is because the works are purely for the purposes of the economic development. The Agency therefore have an *obligation* to conduct/request some form of environmental assessment to demonstrate that no species protected within the Directive will be disturbed by the works. This review must also consider some form of risk assessment so as to determine the likelihood of effect and the extent, as well as the simple 'possibility' that some effect could happen. This risk assessment should follow the general guidelines outlined in the Department of the Environment's guidelines^[3].

We would also consider it wise to review the operation of the other discharge sites, and the potential for effect on other species protected under the Directive, in order to come to an opinion whether such works can be allowed to continue within the restrictions imposed by the Directive or the 1994 Regulations.

If it is determined that any discharge of effluent, or the abstraction of water, will have a direct or indirect effect on the proposed SAC, or will harm any protected species, then the Agency is under a legal obligation to take the required action under paragraph 85 of the Conservation Regulations.

Requirement for further investigation

It is clear to us that there is insufficient information on which to determine this application. Before this process can proceed further the following information is needed:

- The sites of the settlement lagoons, their construction and their capacity need to be made clear;
- There needs to be more information on the possible range of contamination that will be present in the effluent. As well as looking at suspended solid concentrations, the presence of other substances should be investigated;
- A detailed monitoring programme must be drawn up to ensure that there is no adverse effect on the aquatic environment from any pollutants present in the effluent;
- As studies of this area are being undertaken by the Agency, the possible impact on wildlife, and in particular species protected under the Habitats Directive, could be investigated. But if there is not sufficient time, the applicant should undertake this work at their own expense.

We do not see how the Agency can act in a competent manner, given the legal obligations that must be satisfied in this matter, unless the above actions are undertaken prior to the determination of the applications.

Conclusion

We are aware that there is evidence that discharge of effluent from some of these sites has already begun, even though the consents have not been issued. If this is shown to be correct then we will take further action to ensure that the Agency takes the necessary action to stop these discharges, or prosecute for a breach of section 85 of the WRA. Likewise, if it can be demonstrated that the Agency has not taken all reasonable steps to meet their relevant legal obligations in this matter, then we may seek to have the Agency's decision investigated or reviewed.

While reviewing these applications, we have seen correspondence from the Environment Agency^[5] claiming that the Agency cannot take any actions in this matter because the site is occupied by a Crown Agency, and that any control is prohibited by section 222(2)(b) of the WRA. This is complete nonsense. Costain are a private company, but in any case, the Highways Agency who awarded them the contract do not themselves have Crown Immunity. Therefore, there is no legal constraint on the Agency's freedom to act in determining these applications.

The letter from Costain^[6] urging speedy processing of the applications has no bearing on this issue. The fact that there is little time is the fault of the applicant, and the Agency should not rush the applications through. As made clear in the Agency's 'Customer Charter'^[7] and sch.10 of the WRA, all applications for the discharge of effluent can be processed over four months. This means that the Agency have until at least mid-December to determine these applications.

There is insufficient information to determine the five applications to discharge effluent. There is no information as to the form of water treatment, other than the statement that settlement lagoons will be used. The applications only relate to groundwater, although there is no conceivable way that surface runoff could be excluded. There is also no realistic appraisal of the pollution content of the effluent, and the monitoring proposed is wholly insufficient given that the receiving waters form part of/the tributaries of a SSSI. The issue of the effect upon the proposed SAC, and the legal implications of damage to the proposed SAC and protected species within the SSSI, has not been addressed at all.

Our recommendation on this issue is as follows...

The necessary information that is lacking from these applications must be demanded from Costain Ltd. If this information is not forthcoming, the applications must be refused. If the information is supplied, then we expect that the applications will be readvertised for public consultation with the missing evidence. If the Agency will not readvertise for general consultation, we expect that those who have made objection will be informed, and given chance to comment on the information before determination is made.

The applications cannot be determined as they presently stand.

References

1. Example quoted, T.M. Burton, R.R.Turner and R.C. Harris, "*The impact of highway construction on a north Florida watershed*", Water Resources Bulletin 12(3):529-538, June 1976.

2. *'River Kennet Catchment Management Plan Final Report'*, April 1994.
'River Kennet Catchment Management Plan Annual Review', June, 1995.
'River Kennet Catchment Management Plan Second Annual Review', July 1996.
3. The Conservation (Natural Habitats &c.) Regulations 1994, SI. 1994/2716.
4. *"A guide to risk assessment and risk management for environmental protection"*, Department of the Environment 1995.
5. Barry Winter, Environment Agency, to Mrs. J. Carter, CPRE. 15/10/96
6. Environment Agency 'Customer Charter', May 1996. Page 8.
7. S.T Scutt, Costain Ltd, to Environment Agency, 14/8/96. This letter was on the public file of applications with the five application forms.

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