Note to the Inspector Regarding Phosphates and the River Avon SAC

The potential effect of sewage discharges upon the River Avon Special Area of Conservation (SAC) is likely to arise in hearings during the course of the Examination in Public, particularly in relation to Warminster (Matter 9(R), Q3 and 14) and Infrastructure (Matter 10, Q55, 56 and 58-61). This is a highly complex, technical issue, and although the council has already provided answers to each of the highlighted questions through its position statements, it was considered that for reasons of clarity and brevity it would aid both the inspector’s understanding of the issue and the efficiency of those hearing sessions if the council were to provide a single concise note explaining the issue and the current solution that has been reached.

The River Avon SAC

The vast majority of the river catchment extends across the southern half of Wiltshire and its watercourses pass through several significant towns and villages including Pewsey, Wilton, Amesbury, Tisbury, Warminster and Salisbury, before flowing onwards into Hampshire to the south. Natural England designated the river as a Site of Special Scientific Interest (SSSI) in 1996, and it was subsequently designated as a SAC by the European Commission as an internationally important example of a chalk river system supporting important riverine habitats and populations of invertebrates and fish (known collectively as ‘qualifying features’ of the site).

Guideline phosphate standards for SAC rivers were agreed between the Environment Agency and Natural England nationally in 2002 based on catchment geology and river size. These guideline standards are not statutory, but provide an agreed threshold derived to assist judging the ecological condition of the river.

Phosphate (referred to hereafter as ‘P’) occurs naturally in all river systems, depending on the physical attributes and processes within the catchment, however it can be elevated unnaturally through either diffuse sources (generally through agriculture, erosion / sedimentation and non-mains sewage treatment) or point sources (usually at sewage treatment works or fish / watercress farms). Elevated Phosphate levels can be damaging to biodiversity through increased algal and bacteria growth, leading to decay and decreased oxygen levels in the water for other biodiversity.

South West Regional Spatial Strategy Habitats Regulations Assessment

In 2007 the Habitats Regulations Assessment (HRA) for the draft South West Regional Spatial Strategy (‘the RSS’) identified that the River Avon SAC was failing the guidelines targets for P levels and that additional development in the catchment could therefore adversely affect the integrity of the site. It concluded that sub-regional strategies should include policy safeguards to ensure that the integrity of the site would be maintained.

Environment Agency’s ‘Review of Consents’

In 2010, the Environment Agency (EA) carried out a HRA of all of its existing abstraction and discharge licences within the River Avon catchment, as competent authority for those consents, to ensure that all consents are Habitats Regulations compliant; this assessment is commonly referred to as the ‘review of consents’ (RPP/23). The EA modelling identified the
potential for the discharge from sewage treatments works (STWs) to cause the river to breach the guidelines targets for P levels, both alone and in combination. As mitigation, upgrades of STWs throughout the River Avon catchment to improve P stripping to ‘best available technology’ was proposed; these upgrades have since been carried out by Wessex Water, reducing the proportion of P loading from point sources by approximately 80% across the catchment. This allowed the review of consents to conclude that the consented discharge (based on headroom capacity) for all STWs would not have an adverse effect upon the integrity of the River Avon SAC, with the exception of Warminster STW where modelled downstream P concentrations would still exceeded the guideline P standard, even after application of best available technology.

Several options were therefore considered to address the Warminster consent including revoking the consent, reducing remaining headroom at the STW, and transferring effluent outside the catchment, however it was considered that the most appropriate course of action would be to maintain the current discharge consent, while addressing diffuse sources of P in the catchment (RPP/23, p22-31); diffuse sources currently account for approximately three quarters of P loading in the catchment. The further required reductions in P are to be achieved through the preparation and implementation of a Nutrient Management Plan for the River Avon SAC catchment.

The local Natural England office initially disagreed with the conclusions of the EA’s Review of Consents HRA. However at a national level, DEFRA accepted its conclusions on the basis that there was no evidence that biological elements of the river were deteriorating as a result of Warminster STW. Therefore it would be:

‘appropriate to use water quality targets within conservation objectives as part of a weight of evidence approach to assessing site condition and that existing methods would continue to apply for the review of consents. However, an exceedance of a nutrient target would not prevent a conclusion of no adverse effect in the absence of supporting biological evidence. Taking this approach should provide a more robust and defensible assessment of the impact of a consent application under consideration’

Wiltshire Core Strategy HRA

The HRA of the Wiltshire Core Strategy (SUS/36) carefully considered the general approach and specific conclusions of the review of consents as the best available scientific evidence, and concurred with its conclusions. The HRA therefore concluded that the Wiltshire Core Strategy would not have an adverse effect upon the integrity of the River Avon SAC provided the proposed development was deliverable within the available headroom of existing discharge consents within the catchment. Wessex Water has confirmed that based on recent modelling, all development within the catchment currently proposed by the Core Strategy could be accommodated within the headroom of existing discharge consents.

Following extensive discussions, Natural England has subsequently agreed with the findings of the Wiltshire Core Strategy HRA on the basis that the Nutrient Management Plan is implemented and the situation continues to be carefully monitored and managed. Given that the housing figures proposed within the Wiltshire Core Strategy are generally a floor, not a ceiling, it was also considered necessary to insert CP69 into the Core Strategy to address
potential future situations where additional headroom is required to accommodate
development. In such situations CP69 would then be used to ensure that new development
would make a proportionate contribution to implementation of the Nutrient Management Plan
to offset any potential increases in P loading, where these might cause the river to fail the
guidelines P targets.

**Nutrient Management Plan**

EA is leading on production of the Nutrient Management Plan and has already identified a
suite of measures to reduce sources of diffuse P loading in the catchment. In addition,
recent research has been commissioned to investigate natural P levels in groundwater
sources within the catchment; this has revealed that the greensand geology in the Avon
catchment creates naturally elevated P levels, therefore the P targets for the River Avon will
be raised to a more appropriate level, bringing much of the river back into favourable
conservation status and making the reductions in P levels required to meet the new targets
much smaller.

The additional research findings are welcome, although it has been extremely complex to
analyse, somewhat delaying the production of the Nutrient Management Plan. The EA now
proposes to produce a first draft of the plan by the end of July 2013 and consult on this
during September before signing off a final draft by the end of 2013. Natural England and
EA have made a strong commitment to work together with Wiltshire Council to find a
strategic solution to this issue (STA/01).