

WaPUG AUTUMN CONFERENCE 1993
WORKSHOP 3
WATER QUALITY MODELLING

Chairmen: Andrew Eadon - Severn Trent Water
 Martin Osborne - Wallingford Software

Both workshops were well attended with lively contributions to the discussions. However both moved towards discussing the regulatory framework within which overflows can be consented, and the implications of this on carrying out water quality modelling. There is a need for the NRA to take a lead here and give some guidance not just on what the consent standards will be, but on how the organisations can collaborate to carry out a modelling study.

Both workshops started with a review of the methods which were currently in use to design overflows. This was almost universally Formula A although with the performance of the overflow checked with a sewer model to show that the continuation flow could be achieved in storm conditions. There was no real feeling as to whether this was producing good designs, but it was the only method which was considered because of NRA requirements.

There were some engineers using other methods such as CARP and QUALSOC, and a handful had access to detailed water quality simulation models.

There was a strong interest in using detailed modelling because of the additional understanding that it would give of the operation of the system and the additional confidence in the results. However there was unlikely to be a move towards this until the NRA started requiring the use of such models.

There was a discussion on what problems were caused by overflow discharges. The most common problem was seen to be aesthetics of gross solids which is not directly addressed by any of the design or assessment techniques. Problems of fish kills were thought to be often due to accidental spills of toxic material rather than to regular discharges from overflows.

There was concern over the cost of carrying out detailed studies, but by using the detailed models with default values to start with the potential savings from complex models could be assessed before spending large amounts of money on data collection and verification. However there was considerable concern over the work involved in using a river model, especially where this might involve consideration of a large range of inputs to the river system from other discharges, separate storm drainage and the natural catchment. The best solution would be for the NRA to have a strategic programme of setting up river water quality models for use for catchment planning purposes. Some regions of the NRA have apparently already started on this.

The message from the workshops was that urban drainage engineers are keen to investigate and solve water quality problems, but they need the NRA to take a lead.