Chelsea Instruments' AQUA*sensor* Monitors Nitrate Levels at Thames Water.

Chelsea Instruments embarked on a long term AQUA*sensor* deployment at Thames Water, Walton, during the summer of 2000. AQUA*sensor* is a compact in-situ Nutrients Monitor available from Chelsea Instruments Ltd capable of detecting Nitrate, Nitrite or Phosphate. It has been developed to address both coastal and inland water monitoring requirements. Its range can be easily configured to cover these diverse environments.

For example, for coastal applications, Nitrate ranges are generally set to either 0 - 35, 0 - 70 or 0 - 140 µM. Within these ranges, the achieved accuracy of the AQUA*sensor* is better than 5%.

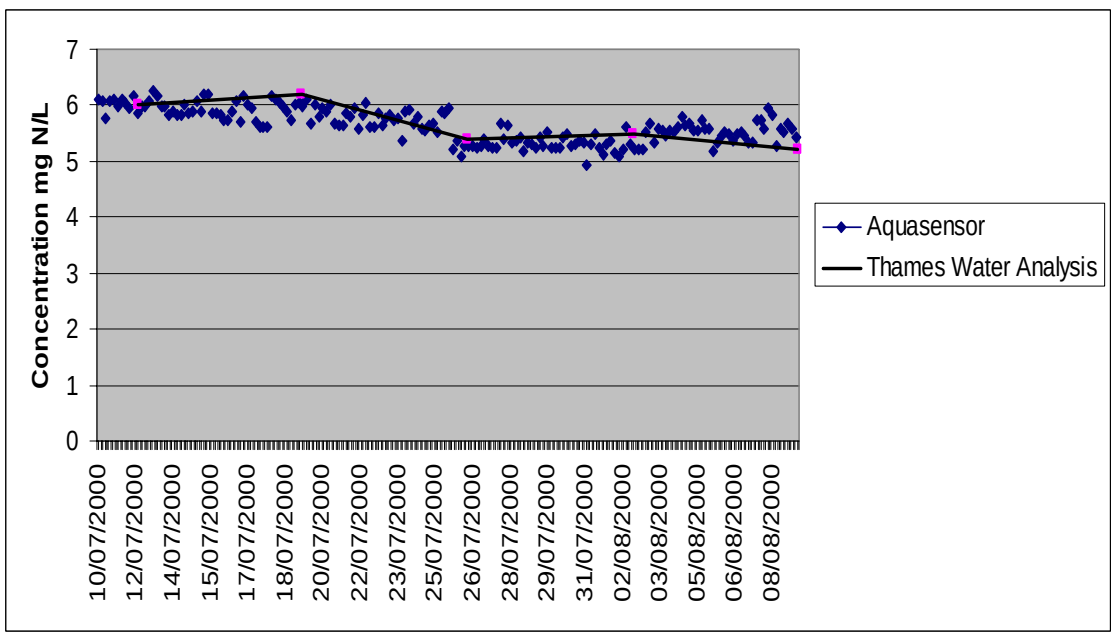
Concentrations of Nitrate can be significantly stronger for inland waters. This became apparent during tests conducted at Thames Water Advanced Treatment Works in Walton on Thames, UK during the summer of 2000. For these tests, AQUA*sensor* was configured to detect Nitrate concentrations up to 1000 µM. To achieve this, a modification was required in order to minimise the sample loop volume.

The AQUA*sensor* was sited within the main works building, taking its sample from a post-processed feed, from one of the points where samples are taken on a regular basis for laboratory analysis. At this stage of the treatment process, the water had been pumped from the reservoir through various treatment stages including ozone and a novel process of Counter Current Dissolved Air Flotation and Filtration CoCoDAFF).

The AQUA*sensor* was pre-programmed to sample every four hours and compared with a standard Nitrate reference solution. All data was stored within the instruments' memory. Over a month's worth of data was collected during this test. The power source was a standard car battery, which lasted the whole period on the single initial charge. The fitted cadmium reduction column showed high efficiency throughout the period. A total of 570 samples and standards were measured.

AQUA*sensor* - Advanced Nutrient & Chemical Monitoring System

The water was sampled and measured independently by Thames Water once a week. This was a much less frequent sampling rate than the AQUA*sensor*. The measured values showed good correlation over the testing period as can be seen in the graph below.



Chelsea Instruments Ltd
55 Central Avenue, West Molesey, Surrey KT8 2QZ, England, Tel: +44 (0)20 8 941 0044, Fax: +44(0)20 8 941 9319
Email:sales@chelsea.co.uk Web Site: www.chelsea.co.uk