

Particulate fingerprinting of water quality in the distribution system

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Abstract

Particles in the distribution system play an important role in the perception? (Not clear what is meant) of drinking water quality, particularly in association with discolouration. In The Netherlands the water quality in the distribution system is traditionally monitored by turbidity measurements. However, turbidity is hard to quantify as it is a complex function of particle suspension, dependent on many factors. In this paper the value of on-line particle counting in determining the particulate volume load fed to and developing in a distribution system is discussed and analysed. On-line particle counters have been used at several locations in Dutch distribution systems to monitor the particulate water quality. Furthermore, particulate material in a transportation system was characterised by using pre-concentration methods allowing organic and inorganic analysis of the particulate material. By using on-line particle counters and pre-concentration methods, it is possible to identify different sources of particles in a distribution network. The overall conclusion of the authors is that on-line particle counters, in combination with pre-concentration methods, are very effective and useful tools in understanding the water quality processes in distribution systems.

Keywords: particles, drinking water, distribution system, sediment deposits