



## Executive Summary

### Introduction and Importance

A considerable part of water quality problems in the network is associated with accumulation of particles in the network. Particles in networks have the following two main origins: (1) the ingress with water from the treatment plant, and (2) the corrosion of unprotected iron mains. Re-suspension of sediments may lead to discoloured water at the consumer's tap, which is a major cause of customer complaints. However, not only the aesthetics of discolouration are of concern, as sediment dispersal is accompanied with a release of microorganisms into the water along with undesirable components, then triggering possible threats to the human health. The formation as well as the resuspension of the deposits are not understood in detail. Therefore, a general approach describing all of the important processes is not available. The aim of WP 5.5 is, based on extensive literature review and investigations in networks and pilot plants, to develop a mathematical approach which describes the relevant processes of deposits behaviour in the network. In the next step the mathematical approach should be linked to a hydraulic model. This model will be used to enable a better understanding of the most important processes and, hence, to open the way for efficient operation and maintenance measures (WP 5.6).

### Approach

The aim of this report is to summarize the actual knowledge about deposits in the network and water quality modelling based on an extensive literature review.

### Results

The processes of sediment formation in the network as well as different methods to investigate the build up of deposits are described. Furthermore, microbiological problems associated with sediments are shown. At last, the actual state of water quality modelling is summarized.

### More information

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