

**Zimoch, I. Monitoring of the Quality of the Water in Water-Pipe Networks: Reliability Interpretation of the Results. *Ochrona Srodowiska* 2009, Vol. 31, No. 4, pp. 51–56.**

**Abstract:** The available state-of-the-art computer techniques offer the possibility of monitoring how the water supply system functions, as well as analyzing the critical elements of the system, such as the quality of the water being supplied. This paper contains a reliability analysis of the functioning of the water quality monitoring process in a large water supply system (using the municipal water supply system of the city of Wroclaw as an example). Assessments were carried out for the following parameters: rate of occurrence of water quality below standard; average duration of the occurrence of up-to-standard and below-standard water quality in the water-pipe network; probability of supplying water of required quality; availability index and efficiency index of supplying water of required quality. The paper also includes the relevant algorithm and computer program ('Jakosc Wody' – Water Quality), the basic analytical tools for examining the reliability of the functioning of water quality monitoring in the water distribution system. It has been demonstrated that the information obtained from monitoring enables a complex assessment of the quality of the services provided by the waterworks, as it incorporates the risk that the admissible values of the water quality parameters can be exceeded.

**Keywords:** Water quality, monitoring, water distribution system, reliability, risk, availability index, efficiency index.