

**Mikosz, J., Mucha, Z. Validation of Design Assumptions for Small Wastewater Treatment Plant Modernization in Line with New Interpretation of Legal Requirements. *Ochrona Srodowiska* 2014, Vol. 36, No. 1, pp. 45–49.**

**Abstract:** In regard to wastewater discharge conditions, nutrient removal is not required for plants of capacities of up to 10,000 resident equivalents according to the current interpretation of legal regulations. European Commission objects to this interpretation and indicates that the above mentioned regulations should refer to agglomeration size rather than to plant capacity. This may result in necessity of urgent modernization of such plants in order to adapt their technologies to the nitrogen and phosphate removal. In the near future this problem may concern several hundred of small and medium size plants in Poland. The article presents the course and the results of the research aimed at design assumption verification for modernization of an example wastewater treatment plant. Computer simulation used during the research allowed both verifying the design assumptions and setting optimal values of plant operating parameters. In addition, the capability to achieve the assumed technological effects for the plant in line with the new interpretation of legal regulations was proved.

**Keywords:** Wastewater treatment, effluent quality, nutrients, computer simulation.