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Abstract: An analysis of influence of urban wastewater from Sitkowka Wastewater Treatment Plant in Kielce on water quality and trophic state of the Bobrza river was performed in the period before and after the plant modernization. The wastewater treatment plant effectiveness analysis was determined in 2006 and 2012 (prior to modernization and after modernization, respectively) in terms of basic pollution indicators and with the main focus on biogenic matter. The trophic state of the river was assessed at cross-sections above and below the wastewater discharge point, before and after modernization, on the basis of an integral criterion, index of trophic state (ITS). The research results showed a positive effect of wastewater treatment plant modernization on the recipient water quality. Reduction of risk of eutrophication occurring before the modernization was demonstrated as well as the improvement from eutrophic to meso-eutrophic state.

Keywords: River water, wastewater treatment, eutrophication, biogenic matter, trophic index.