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Experimental Study on the Evolution of River Water Quality and Riverbank Percolation Water Quality under Reclaimed Water Replenishment

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Due to the intensified influence of human activities, Yongding river presents a sharp decrease in water quantity and a trend of continuous deterioration of water environment, and the ecological environment is seriously damaged. Under this background, Yongding river ecological reconstruction project needs to be carried out urgently, and ecological water replenishment mode needs to be determined urgently. In order to explore the influence of multi-water source ecological replenishment mode on the evolution of river water quality and riverbank percolation water quality, this study conducted a simulation experiment to explore the influence of flow rate, temperature and soil percolation on reclaimed water replenishment water quality. The results show that the increase of flow velocity is beneficial to the degradation of pollutants. Compared with high temperature, the degradation capacity of pollutants at low temperature is significantly better than that at high temperature, indicating that low temperature is beneficial to the improvement of reclaimed water quality to some extent. Some water quality indexes of riverbank leachate improved to some extent, but the water passing through the soil was slightly eutrophication due to the aggregation and adsorption of river bottom sediments. The final results show that the velocity of flow has the greatest influence on the quality index of regenerated water.