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ENHANCING DEWATERING CAPACITY OF SLUDGE RESULTED FROM THE MICRO-POLLUTED WATER STRENGTHENED PRETREATMENT BY POWDERED ZEOLITE

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Abstract

Ammonia pollution occurs frequently in urban water networks, which threatens the safety of water supply systems. Zeolite can be used for the removal of ammonium in the pretreatment of raw water for its peculiar adsorptive property to ammonium, but a large amount of sludge from this measure could be a significant pollution source. In this work, the dewatering performance of precipitated sludge from the pretreatment of micro-polluted raw water was studied. Batch experiments of the simulated coagulation-sedimentation process were carried out, using powdered zeolite for pretreatment, in doses ranging between 0.20 - 0.65 g/L. It was found that all the specific resistances to sludge filtration were less than 0.50×10^9 s²/g, with descending trends as the powdered zeolite dosage increased. The results show that the sludge resulted from the powdered zeolite strengthened coagulation-sedimentation technology had improved dewatering performance and this facilitates its disposal.

Key words: dewatering performance, filtration, micro-polluted raw water, powdered zeolite, pretreatment, sludge

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