

Improving the Residence Time of a Rectangular Contact Tank by Varying the Geometry Using Numerical Modeling

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Abstract : This research aims at the numerical modeling of a rectangular contact tank in order to improve the hydrodynamic behavior and the retention time of the water to be treated with the disinfecting agent. The methodology to be followed includes a hydraulic analysis of the tank to observe the fluid velocities, which will allow evidence of low-speed areas that may generate pathogenic agent incubation or high-velocity areas, which may decrease the optimal contact time between the disinfecting agent and the microorganisms to be eliminated. Based on the results of the numerical model, the efficiency of the tank under the geometric and hydraulic conditions considered will be analyzed. This would allow the performance of the tank to be improved before starting a construction process, thus avoiding unnecessary costs.

Keywords : contact tank, numerical models, hydrodynamic modeling, residence time

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