

PRASERT POUVĀRANUKOAH : CONTROL PARAMETERS OF RAPID MIXING IN A
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This reserch was intended to study the control parameters of rapid mixing in a vertical pipe which effected the turbidity removal of raw water. The galvanized steel pipe was used as the rapid mixer and operated on a continuous flow process. Raw water with approximately 50 NTU turbidity was synthesized from kaolinite clay. The control parameters studied were velocity gradient of rapid mixing, G detention time of rapid mixing, T and alum concentration, C . The range of G , T and C varied from 295 to 3050 sec^{-1} , 0.6 to 30 sec and 5 to 30 mg/l, respectively.

The experimental results revealed that the efficiency of turbidity removal depended on G , T and C . The velocity gradient which gave maximum efficienoy for turbidity removal, G^* varied from 795 to 2180 sec^{-1} . The values of G^* didn't depend on T and C . The detention time which gave maximum efficiency for turbidity removal, T^* varied from 0.75 to 24 sec. The values of T^* depended on G and C . The alum concentration which gave maximum efficiency for turbidity removal, C^* varied from 15 to 30 mg/l. The values of C^* didn't depend on G and T . Inaddition, the relationship between G , T^* and C can be represented in the empirical equation as $GT^* C^{0.68} = 2.9 \times 10^4$.