

Model Pengendalian Sedimentasi Waduk Mrica Dengan Fluidisasi

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Abstract	<p>Sediment rate of Mrica reservoir is much faster than its early design by which it causes life time service of Mrica reservoir becoming shorter than previous assumption. Sediment control has been being operated by flushing, but it seems less optimal. This research aims to develop both laboratory models of fluidization and fluidizer systems for controlling sedimentation in Mrica reservoir. This research was carried out to experiment model in a laboratory regarding effectiveness of fluidization system especially to support sediment flushing. Sample sediment tested was from Mrica reservoir bed. There were two models including a flushing model alone and a flushing model assisted by a fluidizer pipe. Experiment was conducted in various discharges, sediment depths, and pipe pressures. The research results show that sediment category in Mrica reservoir is cohesive material consisting around 80% of medium to coarse silt. Compared to the flushing mechanism alone, the combination of flushing and fluidization can increase the volume of sediment removal by 67.54 %, 67.88 %, and 71.26 % for the discharges of 0.123 litre/sec, 0.185 litre/sec, and 0.369 litre/sec respectively. The combination of flushing and fluidization is also able to improve model efficiency by around 4.38 %, 4.54 %, and 5.07 % for the same variation of discharges.</p>
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