

Boonjongrak Jewtan 2009: The Efficiency of Rock Check Dam in Municipal Domestic Wastewater Treatment at Huai Yot Sub-district, Huai Yot District, Trang Province. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Associate Professor Bongotrat Pitiyont, Ph.D. 143 pages.

The domestic wastewater treatment efficiency using rock check dams was performed at Huai Yot Sub-district, Huai Yot district, Trang Province. The preliminary experiments on natural wastewater treatment using three rock check dams with different slopes 1:2, 1:4 and 1:6 (vertical: horizontal) were evaluated and compared to identify the most suitable slope. The results showed that the rock check dam with 1:2 slope gave the maximum percentage removal of  $31.7 \pm 7.6$  and  $43.1 \pm 6.8$  for BOD and COD on 2<sup>nd</sup> day and 3<sup>rd</sup> day, respectively. Consequently three dams at the 1:2 slope were connected in series with an interval of 5 meters in order to achieve higher effectiveness. Three units were constructed to treat domestic wastewater of three different sources for 8 weeks. The results showed no statistical significant difference in BOD removal in all treatments ( $p < 0.05$ ) with the maximum reduction at 2<sup>nd</sup> week. The efficiency of BOD removal was 92.0 41.2 and 65.5 respectively. Average efficiency of BOD removal in each dam was 36.8 38.7 and 28.8, respectively. From the study, the rock check dam was able to treat domestic wastewater via the small river but it should consider with other factors which effect the efficiency of rock check dams such as the obstruction from suspended solid, organic loading and hydraulic retention time etc.

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