

SOMSAK INTRAKAROONVATE : REMOVAL OF ARSENIC IN WATER BY COAGULATION
PROCESS FOR RURAL AREAS. THESIS ADVISOR : ASSIS. PROF. SUTHIRAK
SUJARITTANONTA, Ph.D. 108 pp.

This study was concerned with the design of coagulation process for rural areas and its efficiency. The comparison between the coagulation process for rural areas, jar test was investigated by batch experiment. Alum and Calcium hydroxide were used as coagulants. There were two kinds of raw water, first, was raw water from Ronphiboon District, Nakornsri Thammaraj Province and second, was synthetic water prepared by dissolving Sodium arsenate with tap water to be concentration of arsenic at 4.5 and 1.2 mg/l. Alum and Calcium hydroxide were varied concentration between 20-160 mg/l. in pH range 6.6-6.9 and between 10-400 mg/l. in pH range 9.1-11.4 respectively.

It was found that the efficiency of arsenic removal is more than 90% when used Alum hydroxide over 120 mg/l. at the optimum pH 6.6-6.9 and the efficiency of arsenic removal by using Calcium hydroxide is more than 78% at concentration over 300 mg/l. and the optimum pH 11.1-11.4. There are found, however, filtered by slow sand filter with overflow rate $0.3 \text{ m}^3/\text{m}^2/\text{hr.}$ can increased only few efficiency and short filter run with not more than 1,050 liters.

The results of the study shows that the efficiency between coagulation process for rural areas and jar test are not different.