

CHAPTER V

CONCLUSIONS



The major objectives of this study were to remove hydrophilic and hydrophobic dissolved organic matters (DOM) in Aung-Keaw Reservoir, Mae-Kuang Reservoir, and Mae-Sa River by alum coagulation to determine the THMFP created from hydrophilic and hydrophobic DOM and to study the reduction of THMFP resulting from the removal of hydrophilic and hydrophobic DOM. Based on the experimental results, the following conclusion could be drawn.

1. Hydrophobic fractions, in terms of DOC concentration, in raw water from Aung-Keaw Reservoir, Mae-Kuang Reservoir, and Mae-Sa River were higher than that of hydrophilic fractions. In case of coagulated water at optimal condition, the percentage reductions of hydrophobic fractions from all water sources were higher than those of hydrophilic fractions.

2. The optimal condition for removing DOM surrogate parameters for water from Aung-Keaw Reservoir, Mae-Kuang Reservoir, and Mae-Sa River were observed at a pH value of 5.5, 6.0, and 6.0, respectively and an alum dosage of 60, 40, and 40 mg/L, respectively.

3. THMFP of raw waters from Aung-Keaw Reservoir, Mae-Kuang Reservoir, and Mae Sa River was slightly higher than THMs standard of 80.0 $\mu\text{g/L}$ in drinking water. (USEPA,1998). Alum coagulation at optimal condition could be reduced THMFP in water from Aung-Keaw Reservoir and Mae-Kuang Reservoir. However, the THMFP in coagulated water in such water were higher than THMs standard US.EPA except coagulated water from Mae-Sa River.

4. EEM technique could be applied for preliminary classified the DOM fractions in water according to their peak position and fluorescent intensities.

5. UV-254 was the suitable DOM surrogate parameter that could be used to describe the quantity of THMFP in raw water, coagulated water, and their fractionated water from Aung-Keaw Reservoir, Mae-Kuang Reservoir, and Mae-Sa River.