CHAPTER 4
CONCLUSION

Investigation of phenol contents at various sites and times indicated that there was significant phenol pollution found in the domestic area but not found in selected industrial wastewaters. The phenol contents in the water samples indicated relationship between the concentrations and the community activities nearby the sites where the samples were taken. The phenol contents were also related to the stream current. However many other processes such as bacterial degradation and may have caused the instability of phenol contents found. The phenol produced by natural process as shown by the site of DS was very low . The sites which are well known as the polluted ones namely Mae Kha canal, Ra Kang bridge, Chao Tung restaurant, Hua Rin and Wong Wan were found for high phenol contents. The waterbodies of these sites could be considered as phenol polluted area according to the standard value of surface water announced by the Office of National Environmental Board (ONEB)[57].(Appendix 3.2) However effects of seasonal changing towards phenol contents were not clear in this investigation due to the unusual longer period of rainy season. Data for phenol contents in water in Chiang Mai city area are still needed for more monitoring of the baseline data.

Three different techniques employed for phenol studies have been investigated. Conventional spectrophotometry is the common method while the FIA procedure provides more sample through puts. They are both based on the same reaction principle. The two techniques are suitable for screening test of phenol contents in water. HPLC is used for individual phenolic compounds. Additional confirmation analyses such as wavelength ratio, spiking technique or GC-MS techniques are needed. For this survey analysis of phenolic compounds, it is apparent from the data

represented in this work that the most accurate way of identifying components is the use of GC-MS to view as unporturbed a sample as possible. Preconcentration of the water samples using SPE increases the sensitivity of the HPLC determination of the phenolic compound by 250 times.