

## CHAPTER V

### CONCLUSION

Water samples from Bangkok Metropolitan Administration were collected to analysed for halogenated hydrocarbon pollutants and correlation between chlorine residual, pH, light intensity, temperature and chloroform occurrence was made. The results are described as follows :

1. According to the water quality standard for swimming pool(chlorine residual and pH inparticular), there were only 8.33% up to the standard of chlorine residual and 69.44% respectively.
2. Chloroform was found in all of samples and its concentration was fluctuated in the range of 2 - 530 ppb.
3. Carbon tetrachloride was found in fifteen samples and its concentration was between 0.19-0.49 ppb.
4. There was no statistically significant difference between chloroform level in shallow area and deep area.
5. There was significant diffeence of chloroform level in the water between 20 cm and 60 cm depth of the four selected swimming pools( $p=0.015$ ).
6. There was no significant correlation between factors(chlorine, temperature and pH value) and chloroform levels in swimming pool.
7. The consistent high peak of tetrachloroethane was noticed in all the water samples.

It can be concluded from the study that concentration of chloroform found in swimming pool water were varied and the high concentration of chloroform would have the affect on the people who used the swimming pools, especially, the children and the divers.

The result of concentration of chloroform from the study found to be higher than the standard level, it believed that the chlorine was added in excessive level and this would conform to the law which prohibited adding chlorine in swimming pool while users are in swimming pool. Therefore, the standard of quality of water used in swimming pool must improved in accordance with the real situation or the techniques used in elimination the germs must be changed for the people who used the swimming pool.

### **Problem and Obstructions**

In this study, the relation between factors affecting the occurrence of halogenated hydrocarbon(mainly chloroform) and their level cannot be concluded because there are some factors that out of controlled and some factors which were not studied. Futuremore, duration of sample collection, the weather was varied. The sunray was fluctuated during a day, It may affect in this study.

### **Recommendations for Future Studies.**

In order to repeat another studies similar to this study, the recommendations are given as follows :

1. Concentration of organic precursors and tetrachloroethane concentration should be also considered.
2. Determination of halogenated hydrocarbon in air sample should be analysed.
3. Comparison of chloroform level between indoor and outdoor pool.