

THE INVESTIGATION OF WATER QUALITY INDEX (WQI) AND TOTAL COLIFORM BACTERIA IN WATER COOLERS WATER FROM VARIOUS LOCATIONS IN FACULTY OF APPLIED SCIENCES, UiTM SHAH ALAM



**Final Year Project Report Submitted in Partial Fulfillment of the
Requirements for the Degree of Bachelor of Sciences (Hons.) Chemistry
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

NOVEMBER 2009

ACKNOWLEDGEMENTS

“In the name of God, the most gracious, the most compassionate”

Initially I would like to use this opportunity to express my gratitude to His Divine and Grace for giving me strength and perseverance to overcome all the obstacles and finish up my reports.

A very special thanks and appreciation to my supervisor, Pn. Nesamalar Kantasamy for being the most understanding, helpful, and patient lecturer I have come to know. I would like to express my deep gratitude to her for her valuable time, guidance, and encouragement throughout the course of this research.

Not forgetting my lovely family that always by my side to support me all the way. Finally, I wish to extend my heartfelt thanks to all environmental laboratories technicians for their timely support during my survey.

Last but not least, I also owes special thanks to my friends, who have always been there for me and extended every possible support during this research.

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ABSTRACT

THE INVESTIGATION OF WATER QUALITY INDEX (WQI) AND TOTAL COLIFORM BACTERIA IN WATER COOLERS WATER FROM VARIOUS LOCATIONS IN FACULTY OF APPLIED SCIENCES, UiTM SHAH ALAM

A study of water quality and bacteria analysis of water cooler water was carried out from various locations in faculty of Applied Sciences, UiTM Shah Alam. Water quality index was determined by specific parameters such as BOD, COD, DO, NH₃-N, TSS, and pH. Results show, according to Interim National Water Quality Standards for Malaysia (INWQS), all of the water coolers samples are in Class II, indicating that conventional treatment is needed before drinking. However, all the samples are above 80 which can be considered as clean. Total Coliform bacteria were also found in all the samples but comparing with Interim National Water Quality Standards for Malaysia (INWQS), the samples will be considered as in Class I because the numbers of bacteria colonies is below 100/colonies/100mL. However, Ministry of Health Drinking Water Standards stated that drinking waters should not contain above 10/100mL colonies of bacteria. In conclusion of this study indicates in terms of total coliform bacteria content in the water coolers water from the faculty of Applied Sciences, UiTM is safe to be consumed as drinking water. However, some precautions should be exercised before drinking if we take WQI and class of water into consideration.

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CHAPTER 1

INTRODUCTION

1.1 Water

Water is a common chemical substance that is essential for the survival of all known forms of life. In typical usage, water refers only to its liquid form or state, but the substance also has a solid and gaseous form. Water covers 71% of the Earth's surface, mostly in oceans and other large water bodies, with 1.6% of water below ground in aquifers and 0.001% in the air as vapor, clouds, and precipitation.

The human body is anywhere from 55% to 78% water depending on body size. To function properly, the body requires between one and seven liters of water per day to avoid dehydration; the precise amount depends on the level of activity, temperature, humidity, and other factors. Most of this is ingested through foods or beverages other than drinking pure water. It is not clear how much water intake is needed by healthy people, though most advocates agree that 6–7 glasses of water (approximately 2 liters) daily is the minimum to maintain proper hydration.