

UNIVERSITI TEKNOLOGI MARA

**RECREATIONAL WATER QUALITY ASSESSMENT AT
SELECTED WATERFALLS IN SELANGOR**

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**Project paper submitted in partial fulfillment of the requirements
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Declaration by Student

Project entitled Water Quality Assessment in Selected Waterfalls is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mr. Ahmad Razali Bin Ishak as Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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Bismillahirrahmanirrahim. In the name of Allah, The Most Gracious, The Most merciful

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Abstract

RECREATIONAL WATER QUALITY ASSESSMENT AT SELECTED WATERFALLS IN SELANGOR

Abdul Raof Bin Mohd Ali

According to the World Health Organization (WHO) 2003, recreational water activities can have substantial benefits to health and well-being. Swimming pools, beaches, lakes, rivers and spas provide environments for rest and relaxation, physical activity, exercise, pleasure and fun. Yet they also present risks to health. Polluted and unsafe recreational waters can lead to infections, exposure to chemicals, injuries and death. Study locations were selected waterfalls throughout Selangor Darul Ehsan. The study design is cross sectional study. Sampling data collection is according to American Public Health Association (APHA) method. A statistical analysis that is statistical package for the social science (SPSS) version 17 was used in the study. The result for physical parameters found out that only two parameters exceed the standards which are dissolved oxygen and biological oxygen demand with readings of 2.62mg/L and 5.67mg/L. For biological no parameters exceed standard and chemical parameters the exceed readings are boron (1.64mg/L), manganese (2.08mg/L), cadmium (0.021mg/L) and barium (7.96mg/L). Comparison between weekdays and weekends found out that total dissolved solid (18.2mg/L), conductivity (33.8mg/L), salinity (0.12mg/L), suspended solid (16.33mg/L) and ph (8.31) for physical parameters higher during weekend. For biological parameters, total coliform is higher during weekends (1754.98 counts). While Chromium (0.072mg/L), Nickel (0.027mg/L), Zinc (0.29mg/L), Nitrogen (0.10m/L), Barium (9.53mg/L) and Fluoride (0.33mg/L) for chemical parameters. Comparisons between waterfalls found out that Sungai Tua is the most contaminated streams between the five selected waterfalls which further proved with calculation of water quality index (WQI) where Sungai Tua WQI is 67.39 (slightly polluted). Health risk assessment found out that it indicates that there is likely potential adverse health effect that is associated with the exposure of the chemicals in recreational water ($HI > 1$). The recreational water quality is good on weekdays when compared to weekends, suggesting that the water quality is poor on weekends. Health risk assessment result it indicates that there is likely potential adverse health effect that is associated with the exposure of the chemicals in recreational water.

Keywords: recreational water, weekend/weekdays, water quality index, health risk assessment