

UNIVERSITI TEKNOLOGI MARA

**DETERMINATION OF ALUMINIUM AND MANGANESE
CONCENTRATION AND HEATH RISK ASSESSMENT
IN RETICULATION SYSTEM AT SUNGAI BUAYA
WATER TREATMENT PLANT, HULU SELANGOR.**

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**Project paper submitted in partial fulfilment of the requirements
for the degree of
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Declaration by Student

Project entitled Determination of Aluminium and Manganese Concentration and Health Risk Assessment in Reticulation System at Sungai Buaya Water Treatment Plant, Hulu Selangor 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 Madam Nadiatul Syima binti Mohd Shahid as Project Supervisor and Tuan Haji Hasyim bin Ahmad as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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TABLE OF CONTENTS

TITLE PAGE	Not Paginated
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF APPENDICES	viii
LIST OF ABBREVIATION	ix
ABSTRACT	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background Information	1
1.2 Problem Statement	3
1.3 Study Objectives	6
1.3.1 General Objective	6
1.3.2 Specific Objectives	6
1.4 Study Hypothesis	6
1.5 Conceptual Framework	7
CHAPTER TWO: LITERATURE REVIEW	8
2.1 Aluminium	8
2.1.1 Uses of Aluminum	8
2.1.2 Aluminum in Environment	9
2.1.3 Health Effect	10
2.1.4 Dementia Disease Cause by Aluminium	13
2.2 Other Parameter Selected	14
2.2.1 Manganese	15
2.2.2 Health Effect	15
2.2.3 Short Term Exposure	17
2.2.4 pH	18
2.2.5 Turbidity	18
2.2.6 Free Chlorine	19

Abstract

Determination of Aluminium and Manganese Concentration and Health Risk Assessment in Reticulation System at Sungai Buaya Water Treatment Plant, Hulu Selangor.

Rozahan Bin Haji Rosely

A study on non-compliance of heavy metal Aluminium (Al) content in the treated water supplied by the Sungai Buaya water treatment plant in 2011 are quite disturbing. This is because Aluminium if used or acquired in excess can contribute to health effects such as neurological effects, mental disorders, fatigue, muscle weakness, mild pain and so forth. A study was conducted to determine the concentrations of Aluminium and health risk assessment in the reticulation system at Sungai Buaya water treatment plant Hulu Selangor, and also analyzes other parameters such as residual chlorine, pH, colour, turbidity and heavy metals, namely Manganese (Mg) in the raw water and treated water. Sampling locations are in the raw water (Sungai Darah), plant (TPO) and (SRO), which is consists of home residents, mosques and village clinics. Number of samples is five raw water samples, five samples of treated plants (TPO) and five samples (SRO) for a total of 15 samples for each time of sampling. Sampling was carried out 3 times with a total sample of 45 samples. Analysis of in-situ readings done in the field of chlorine residual, pH, turbidity, and colour, while the analysis of heavy metals, namely Aluminium and Manganese carried out in Universiti Teknologi Mara (UiTM) Puncak Alam water laboratory. Results received are observed for all samples taken when compared with drinking water quality standards. No correlation between the concentration of Aluminium and Manganese health effects and hazard index shows a value less than 1, meaning that no potential chronic effects occur.