

**THE EFFECT OF LEACHATE FROM LANDFILL IN THE
EUTROPHICATION OF A RIVER**

PREPARED BY

HALIZA ABD AZIZ

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Haliza Abd. Aziz

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ABSTRACT

An experimental study was conducted on a river beside a landfill. The purpose of the study is to investigate the effect of leachate from the landfill in the eutrophication of a river. The landfill site is at Batu 10, Jalan Bukit Kemuning, Kelang and the affected river concern is the Klang river.

The importance of the study is due to the following reasons:

- i) Current and global issues, as river pollution and garbage disposal are environmental problems that should be given top priorities.
- ii) Landfill leachate has a complex characteristics which poses a threat to the environment and is a potential hazard for human health if it is not properly control.
- iii) The effect of eutrophication to rivers could cause a lot of problems to the water body ecosystem and effect the vital uses of water.

From the analysis results, it was found that the water samples taken from both upstream and downstream stations, contained high level of nitrates and phosphorus, which could stimulate the growth of algae. This shows that the Kelang River did experienced the eutrophication process but since the size of the river is large and the water is flowing, eutrophication did not effect it very severely.

The present analysis results have been compared to the previous data, taken from the

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1.1 Introduction

In Malaysia, landfill is the most common method of waste disposal. However, very few practise the engineering standards of sanitary landfilling and in most cases it is usually crude or open dumping. Almost all local authorities know how to design, construct and operate sanitary landfills and in fact there is "Recommended Code of Practice for Landfill Development and Management". Unfortunately, in most cases, sanitary landfills do not exist due to several reasons and limitations such as the difficulties in getting state land or non availability of suitable and sizeable landfill sites, the short life span of small landfills to justify the relatively high construction cost, lack of fund and lack of expertise and priority in public health engineering and environmental control.⁹

The landfill site in Batu 10, Jalan Bukit Kemuning, Kelang, which is under the supervision of the Majlis Perbandaran Shah Alam (MPSA), has been in operation since December, 1989. The landfill size is about twelve (12) acres. Everyday the landfill site receive 300 tons of wastes, comprising of industrial, bulk and domestic waste. About 200 lorries per day will delivered the wastes to the landfill site. The landfill site operates from 8.00 a.m. till 4.30 p.m. while the workers will stopped work at 6.30 p.m.

In 1994, the landfill site was full of wastes and there was proposal to locate a new disposal site. Jabatan Parit dan Saliran (JPS) had ask MPSA to close the site. At present JPS is now in the process of widening the Klang river. Looking at the