

**DETERMINATION
OF
NON-REVENUE WATER LEAKAGE CONTROL
AND
PRACTICE IN SHAH ALAM**

by

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NOTE:

The language used in this dissertation is an American English.

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SYNOPSIS

For the increasing demand of water, coupled with the increasing cost of producing treated water has made it mandatory for water authorities to put greater emphasis on the control of water wastage. In view of these, several water authorities have initiated leakage control projects, the Telok Intan Leakage Control Project and the Development and Implementation on Non-Revenue Water (NRW) Control in Petaling Jaya. The findings and experiences from these projects can serve as guidelines for similar programs on a statewide or nationwide scale.

This dissertation aims at quantifying the NRW components in Shah Alam and recommending the corresponding optimum policies for controlling them. The studies cover four zones in Shah Alam. They are :

1. Zone 1 - Section 2
2. Zone 2 - Section 4
3. Zone 3 - Section 17
4. Zone 4 - Section 18

From the findings , a listing of the areas in order of priority for further action can be made. It will show areas having bad NRW situations and hence needing more attention. It is hope that the findings of this project can serve as a reference for Jabatan Bekalan Air Pantai Bahru (JBAPB) in there proposed statewide NRW control program.

CHAPTER 1

INTRODUCTION

1.1 GENERAL

Non-Revenue Water (NRW) is part of water, after having been treated and distributed, produces no potential revenue for the water supply authorities. The main component of NRW are leakage in the distribution system and under recording by meters. A developing concern over the cost of NRW or unaccounted for water has motivated utilities worldwide to implement new programs to overcome the problems.

A previous estimate has shown that the average NRW level in this country is about 43 percent (JKR and Bina Runding, 1988). In Malaysia, this problem has not received appropriate attention until in recent years. As a result, large sums of money that should be gained in the form of revenue from water are lost. Authorities can no longer tolerate the inefficiencies of water distribution systems and the resulting loss of revenue associated with the underground leakage, inaccurate meter and unauthorized usage. Major areas of water loss that occur in all authorities are :

- a. System leakage
(reservoir leakage, trunk main leakage, distribution leakage)
- b. Meter reading and billing errors
- c. Inaccurate meters
- d. Hydrant usage/fire fighting and theft
- e. Unmetered connection
- f. Improper system controls

The expenses of developing new sources, transmission lines, treatment and distribution system expansion plus the impact of water conservation makes water system efficiency extremely critical. However, this paper will emphasis on the system distribution leakage in selected zones in Shah Alam.