



# **INDUSTRIAL LIQUID WASTE DISPOSAL STUDY**

**MOHD TAUFIQ B KHALIL  
(2000338686)**

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**Faculty of Mechanical Engineering  
Universiti Teknologi MARA (UiTM)**

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## ABSTRACT

The project is the studied of the liquid waste disposal that is being practiced in Malaysia. For the available time of the project, we concentrate on two types of liquid wastes that are used motor oil and used cooking oil. They are classified under Types 'A' waste (Mineral Oils Waste) based on Akta Kualiti Alam Sekeliling 1974 (Akta 127) and (organic oil and oil waste) based on and Environmental Protection Agency (1990) 40 Code of Federal Regulation, Washington D.C.

We have collected the information through industrial visits, referred books, journals, and Department of Environment Malaysia (DOE) annual reports. We also personally interviewed DOE representative.

From this information, we understand that the mineral oil wastes are recycled by sedimentation and filtration. Sedimentation is the physical treatment applied to used motor oils at the first stage. In this process, the sludge is separated from sludgy oils. After that, some of the free sludge oil is directly used by the licence incinerator operator such as cement industry and steel manufacturing industry. The remaining free sludge oil is applied re-refining process and used as low grade motor oil lubricant.

Meanwhile the typical physical treatment to the used cooking oil is by filtration. After that, the sludge directly sent to Waste Management Centre (WMC), Kualiti Alam Sdn. Bhd. for disposal. The filtered oil is processed through whitening process so that it can be re-used again. This "whitening process" is the process that is the colour changer from dark dirty to pure virgin oils.

Incineration is the best ways to dispose because of its high carbon content and provide more heat. The availability of these wastes requires more incinerators.

Finally we concluded that the disposed process of the mineral oil waste is well treated and controlled. The present acts are enough for controlling the disposal.

## TABLE OF CONTENTS

	<b>CONTENTS</b>	<b>PAGE</b>
	ACKNOWLEDGEMENT	i
	ABSTRACT	ii
	TABLE OF CONTENTS	iii
	LIST OF TABLES	vi
	LIST OF FIGURES	vii
	LIST OF ABBREVIATIONS	viii
<b>CHAPTER I</b>	<b>INTRODUCTION</b>	
1.0	Introduction	1
1.1	Definition of Waste	2
1.2	Procedure of Waste Classification	2
1.2.1	Atomic Absorption Spectrometer	3
1.2.2	Bomb Calorimeter Test	3
1.2.3	Toxicity Characteristic Leaching Procedure	4
1.3	Classification of Waste	5
1.3.1	EPA Classification	5
1.3.1.1	Types of Waste that been Established	6

## CHAPTER I

### INTRODUCTION

#### 1.0 Introduction

Waste materials are inevitably generated during the manufacture of any product. The management of this waste is of paramount importance to the process industries. This chapter provides the information on the waste characteristic according to Environment Protection Agency (EPA) united State America standard [26,27] and also according to Department of Environment (DOE) Malaysia [18,19,20,21].

Basically, it is the responsibility of the waste generator to provide information on the nature of waste to other concerned, particularly the authorities and those carrying out treatment, transport and disposal.

The majority of wastes are likely to be complex mixtures and in practice it is often impracticable, or even impossible, to determine their precise composition and characteristics. Nevertheless, a broad assessment of the physical, chemical and toxicological properties of each waste arising is necessary for three main reasons:

- To take appropriate measures to protect the health of people handling the waste and the environment, from its generation to its final disposal
- To select the most appropriate method of disposal
- To classify the waste in accordance with regulation requirement

It is vitally important that any company operating in the process industries is familiar with the waste that they are dealing with and know the regulation involved