

إدارة المخلفات البلدية الصلبة في دولة الكويت

رسالة مقدمة من الطالبة

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لاستكمال متطلبات الحصول علي درجة دكتوراه فلسفة

في العلوم البيئية

قسم العلوم الهندسية البيئية

معهد الدراسات والبحوث البيئية

جامعة عين شمس

2014

صفحة الموافقة على الرسالة

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MUNICIPAL SOILD WASTE MANAGEMENT IN KUWAIT

Submitted By

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*B.Sc. of (Chemical Engineering), Faculty of Engineering and Petroleum,
Kuwait University, 1996*

*Master of (Chemical Engineering), Faculty of Engineering and Petroleum,
Kuwait University, 2000*

**A thesis submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Science**

Department of Environmental Engineering Science
Institute of Environmental Studies and Research
Ain Shams University

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APPROVAL SHEET

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Abstract

The main objective of this paper is to analyze the present status of solid waste in Kuwait (components and quantities). The results of a questionnaire survey of nearly 600 random households residing in metropolitan Kuwait are presented. The frequency distribution of the family size, monthly income, type of residence and educational level of the sample population are presented. Also given are the distributional characteristics of the number of the monthly gathering, as well as those of the weekly grocery shopping trips and the family expenditure on shopping. In addition, the paper reports the findings of the quantity and the mix of the current household solid waste in metropolitan Kuwait.

Moreover, the paper examines the compatibility between household - reported and land fill site-measured percent composition of the daily solid waste where the true composition of daily household waste will be determined via the measurements of random waste trucks at the land fill sites also a hand sorting will be used for classifying the collected waste into the following categories: plastic, paper, metal, glass, wood and organic wastes. Proper scenarios were recommended for the reuse and the recycle techniques based on the data and measurements developed through this research. The mean person generation rate of solid waste per day in Kuwait is found to be 1.43 kg/ capita/ day. A mathematical relationship is constructed for the rate of solid waste generation in Kuwait per capita with respect to some important socio-economic factors that have been monitored and read through the questionnaire. Finally, we carried out a comprehensive comparison of the results obtained by both the hand count and the questionnaire for reading the components of solid waste, ratios presence and quantity produced.

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