AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING

WASTEWATER TREATMENT FOR SMALL COMMUNITIES

BY

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B.Sc. Civil Engineering

A Thesis

Submitted in Partial Fulfillment of

the Requirements of the Degree of M.Sc.

in Civil Engineering

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STATEMENT

This dissertation is submitted to Ain Shams University for the degree of M. SC. In Civil Engineering .

The work included in this thesis was carried out by the author in the department of Public Works. Faculty of Engineering, Ain Shams University, from November 1987 to March 1992.

No part of this thesis has been submitted for a degree or a qualification at any other University or Institution.

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Abstract of the M.Sc. Thesis

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ABSTRACT:

Several pollutional problems are associated with excreta and sewage disposal in Egyptian rural areas and small communities where public sewerage systems are not provided. Sewerage systems comprise : gravity sewer network, pump stations, rising mains and treatment works. When regularity criteria for wastewater disposal are to be met, several treatment techniques can be when applied produce wastewater of satisfactory quality .

Oxidation ditches, aerated Lagoons, and natural stabilization ponds are among different sewage treatment which are more suitable for small communities.

The purpose of this study was to carry out cost analysis of the three systems when properly designed and adopted to small communities of different sizes. Analysis was aided by the use of high speed computer.

The Outcome of this study indicated that oxidation ditches when costruction costs are considered are the cheapest among the other systems. Also, the study revealed that the availability of land as well as its cheap cost are important factors governing the choice of the treatment system.

Natural stabilization ponds working in series are on the other hand produces highly stabilized effluent which is safe for agricultural purposes .

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