

C/583

DESIGN OF A SMALL SCALE SECONDARY

WASTEWATER TREATMENT PLANT

PROJECT REPORT SUBMITTED BY

Papafingou Panayiota

in partial fulfillment of the requirements for the

DIPLOMA OF TECHNICIAN ENGINEER

in

Civil Engineering

of

HIGHER TECHNICAL INSTITUTE

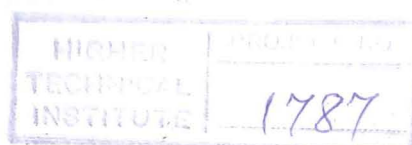
Nicosia Cyprus

**PROJECT SUPERVISOR : Mr. NICOS KATHIJOTES
Lecturer in CIVIL ENGINEERING
DEPARTMENT at H.T.I**

EXTERNAL ASSESSOR : Ms E. Theopemptou

TYPE OF PROJECT : INDIVIDUAL

June 1991



INTRODUCTION

In modern societies proper management of wastewater is a necessity, not an option. Pollution is obviously a daily thread, and is our prior duty to protect our selves and the environment in general. Wastewater treatment is a relatively recent undertaking, even though remains of sewers have been found in ancient cities, but the extent of their use for wastewater carriage is unknown.

The first treatment processes were tried in the late 1800s' and early 1900s'. Design of wastewater facilities remained empirical until the middle of the century. Great improvements have been achieved in the last 30-40 years and a wastewater treatment plant is now a fact.

The first processes were based on the *self purification capacity* of the streams or lakes where the wastewater were used to be discharged. But this unpretreated discharge of wastewater resulted to gross pollution and created great health problems. Nowadays, wastewater treatment is considered necessary prior to disposal regardless of the capacity of the receiving waters.

The search for new sources of water is never ending particularly in newly emerging countries. Populations are increasing and nobody wants to carry water from the village pump any more. Therefore, advance wastewater treatment processes are currently being developed that will produce potable water from domestic wastewater.

Wastewater treatment works must not be the ugly ducking in the community, but rather a good neighbour. In the past, odours, dust, noise, erosion, and unsightly conditions created public doubts and uneasiness about the nearby municipal treatment works. It is unacceptable to create new environmental

problems. Therefore future planning and designs of wastewater treatment facilities will emphasize techniques to minimize adverse environmental impacts and objections by the neighbourhood resident.

In today's world, companies and governments are working together to keep our environment clean. Each year, great investments are made in equipment and legislation. A battery of carefully controlled tests, performed under laboratory and natural conditions must be performed to assess potential damage before it occurs. These tests should be expanded in all fields ie for soils, water, plants, air etc. The effects that a wastewater plant product may have in the received streams or in underground water sources is of critical importance.