

HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF A WATER TREATMENT SYSTEM

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SUMMARY

The water technology field and especially the part dealing with the treatment of the water, is under continuous development and improvements. The treating of water is a very important part of civil engineering, which has to do with the provision of potable and safe water to the people. Based to this fact, one can understand that the design and the proper function of a treatment system is not an easy task to achieve.

This project gives general information about water and the design and the operations of a plant for the treatment of raw water to potable. It deals with the factors affecting the treatment of water, the different kinds of treatment processes and finally the upgrading of the water plant of Kornos. It also outlines the existing procedures in the plant and gives suggestions for alterations and new techniques that could be used in order to achieve better quality of water, make the plant capable of treating larger amounts of water and provide better safety measures for the personnel.

Finally it gives an estimation about the amount of money that should be spent in order to apply the recommended points.

INTRODUCTION:

Early people had no need of engineering works to supply their water. Hunters and nomads camped near natural sources of fresh water, and populations were so sparse that pollution of the water supply was not a serious problem.

Thousands of years must have passed before our more recent ancestors learned to build cities and enjoy the convenience of pure water piped to.

Improvements in community health and the development of sanitary engineering during the past century in both industrialized and developing communities, have paralleled and contributed to the development of modern systems for the treatment of potable water. Today in almost every country the necessity of supplying water of the best quality to almost all the houses is one of the major concern of the civil engineers.

The standards given in each country for the quality of the water to be supplied to the consumers keep changing as time passes. This is mostly because of the environmental changes that are caused by human interference to nature that affects dramatically the water in both the surface and groundwater sources.

The growth of the cities, the environmental changes, the new methods used for the treatment of the raw water and the fact that the water sources are getting less in some areas, lead to the alteration and upgrading of most of the existing water treatment systems. Such decisions are taken after serious consideration of all the factors that affect the system. Such factors are of course the quality of the treated water, the capacity of the plant, and the cost of the alterations to be made.