HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

RESTORATION OF MINING AREAS

C/1024

IMPLEMENTED BY:

LEONTIOU APOSTOLIA

JUNE 2007

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Project Supervisor: Dr Nicholas Kathijotes

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Introduction

Throughout the world there is an increasing need for action both in research and development in the use of environmental methods. The opening of a new highway net work, the creation of a dam, the construction of a railway line, mining and other projects are causing problems in the equilibrium of the environment. Every activity underground is causing problems on the earth surface. Change and damage to the environment is a situation where healing and repair takes a long time. Environmental thinking has been developed over the last few years and engineers are now looking at sustainable environmental solutions. "People must learn to protect the environment by calling the nature as their working partner, also to learn how nature maintains her balance and work with her than fight against her."

Mining is an economic activity that consists of the extraction of potentially usable and non - renewable mineral resources from land or sea without involving agriculture, forestry or fisheries. Mining is one of the oldest industry sectors and its history has evolved with humanity history.

In the past, most mining operations were carried out without concern, or even awareness, of the negative environmental impacts of the mining industry. The consequences of those inadequate practices are tangible nowadays. By contrary, more and more ongoing operations nowadays include adequate environmental practices as part as their mining activities.

Ecological restoration has been defined as "the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed". It encompasses many different aspects of "assisted recovery", but the basic objective remains the same: to recapture not only lost biodiversity, but also the functional processes (energy and nutrient cycling, construction of biomass, etc) that characterize natural ecosystems.