BUSITEMA UNIVERSITY
Pursuing Excellence

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL AND PROCESSING ENGINEERING

Final Year Project

PROSPECTING THE WASTE GENERATION AMONG INDUSTRIES IN KAMPALA INDUSTRIAL AND BUSINESS PARK

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PLACE OF RESEARCH: KAMPALA INDUSTRIAL AND BUSINESS PARK (KIBP), NAMANVE

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DECLARATION

I, Othieno Nicodemus declare to the best of my knowledge that all the educative material contained in this booklet is an account of my own efforts and has never been submitted to any university or institution for an academic award.

Signature..... Date 30/05/2017

APPROVAL

This report has been submitted after the approval of the following supervisors.

Mr. SSERUMAGA PAUL

Sign...../.... /.....

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Ms. NAKABUYE HOPE NJUKI

Sign.....

Date.../...../.....

DEDICATION

This report is dedicated to my beloved hero and dad, Mr. Othieno Chrisostom, beloved mom Mrs. Awor Margret, siblings and lovely brothers and sisters in Christ for the love and costless support rendered to me throughout my journey of education. May the Almighty God manifest His abundant blessings upon you all!

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ABSTRACT

A change of the status of economies, caused by globalization of economies in the world, is an important and prominent feature of current industrial development in developing countries like Uganda. This has posed a challenge on structural adaptation in the area of production, investment and business as large quantities of waste are generated as by-products and released into the environment resulting into pollution a common feature of global economic development. Therefore, there is need to establish environmental monitoring systems to minimize the ecological impact of industrial activity and to improve business performance for sustainable industrial development.

The research anticipated prospecting waste generation among industries in Kampala Industrial and Business Park (KIBP). This was done by taking stock of the existing and prospecting companies, establishment of the current waste generation among in the industries, reviewing of the environmental impact assessment reports from different industries, and establishing the consistence between the current industries' activities with those initially planned.

The research gathered data from different sources indicated that 3205.9 tons of waste is generated annually of which 63% of the solid wastes are biodegradable. A number of waste management approaches were identified and research data indicated that 43% of waste generated is collected and transferred, 37% recycled and the rest is incinerated and composted on site by the generators. Research data also showed that over 39types of industrial wastes are generated in KIBP and over 25 types of that can be recycled and reused. Furthermore, the data collected indicated that, about 378,760 liters or waste water is generated per week in KIBP of which 36% of that is treated and reused and the rest is discharged off using other methods. This therefore possess a great threat to the environment if not checked urgently.

At the end of the research, the location of industries and businesses per coordinates, key pollutants, size of industrial operation per coordinate and waste generated in each were identified as in the report.

These findings will assist in projecting the effect of pollution to the environment in the near future with the help of processed data for waste generated in the park which will help in establishing an eco-friendly industrial park for sustainable industrial and business development.

ACRONYMS

CO2-Carbon dioxide

CH4-Methane

TSS - Total Suspended Solids

EIA – Environmental Impact Assessment

CO2 – carbon dioxide

TSP – total suspended particulates

EMS-Environmental Management Systems

ISWM-Integrated Solid Waste Management

UNEP- United Nations Environmental Programme

BOD-Biological Oxygen Demand

COD-Chemical Oxygen Demand

SO2- Sulphur dioxide

EMS-Environmental Monitoring System

WSN-Wireless Sensor Networks

UIA Uganda Investment Authority

EIP-Eco-Industrial Park

KIBP-Kampala Industrial and Business Park

EPA-Environmental protection Agency

RCRA-Resource Conservation and Recovery Act

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CHAPTER ONE

1.1 INTRODUCTION

This chapter describes the background information of the project, the problem **statement**, significance, purpose, objectives and scope of the study. The problem statement describes the research problem and identifies potential causes and a solution. The significance describes the importance of the project. The specific objectives presented will achieve the main objective.

Background

Industrial parks are one of the most important factors supporting positive economic development in the world. An industrial park is based on a philosophy of integration of relatively different functions (production function, and that of services, relaxation and education) into an industrial area with majority of industrial production and services with high economy turnover and high employment. It provides services independent of type and importance of a particular industrial park, i. e. standard and non-standard services. The examples of standard services are finance and accounting, security of assets, operation and support of a transportation and technical infrastructure environment. Non-standard services, provided mainly in parks with country-wide and international importance with higher number of subjects, include logistic services, technology transfer, procurement of research and development services, financial services, banking among others. **(Jamila Vidová1, 2010)**

In Slovak literature, the term "industrial park" is basically very similar to the name of "industrial district", production zone or production cluster. Nonetheless, English economic literature uses terms such as industrial estate, trading estate, factory estate, or employment areas **(Keppl, 2001)**

Industrial Estates are planned, zoned areas that are set aside for a variety of industries, offices, and production. These areas are frequently built outside of major population areas or residential neighborhoods and are easily accessible via roads, rail, and boat. Industrial estates or parks are often governed by regulatory regimes that are set up to advance and encourage industry. Industrial parks contain a large variety of businesses ranging from food production to heavy metal smelting. **(Nathalie Gysi, 2016)**

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