TIME SERIES ANALYSIS OF WATER QUALITY DATA

by

NAVIN KUMAR BHARGAVA

B.Sc. (Engg.), University of Delhi, Delhi, India, 1969

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Industrial Engineering

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1974

Approved by:

Major Professor

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ACKNOWLEDGEMENTS

I offer sincere appreciation to my major professor, Dr. E. Stanley Lee for the guidance and inspiration throughout both this report and my graduate studies.

I also thank Dr. L. E. Grosh for his assistance in various aspects of this project.

I am grateful to the faculty members of the Industrial Engineering Department at Kansas State University who helped me in various ways during my graduate program.

I would like to thank Mrs. M. T. Jirak for typing the report.

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CHAPTER I

INTRODUCTION

Great attention has been devoted in recent years to building water quality models so as to gain greater understanding and insight of the underlying phenomena of water pollution and for purposes of prediction of future behaviour of the pollutants. The most common parameters studied for water quality analysis are

a) Temperature

b) Dissolved Oxygen

c) Biochemical Oxygen Demand

d) Chloride Contamination

e) Flow rate and others.

The purpose of water quality management system is to control the aforesaid factors with a view to maintain the water quality within certain acceptable standards. For any such system to be effective, it is necessary to have knowledge of the pollution phenomenon and its future behaviour.

Various approaches have been suggested in the past years to build mathematical models for these parameters. Among the important water quality indicators, dissolved oxygen and biochemical oxygen demand relationship has been studied most extensively. The dissolved oxygen (DO) serves as a surrogate variable indicating the general 'health' of the stream and its ability to maintain and propagate a balanced ecological system [28]. From an analytical point of view, the DO system is quite complex and