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APPLICATION OF THE ELECTRICAL ANALOG TECHNIQUE
TO STUDY A LIMESTONE AQUIFER

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CONTENTS

SUMMARY		01
CHAPTER - 1	INTRODUCTION	02
CHAPTER - 2	DESCRIPTION OF THE STUDY AREA	05
	2.1 Location	05
	2.2 Geology of the basin	05
	2.3 Topography	06
	2.4 Meteorology	07
	2.5 Development of the aquifer	07
	2.6 Sociology	08
	2.7 Boundaries	09
	2.8 Piezometric head distribution	09
	2.9 Transmissivity distribution	10
	2.10 Abstraction from wells	11
	2.11 Recharge of the aquifer	12
CHAPTER - 3	THEORETICAL ASPECTS	13
	3.1 Analytical method	13
	3.2 Flow nets	14
	3.3 Physical models	15
	3.4 Numerical models	15
	3.5 Analog models	16
CHAPTER - 4	METHOD OF APPROACH	18
	4.1 Resistor-Capacitor Model	18
	4.2 Electrical Analogy	19
	4.3 Selection of Scale factors	22
	4.4 Determination of resistor values to the resistor mesh	23
	4.5 Procedure adopted	23
	4.6 Sensitivity analysis	33

CHAPTER - 5	CONSTRUCTION OF THE MODEL	39
5.1	Preparation of mounting panel	39
5.2	Soldering of resistors to the grid points	39
5.3	Fixing of recharge and abstraction resistors	39
5.4	Fixing of adjustable resistors	40
5.5	Sources of Power Supply	40
CHAPTER - 6	MODEL APPLICATIONS	42
6.1	Potential drop around a pumping well	42
6.2	Effect of recharge fluctuations on aquifer behaviour	43
6.3	Effect of increase of present abstraction	44
CHAPTER - 7	CONCLUSION	46
7.1	Potential distribution	47
7.2	Transmissivity distribution	47
7.3	Recharge	48
7.4	Abstraction from the aquifer	48
7.5	Leakage into Kala oya delta	49
7.6	Sensitivity analysis	49
7.7	Further developments	50
7.8	Confirmation of model	52
7.9	Disadvantages of the Analog Technique	52
REFERENCES		53
LIST OF TABLES		54
LIST OF FIGURES		55



SUMMARY

This dissertation describes a hydrological study of the Vanathavillu Limestone aquifer using the Electrical Resistor Analog Technique.

Vanathavillu is situated about 18 km, north of Puttalam covering an area of about 80 km². It is considered to be an isolated basin with the boundaries in the north at Kalaoya delta and the other boundaries being impermeable due to faults on the west and the south and an outcrop of basement in the east.

The basin consists of two main water bearing strata namely, the upper Moongil Aru formation of quarternary age and a lower Limestone aquifer of Miocene age.

Some observations had been carried out during the past two decades with reference to the geology and the hydrogeology of the area. The aquifer parameters and hydrological factors such as recharge and abstraction have been estimated with some degree of uncertainty.

The application of the Electrical Analog Technique in the present study is to obtain refined estimates of these parameters and thereby predict the maximum usefulness of the aquifer.

In using the Analog method, more weightage was given to some data such as piezometric head contours already established so that the uncertain data could be checked for their validity.

Based on the numerical values of the aquifer parameters that were established and the recharge quantities that were evaluated, an overall evaluation of the aquifer as a source of water supply is carried out.