APPLICATION OF AQUIFER SIMULATION
MODEL FOR GROUNDWATER FLOW SIMULATION

NORAZIEMA NORDIN

B.Eng (Hons) (Civil)

UNIVERSITI TEKNOLOGI MARA

2004

APPLICATION OF AQUIFER SIMULATION MODEL FOR GROUNDWATER FLOW

By
NORAZIEMA NORDIN

Report is submitted as the
Requirement for the degree of
Bachelor Engineering (Hons) (Civil)

UNIVERSITI TEKNOLOGI MARA

OCTOBER 2004

DECLARATION OF THE CANDIDATE

I Noraziema Nordin, 2002239037 confirm that the work is my own and that appropriate credit has been given where references has been made to work of others.

…………………………………………………………………………………..

ACKNOWLEDGEMENTS

First of all, I would like to express my gratitude to Allah S.W.T and Prophet Muhammad S.A.W for giving me guidance and strength in making this project research a success. I also like also to express my thanks and appreciation to my advisor, Mr. Kuan Woei Keong for his constructive ideas, guidance and advise. To my beloved parents, my sister, I owe heartiest gratitude for their understanding concern and care. Lastly, special thanks to all my friends who have involved in the process of completing the report.

Thank you, may Allah S.W.T the almighty be with us all the time.

ABSTRACT

Pulau Tioman is one of the tourism destination in this country. There are many small villages in Pulau Tioman and Kg.Tekek is one of the areas that have a good potential for development of groundwater. This study was concentrated on the application of aquifer simulation model for groundwater flow simulation. The objective of this study is to simulate the groundwater flow at Kg.Tekek. The suitable and available software can be used for this purpose is Aquifer Simulation Model (ASM). Aquifer Simulation Model applies the concept of finite difference method to solve the simulation.

The first step to develop the model is to descretise the study area into block or cell. Then we need to assign the parameters to this model. The important parameters required to simulate the flow are boundary condition, hydraulic conductivity, porosity and initial hydraulic head. After specify all the information, the last part to complete the simulation process is calibration. Calibration is the process of selecting model parameters to get the accurate result for this model. After execute all the process, then it comes out with the best value of hydraulic conductivity,K to be used in this model. The hydraulic conductivity given is 5.0E-04. Lastly, applying this K value to perform the contour of this study area.