

**GROUNDWATER POTENTIAL ASSESSMENT OF THE
BANG PA KONG RIVER BASIN USING MONTE CARLO
TECHNIQUE**

PORNUSA UDOMSILPA

**MASTER OF SCIENCE
IN GEOLOGY**

THE GRADUATE SCHOOL

CHIANG MAI UNIVERSITY

MARCH 2013

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright © by Chiang Mai University
All rights reserved

**GROUNDWATER POTENTIAL ASSESSMENT OF THE
BANG PA KONG RIVER BASIN USING MONTE CARLO
TECHNIQUE**

PORNUSA UDOMSILPA

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE
IN GEOLOGY**

THE GRADUATE SCHOOL

CHIANG MAI UNIVERSITY

MARCH 2013


**GROUNDWATER POTENTIAL ASSESSMENT OF THE
BANG PA KONG RIVER BASIN USING MONTE CARLO
TECHNIQUE**

PORNUSA UDOMSILPA

**THIS THESIS HAS BEEN APPROVED
TO BE A PARTIAL FULFILMENT OF THE REQUIRMENTS
FOR THE DEGREE OF MASTER OF SCIENCE IN GEOLOGY**

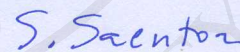
EXAMINING COMMITTEE

THESIS ADVISOR

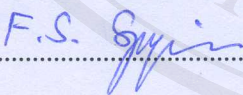


CHAIRPERSON

Assoc. Prof. Dr. Kriengsak Srisuk

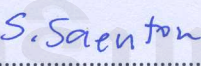


Asst. Prof. Dr. Schradh Saenton



MEMBER

Asst. Prof. Dr. Fongsaward S. Singharajwarapan



MEMBER

Asst. Prof. Dr. Schradh Saenton

8 March 2013

© Copyright by Chiang Mai University

ACKNOWLEDGEMENTS

This thesis would not have been possible without the support from a thesis – advisor, Asst. Prof. Dr. Schradh Saenton who has been an inspiring example of a dedicated teacher and researcher. Extend thanks for his insights, advices, comments, providing and prompt responses over the years I spent during my Thesis course at Chiang Mai University. Also, I would like many thanks to Assoc. Prof. Dr. Kriengsak Srisuk, and Asst. Prof. Dr. Fongsaward S. Singharajwarapan who formed the rest of my thesis committee for their suggestions and comments to my work.

Among the people who have been helping me, Dr. Tussanee Nettasana and Assist Prof. Dr. Fongsaward Singharajwarapan are specially and thankfully acknowledged. Without help and advices, all the experiments I conducted in this research would not have been accomplished. My thanks also go to truly great friends in the Department of Geology; Mr. Naris Loanuson, Mr. Sorrawit Thammajai, and Miss Luxika Kaewjunu with whom I could share my fun, happiness, and especially frustrations. I would also like to thank all staffs, geology students at Department of Geology, and Co-workers at Bureau of Groundwater Exploration and Groundwater Assessment with whom I constantly spent time hunting for good deals, sharing good times and their help.

Groundwater Development Fund from Bureau of Groundwater Control, Department of Groundwater Resources and Office of the National Research of Thailand Council (the NRCT) were sponsored, there are an honor for me to be also gratefully acknowledged for its long-term financial support of the author from 2008 to 20012.

Lastly, special thanks go to my parents, my sister and brothers who made this all possible by their constant support and love. And most of all, I must thank Mr. Supawat Sangseang, for his love, encouragement and good cheer throughout the long road to the master degree.

Pornusa Udomsilpa