ACKNOWLEDGEMENT

It is my immense pleasure to express my deep sense of gratitude to my esteemed supervisor and guide Dr. Jogendra Nath Sarma, Professor, Department of Applied Geology, Dibrugarh University, Dibrugarh, Assam, for his valuable guidance, support, inspiration and constant encouragement during my Ph.D work.

I express my sincere gratitude to Dr. D. Ramaiah, Director, CSIR-NEIST, Jorhat, Assam for his kind permission and encouragement to carry out my research work.

I am thankful to Dr. R.K. Sarmah, Head, Department of Applied Geology, Dibrugarh University for permitting and providing the necessary facilities during my research work. I am indebted to all my teachers- Dr. Sushil Goswami, Dr. Pramathesh Bhattacharyya, Dr. Uttam Goswami, Dr. Dilip Mazumdar, Dr. Mrinalendra N. Dutta, Dr. Siddhartha Kr. Lahiri, Dr. Kalpana Deka Kalita, and Dr. Tapos Kr. Goswami, of Applied Geology Department, Dibrugarh University for their ever encouraging words and timely help whenever needed during my tenure.

Acknowledgement to Dr. J.R.Kayal, Deputy Director General, Geological Survey of India, Calcutta for his constant inspiration to complete my assignments.

Special thanks to Dr. Utpal Baruah, Principal Scientist and Head, Regional Centre, NBSS & LUP without whom this work would not have been completed.

Sincere thanks to Dr. Daniela Kuhn, Senior Research Geophysicist, NORSAR, Norway, for her valued support and suggestions.

I am also thankful to Dr. Ranju Duarah, Chief Scientist and Area Coordinator, Dr. Prabhat Kotoky, Chief Scientist and Dr. Pabon Kumar Bora, Senior Principal Scientist of Geoscience Division, CSIR-NEIST, Jorhat for their valuable comments and suggestions from time to time.

I am highly obliged to Dr. Saurabh Baruah, Senior Principal Scientist and Head, Geoscience Division, CSIR-NEIST, Jorhat, for his guidance, support and constant advisor throughout.

Sincere thanks goes to Dr. Manoj Kumar Phukan, Scientist, CSIR-NEIST, Jorhat, Dr. Devojit Bezbaruah, Dr. Pradip Borgohain, Dr. Diganta Bhuyan, Assistant Professors, Applied Geology Department, Dibrugarh University, Mr. J.J. Mahanta, Scientist, CSIR-NEIST, Jorhat, Mr. Arup Saikia, Technical Assistant, Geoscience Division, CSIR-NEIST, Jorhat, Ms. Nandita Dutta, Dr. Ananya Chutia, Ms. Rupjyoti Lahon and Mr. Chaitra Dhar Taye Research Scholars of Applied Geology Department, Dibrugarh University, for their help and support in various aspects.
I am grateful to all the staff and researchers of Geoscience Division, CSIR-NEIST, Jorhat and Department of Applied Geology, Dibrugarh University for their help and support.

Finally, I extend my gratitude to my family members, especially to my son Ryan, for their constant inspiration and understanding in carrying out my research work smoothly.

Last but not the least I am very thankful to all my seniors, colleagues and my well-wishers who in different phases of my work helped me directly or indirectly to achieve my goal.

Sangeeta Sharma