## **ACKNOWLEDGEMENTS**

This work would never have materialized without the contribution of many people whom I have the pleasure of expressing my appreciation and gratitude.

First and foremost, my deepest gratefulness is due to my supervisor, Dr. K. C. Tiwari, whose intellectual inspiration, guidance, encouragement and regular lengthy discussion have been invaluable to me. He made me determined to continue, to revise, and strive for improvement. His continual willingness to listen, discuss and render critical judgments helped me to produce this thesis in its present shape.

The author remains thankful to Prof. P. P. Patel, Head, Department of Geology for providing the necessary facilities during the progress of this work.

The author remains indebted to Dr. D. Ramakrishnan who, besides his motivation, harbored during the period of the aggravation with brotherly affection. The technical discussion with him enabled the author to solve the intricacies for which author remains thankful.

The author acknowledges Prof. N. D. Desai, Dr. A. V. Joshi, Prof. S. Ganapathi, Prof. R. V. Karanth, Dr. N. P. Bhatt, Dr. M. A. Limaye, Dr. B. S. Deota, members of teaching staff for their encouragement and lively company during the moments of despair.

The author express gratitude to Dr. C. R. Shah, Consulting Engineer for his timely help to provided me the opportunity to seek his valuable guidance in data collection and analysis. I am indebted for his expert advice and the time he spared me.

The author owes his gratitude to Shri B. J. Parmar, Secretary, NWRDC, Gandhinagar; Shri C. B. Tiwari, Superintending Engineer, Soil Survey and Drainage Reclamation Circle, GERI, Vadodara; Shri M. S. Patel, Managing Director, GWRDC, Gandhinagar; Shri M. V. Chaudhary, Superintending Engineer, Irrigation Circle, Surat; Superintending Engineer, Drainage Circle, Surat and Shri R. N. Patel, Executive Engineer, GWSSB, Surat for providing permission to collect the necessary data and relevant materials.

The author is also thankful to Shri B. I. Jadav, Executive Engineer, Shri R. M. Patel, SO, Surat Irrigation Circle, and Shri H. M. Chauhan, SO,

Mota Section, Bardoli for providing necessary data and extending guesthouse facility during the fieldwork.

The author has also thankful to Shri J. K. Patel and Shri R. D. Patel, Soil Survey Officer, GERI, Vadodara for providing the various records and extending the laboratory facility.

Author extends his sincere thanks to Shri N. M. Bhatt, Coordinator, Environmental Engineering Lab, M.S. University of Baroda, Vadodara and Shri H. G. Patel, Manager, GSFC, Science Laboratory, Vadodara for providing the laboratory facility for the chemical analysis of soil and water samples.

I gratefully acknowledge the support of the former Chairman Prof. S. M. Amin, Principal Prof. M. D. Joshi, former Head Shri B. K. Parmar, Prof. A. N. Shah and present Head Prof. M. R. Dave for allowing me to complete this research during my job at Sardar Vallabhbhai Patel Institute of Technology (SVIT), Vasad. I am also thankful to all my colleagues at SVIT for their friendly treatment.

I am grateful to my friends Dr. Sanjay Shah, Dr. Parag Sohoni, Dr. Aniruddha Khadkikar, Dr. George Mathew, Shri Sunit Biswas, Shri Uday Bhonde, Bhavani Desai, Subhash Bhandari and Sumit Dabral who helped me during my work.

The author is also grateful to the non-teaching staff of Geology Department for their co-operation during the various stages of the work.

The author will fail in his duties if, he fails to thank Smt. Gayathri Tiwari, for her affection that smoothened the agonies of the author.

I express my deepest appreciation to my parents and brother for remembering me in their prayers and for believing in me. Their moral support was always a continuous source of inspiration for me. I could not have attained my desires without their kindness and help. Lastly, I express my gratefulness to my wife and son. I express my appreciation to my wife who patiently took more responsibility of managing household activities and taking care of my son during my absence.

Finally, my heartiest thanks to all my well-wishers who made my Jignesh V. Patel dreams true.

Vadodara June 2002

"Our entire society rests upon - and is dependent upon our water, our land, our forests and our minerals. How we use these resources influences our health, security, economy and well being".

- John F. Kennedy