ACKNOWLEDGEMENTS

I wish to thank my guide, Dr. S.K. Gupta for stimulating discussions, leading to selection of the present research problem. He has been very supportive and encouraging throughout the duration of my work. My grateful thanks are also due to Dr. L.S. Chamyal who agreed to be my co-guide and gave invaluable help at various stages of this work. His keen sense of humour, especially in times of stress, also taught me to keep problems in perspective.

Prof. S.S. Merh is especially thanked for his generous help, useful discussions and encouragement during the course of this work. His comments on draft of this thesis have helped considerably in improving it.

The 54m long Nal Sarovar core was raised by the staff of the Directorate of Geology and Mining, Govt. of Gujarat. I would like to thank the Director and the highly efficient staff, for their co-operation. Thanks are also due to the Forest Dept., Govt. of Gujarat for giving permission to drill in the protected Nal Sarovar sanctuary.

The remote sensing work was carried out at GERI Baroda, Geology Dept., M.S. University of Baroda and CEPT, Ahmedabad. The staff at all these institutes are acknowledged for their help. Dr. Anjana Vyas and Ms. Sheetal from CEPT are especially thanked for their co-operation. The bore hole data was collected from GWRDC, CGWB, GWSSB, Ahmedabad. The help of all these agencies and their staff is acknowledged. Dr. S.D. Nayak, Remote Sensing Division, Space Application Centre, Ahmedabad is thanked for useful discussions. Mr. R.L. Jain, GSI, Gandhinagar helped in the identification of shells found in Nal Sarovar core.

Prof. S. Krishnaswami, Prof. N. Bhandari, Dr. R.K. Pant, Dr. P. Sharma are acknowledged for their useful suggestions for improving this work. Dr. P. Sharma additionally made several suggestions for improving the draft of the thesis.

Dr. Sheela Kusumgar is acknowledged for help in radiocarbon dating, and computer facilities whenever needed. Prof. A.K. Singhvi is thanked for providing access to TL laboratory facilities, stimulating discussions and also

for checking the draft of the chapter on luminescence dating. Dr. M.M. Sarin is thanked for his prompt help in AAS analyses.

Dr. V.S. Kishan Kumar and Mr. Someshwar Rao are acknowledged for patiently teaching the basic concepts in TL dating. Mr. Navin Juyal is thanked for useful and interesting discussions. Mr. Anil Shukla is thanked for his help with gamma spectrometry analyses. Mr. D. Banerjee is acknowledged for use of programmes for dose rate calculation and error estimation.

The stable isotope work was made possible due to co-operation from staff of glass blowing section and liquid nitrogen plant. Mr. R.A. Jani is especially thanked for spending time to teach the operation of mass spectrometer. Mr. M.G. Yadava and Mr. N.B. Vaghela, radiocarbon lab, provided generous and timely help in times of crisis. Mr. M.H. Patel made life and work interesting with his help.

My officemates and colleagues Mr. R.D. Deshpande and Dr. Kailash Pandarinath, provided considerable help during field trips. Dr. Pandarinath additionally carried out grain size and mineralogical analyses. Both these friends are thanked.

Mr. D.R. Ranpura, photography section and Mr. S.C. Bhavsar, drafting section, are acknowledged for their help.

This work was partly supported by the Department of Science and Technology (grant number EST/44/014/90).

Finally, I take this opportunity to thank my family and some of my closest friends, Rashmi, Pauline and Shikha for being there whenever I needed them.