

CHAPTER 19

GEOLOGY

Doctoral Thesis

161. SUDHAKAR (M.)
Hydrogeologic Studies in the Western Marginal Gangetic Alluvial Terrain of Mathura-Bharatpur Region, India
Supervisors : Dr. V. N. Bajpai and Dr. A. M. Bhola
Th 14767

Abstract

Presents an integrated hydrogeologic picture of Mathura-Bharatpur region. On the lines of hydrogeomorphology, geologic structure, electrical resistivity sounding and profiling together with hydrochemical analysis and evolution for groundwater management. It suggests that the water reservoir can be filled up connected to micro-drainage basins guided by geological structure (directions of higher permeability) in hardrock areas and its surrounding pediments where the fresh water is stored during Monsoon season. Also storages must be made by digging trenches around the ridges for active recharge. This would augment the groundwater reservoir in the pediment areas and also surrounding water bodies. It is also necessary to pump water in the pediment region before it flows towards alluvium and mixes with saline water in the alluvial fill. In the alluvial areas only shallow water to a maximum depth of 30m can be exploited which is in the vicinity of rivers and canals. In alluvium an overall flow pattern from salt water areas to fresh water areas (palaeochannels) can be changed by safe pumping (without incursion of saline water) of the fresh water. Water table contour maps indicating wide spacing facilitate identification of such areas for pumping.

Contents

1. Introduction. 2. Hydrogeomorphic classification, aquifer disposition and water table mapping. 3. Geological structure and deformation pattern in hardrock tract for manifestation of tectonics. 4. Electrical resistivity investigations for solving hydrogeological problems. 5. Quality assessment and hydrochemical evolution of groundwater. 6. Summary, Conclusions and Bibliography.

M.Phil Dissertations

162. RAJAK (Manoj Kumar)
Evolution of Quaternary Alluvial Fan Deposits of Kangra Valley, North West Himalaya : Paleoclimatic and Neotectonic Implication.
Supervisor : Dr. Pankaj Shrivastava
163. RAJU KUMAR
Petrochemistry and Petrogenesis of Deccan Basalt Dykes, Between Betul - Jabalpur Areas of M. P.
Supervisor : Prof. J. P. Srivastava