

Application of Remote Sensing and GIS in Exploration of Ground Water in India

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Abstract The paper describes applications of Remote Sensing and GIS in exploration and prospection for ground water in India. The Computer aided Satellite digital data has been used in classifying images that produced optimum interpretability.

Three case studies have been described pertaining to (i) Crystalline hard Rock areas viz. Anantpur District in Andhra Pradesh; (ii) Kundaria Catchment in Mayurbhanj, District of Orissa and (iii) in Basaltic rock terrain in Wardha District in Maharashtra. The approach used includes images enhancements, image classification and analysis of lineaments, fracture trace mapping, weathered zone mapping and soil moisture balance studies. The study has brought out a conceptual geostatical and topographic hydrogeologic model that determines drilling favourability score using remote sensing derived data layers in conjunction with ground attributes. A major outcome of the study is the evolution of a criteria for locating water wells over hard rock areas in India. The criteria is field tested and have proved to reduce well failures and improvement in well productivity in otherwise complex hydrogeological terrains.