

Abstract

Groundwater is one of the largest sources of water in the desert is Birjand. With the increase in demand for water due to population growth, urbanization and agricultural development, water resources in arid and semi-arid were of great interest. Availability of groundwater as a source of natural dynamics has been limited due to the existence of groundwater in subsurface formations, and one of them was able to direct observation and the swing, it is difficult to measure in time and space. Accordingly, quantitative evaluation, management and use, groundwater, is important. The use of remote sensing techniques and the use of images Satellite information from different environments, due to the low cost, speed and accuracy are a good way to determine areas of potential groundwater. The integration of remote sensing data and geographic information systems (GIS) to explore groundwater resources has become a success in the field of water research, the assessment, monitoring, maintaining, planning and better management of groundwater can be useful be. The aim of this study was to locate potential areas for groundwater data using remote sensing and GIS in Birjand. Mapping areas with the potential for groundwater Birjand Karmajv method was used. And maps used maps drainage network density, linear density, topography, lithology, vegetation, land use and slope area, the map of vegetation and land use maps using surveys and other maps the use of remote sensing. And maps based on the weighted weight was given to it in the software 10.3ArcGis by weight placed on And final map obtained, the availability of groundwater quality in the area classification, and this class include: pretty good, moderate, low and very low. The results suggest that areas with the highest density of drainage and density lineaments and Quaternary sediments and pastures slope and height of their potential groundwater. The validation plan for potential groundwater from 14 wells of the water table in the valley were scattered. Finally, comparing the final map with the distribution of shallow wells, piezometers and they showed high accuracy in this area.

Keyword: Ground Water, Birjand Plain, Remote Sensing, Lineament, Topography, Lithology



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**Exploration of Groundwater Potential Using Remote Sensing Data and
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