

Assessment of fractures role in the Chamasiab spring discharge in the northeastern Khuzestan province

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Abstract

Chamasiab watershed is located in the northeastern Khuzestan province. The sandstone unit of the Aghajari Formation has caused to be the formation of the sandstone aquifer in the area which discharges to the surface via Chamasiab spring. This study discusses the importance of fractures in the discharge of Chamasiab spring and recognizing of the area groundwater system as well. For this purpose, in the different parts of the area, the joints and fractures system has been measured. Also, the fracture density map has been prepared by using GIS and remote sensing (RS) techniques. The results show that fractures in the thick layers of sand stone have a major role in the sandstones permeability, and it has also been considered as the most important factor of Chamasiab spring discharge in the studied area. Spring discharge changes from 20L/Sec to 60 L/Sec in wet and dry seasons respectively. This reflects the permeability of sandstone in the area, and also shows that the spring response with respect to rainfall is high in the studied area.

Key words: sand stone, Aghajari, discharge, joints and fractures system, sand stone permeability.