The geologic and geomorphologic impacts on groundwater resources,eastern portion of central sinai,Egypt

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The present thesis deals with the geological and geomorphological impacts on groundwater resources of eastern portion of central Sinai. Geomorphologically; the studied area is discriminated into two main units, these units are the highlands which are classified into the tableland area, hilly area and the lowlands.Stratigraphically; the sedimentary succession of the studied area and its surroundings ranges in age from Lower Cretaceous to Quaternary. Structurally, the study area is classified into stable foreland zone and gently folded zone. The hydrogeological studies revealed that the groundwater in the study area is available from three aquifers; Quaternary (alluvial) aquifer, Upper Cretaceous aquifer and Lower Cretaceous aquifer. The hydrogeochemical studies revealed that the groundwater salinity in the concerned area ranges from 373.3 mg/l (fairly fresh) to 5068.5 mg/l (slightly saline). Most of the groundwater samples in the area of study can be used for different purposes (livestock and irrigation). The present study leads to the following recommendations: construction of several meteorological stations especially at the water divides of the main basins and conservation of surface water runoff by the construction of earth barriers and Cisterns, to recharge the shallow aquifer, decrease the flash flood hazards and direct surface water toward Cistern. Also, more attention should be focused on the shallow limestone aquifer (Upper Cretaceous aquifer), where it is recorded at shallow depths (less than 10 m) and the groundwater salinity not exceeds 1500 mg/l especially at W. Oqaba.