

Reconnaissance Geophysical Study on the Southeastern Part of Al-Qashah Aera, Kingdom of Saudi Arabia

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Abstract : The investigated study area locates about 72 km from Jeddah city, Makkah district, Kingdom of Saudi Arabia. The study mainly aimed to define only in detail the most significant zones of possible mineralization and outline their subsurface parameters (location and strike) in the southeast part of Jabal Al-Qashah. Several geophysical methods have been conducted to carry out the goal. Among these methods are the ground magnetic method, self-potential (SP) method, and induced polarization (IP) method. Integrating these methods aims to help in delineating the possible mineralization in the study area. The magnetic survey was conducted along 17 profiles where these profiles were chosen to be perpendicular to the strike of the quartz shear zone. Self-potential was applied along with five profiles covering the study area. At the same time, induced polarization was used along with one profile located at the western side of the study area corresponding to some magnetic and SP profiles. The most interesting zones of mineralization were successfully determined by comparing the results of residual magnetic profile (3), SP profile (1), and IP profile, where geological structures control some mineralization.

Keywords : geophysical methods, magnetic method, self-potential, induced polarization, Jabal Al-Qashah

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