IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 18, No. 4, Winter 1389/2011

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

Geology, alteration, mineralization and geochemistry studies in Dahaneh Qaleh exploration prospect, northwestern Bardeskan

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(Received: 5/3/2010, in revised form: 1/6/2010)

Abstract: Dahaneh Qaleh exploration prospect is located about 300 km south west of Mashhad and is belong to the Taknar structural unit. This unit is separated from Sabzevar structural unit with Taknar fault in the north and Darouneh fault in the south, is the separator of this unite from Lut structural unit. Before the operation field, ASTER sensor data processing introduces Hematitic, Chloritic, Epidotic, Sericitic and Silicification alteration zones in the study area. Field work observations and optical microscopy confirm the remote sensing results. Geological formation of the area is consists of metamorphic rocks and low grade metamorphed subvolcanic granitoid rocks with porphyry texture. The origin of granitoid rocks is calk-alkaline, peraluminous to metaluminous magma that is leading to the formation I-type granitoid rocks in the area. The tectonic setting of the rocks is subduction zone. Stream sediment geochemical analysis shows Au, Ag, Cu, Pb, Zn anomalies in secondary halos. Maxzimum value of Au is (12.3ppb), Ag (97ppb), Cu (87.28ppm), Pb (88.94ppm), Zn (160.3ppm). On The base of field studies, petrography and mineralography investigations recognized two mineralization systems in the area: 1-Taknar VMS mineralization sysrem and 2-Copper Porphyry mineralization system (monzonite model).

Keywords: *Dahaneh Qaleh, Taknar zone, Au-Cu-Pb-Zn-Ag ,Bardeskan*

متن فارسی اصل مقاله از صفحه ۵۸۱ تا ۶۰۰ در این شماره به چاپ رسیده است.

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