



The study of mineralogy in Kahang exploration area (NE Isfahan)

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Kahang ore deposit located in 73 km to the northeast of Isfahan city and 10 km to the east of Zefreh town. This ore deposit located on the Uromieh-Dokhtar volcanopolutonic belt spreading 18.64 km². This belt extends from NW to SE Iran. The host all of the Iranian large porphyry copper deposits such as Sarcheshmeh, Sungun, Meiduk and Darezsar is located on this belt. The rocks of the area included Andesite, Porphyritic Andesite, Dacite, Porphyritic, Rhyodacite, Diorite, Quartz Monzonite and Porphyry Micro Granite. In plutons, there is a trend from basic to acid features along with decreasing of age from margin to center of massive. Kahang region is an alteration and breccia zone. Generally, more than 90% of rocks of this region have been affected by hydrothermal fluids. For the first time, this exploration area was studied using satellite images processing (TM) and primary results showed that is suitable place for resources of Copper (Cu) and Molybdenum (Mo). The main type of mineralization at Kahang prospect is Cu-Mo porphyry, hosting by strong quartz-sericite and quartz magnetite alterations in quartz monzonite and diorite porphyry as well as by hydrothermal tourmaline breccia pipes. The visible copper (malachite and Cu-Mn oxides) and iron oxide mineralizations (mostly jarosite, hematite and goethite) occur in the intense zones of quartz stock working, quartz-sericite alteration and hydrothermal breccias zones. Although there are some local supergene and oxide mineralization, drilling data indicated the possible large scale economic mineralization is mostly hypogene in origin. Mineralized veins have composed of quartz as the most important gangue minerals as well as pyrite, chalcopyrite, Sphalerite, Magnetite, Chalcocite, Hematite, Fe- hydroxide (Limonite & Goethite), Galena, Covellite, malachite, Bornite, Digenite, Rutile, accompanied by copper and molybdenum. There are three porphyry centers (East, West and Central) at Kahang. The magnitudes of the surface soil anomalies at these three centers are: West Kahang (500m by 500m): >200 ppm Cu; 15 -182 ppm Mo; Central Kahang (600m by 450m) : >290 ppm Cu; 30 to >100 ppm Mo; East Kahang (400m by 350m): >200 ppm Cu; 30 to >100 ppm Mo.