

Studies of remote sensing, geology, alteration, mineralization and geochemistry of Balazard copper-gold prospecting area, west of Nehbandan

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Abstract: Balazard area is located in west of Nehbandan in the center of Lut Block. Eocene andesite and rhyolite cover most of the area. Subvolcanic rocks such as quartz monzodiorite porphyry, biotite quartz diorite porphyry, pyroxene hornblende diorite porphyry, hornblende pyroxene quartz diorite porphyry and hornblende diorite porphyry intruded the volcanic rocks. Evidence such as disseminated sulfide mineralization and intense alterations, indicates high potential of mineralization for this area. Alteration and mineralization cover more than 20 square kilometer areas. Volcanic and subvolcanic rocks are highly altered, contain argillic, sericite-argillic, silic-argillic, advanced argillic and propylitic. Mineralization is present as disseminated and veins. Hypogene minerals in intrusive rocks are pyrite and chalcopryrite and in carbonate-quartz veins are pyrite, sphalerite, chalcopryrite and galena. Supergene minerals are chalcosite, covelite, malachite and azurite that seen in carbonate- quartz veins. Geochemical data show high anomalies of Au, Ag, Cu, Zn, Sb, As and Pb respectively, with maximum values are 2470 ppb, 114 ppm, 1250 ppm, 2462 ppm, 103 ppm, 98 ppm and 968 ppm. Geological, mineralogical, alteration and geochemical studies indicate that sulfide mineralization in carbonate-quartz veins has formed by the influence of hydrothermal fluid that moves in faults and shear zone. In addition widespread and disseminated pyrite and chalcopryrite mineralization associated with alteration zones, represents a widespread activity of hydrothermal fluids.

Keywords: *Alteration; Aster; carbonate- quartz vein; Balazard; Nehbandan.*

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