

Mineralization, alteration and geochemistry of Hired gold-tin prospecting area, South Khorasan province

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Abstract: Exposed rocks at Hired gold-tin prospecting area are mainly Mesozoic and Paleocene sedimentary and Eocene volcanic rocks. Oligo-Miocene Granitoids are intruded the Eocene and older rocks. Based on petrology and physical characteristics of rocks, granitoids are two types: 1) S-type and 2) I-type. Mineralization is seen as stockwork, fault mineralized zone, skarn and in replacement. Stockwork mineralization is exposed in the eastern part of target (1) and it is found within S-type granite and silicified – tourmaline rich shale. Hypogene minerals are: pyrite, arsenopyrite, pyrrhotite, chalcopyrite, ± galena, ± sphalerite, tourmaline, quartz, chlorite, calcite and sericite. Gold is mainly found in veinlets contain sulfide, quartz and tourmaline. Based on S-type granite, stockwork mineralization, tourmaline alteration and Sn anomalies (581 ppm), Hired is a Tin – Gold mineralized system. Geochemical data from drill holes in target (1) and (3) indicate that the high value of Au, Ag, Cu, Zn, Pb, As and Sb are found mainly between depth of 50 to 100m in eastern part of target (1), therefore this area is close to the source of fluid. Tin – Gold mineralized system at Hired is associated with S-type granite.

Keyword: *Hired, S-type Granitoid, Stockwork, Tourmaline, Tin, Intrusion-related gold system.*