Petrology of intrusive rocks in Taknar mining area, Bardaskan, (Iran)

M.H. Karimpour*, B. Rahimi, S. Zirjanizadeh, E. Salati

Department of Geology, Faculty of Sciences, Ferdowsi University of Mashhad, Iran

(Received: 12/5/2009, in revised form: 23/8/2009)

Abstract: Taknar mining district is located about 28 Km northwest of Bardaskan in the central part of Taknar zone. Taknar Zone is surrounded by Rivash fault in the north and Dorouneh fault to the south. At least 30 percent of Taknar Formation (Ordovician age) is made up of submarine volcanic rocks. Geological evidence indicates that Taknar Zone displaced from another place to present location. Major structural features which are identified included: right lateral strike slip, left lateral strike slip, overturned and reverse faults. Several intrusive rocks were identified within Taknar mining area. Based on the effect of regional metamorphism, intrusive rocks were classified into two major groups: 1- Mid-Late Paleozoic and 2- after Paleozoic. Mid-late Paleozoic is mainly composed of granite, granodiorite and diorite. Based on Al-index, they consist mainly of per-aluminous and minor sub-aluminous, and mid to high in potassium content. Tectonic setting are includes intraplate granite (WPG) and minor volcanic are (VAG). Based on REE content and \((L_{a}/Y_{b}) \text{N} = 9.75-2.15\) magma originated from continental crust. Based on magnetic susceptibility, all of them belong to ilmenite series. After Paleozoic intrusive rocks are mainly granite, trondhjemite and quartz monzonite. Except trondhjemite, they are per-aluminous, and the potassium content is mid to high. Spider diagram show enrichment in K, Rb, Ba and Ce and depletion in Sr, Nb, P and Ti. Based on REE content and \((L_{a}/Y_{b})\text{N} = 6.47-4.87\) magma originated from continental

Keywords: Bardaskan, Taknar, granite, structural geology

*Corresponding author, Tel-fax: +98 (0511) 8797275, E-mail: mhkarimpour@yahoo.com