

Mineralogy of Barfakeh Zinc and Lead ore deposit in the NW of shahrood (Introducing some new minerals in this ore deposit)

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(Received:9/1/2008 , in revised form:8/6/2008)

Abstract: The Barfakeh lead and zinc ore deposit is located 40_{km} NW of Shahrood in the East Alborz tectonic zone. The rocks adjacent to this ore deposit include the Shemshak formation, which consists of shale and sandstone with the age in the upper Terias to Lias range, tuffs of the Karaj formation, and Conglomerates of the Fajan formation. The host rock of the ore deposit is the massive limestone of Lar formation with the age of upper Jurassic. The ore deposit, as epigenetic and stratabound and open-space filling, has formed lens and veins with general trend of NW-SE and general dip direction of SW. The Barfakeh ore deposit belongs to the Mississippi-Valley type deposit from the zn rich type. Mineralography and X-Ray diffraction studies reveal that Galena and Cerusite are the major minerals for lead, and Smithsonite and hemimorphite are the major zinc minerals. Sphalerite was not detected in microscopic and even X-Ray diffraction studies. The amount of Galena is also low and in its margins it has been replaced by carbonate minerals. It may be argued that the primary minerals of the Barfakeh ore deposit were presumably sulfide minerals, i.e. Sphalerite and Galena, which have been altered by secondary minerals. Furthermore, based on X-Ray diffraction studies, rare minerals including Magnesite ferroan, Magnesite nickeloan, and Calcite manganoan were recognized.

Keywords: *Mineralogy, zinc and lead, Barfakeh, Shahrood.*