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Mineralogical and Geochemical Evaluation of Clay Minerals of Zonuz Mine, in Marand According to REE & SEM Studies in Comparison with Esteghlal Mine, in Abadeh

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Abstract: The Zonuz irregular lens shaped kaolin deposit located in Marand, Azarbaygan, is exploited as an openpit. Andesite, Trachyandesite and dacite igneous rocks are located in south, west and east parts of the deposit, respectively. The Ore was analysed by XRD, SEM and NAA. Assemblage of major minerals including Quartz, Kaolinite, Illite and Calcite, and minor minerals of Dolomite, Montmorillonite and Limonite are detected.

Geochemical analysis show that La, Ce, Nd are present in minor amounts, and the high ratio of LREE/HREE indicates the enrichment of LREE which is probably the result of surface tension of these elements on clay particles.

Geological and Geochemical evidence indicate that hydrothermal fluids played a major role in the formation of the Ore body, particulary along fault zones.

A comparison is also made between autogentic Zonuz deposit with allogentic Esteghlal deposit.

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