

Types of hydrothermal alteration within the Ilovitza deposit, Republic of Macedonia

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As a result of the recent detailed explorations, made by the company *Phelps Dodge*, and today, extended from the company *EuroMax*, Ilovitza deposit is separated to the polymetallic Cu-Au-Mo porphyry deposit, located within Tertiary intrusive complex, whose mineralization is closely related to intensive hydrothermal alterations of surrounding rocks. It is located in southeastern part of Republic of Macedonia, more precisely on Ograzden mountain, at about 17 km at a distance from Strumica city, near Ilovitza village. In the Republic of Macedonia even and broader, "Ilovitza" deposit represents one of the more significant porphyry deposits of *Cu-Au-Mo*. This deposit represents a part of several porphyry systems in eastern Macedonia and northern Greece, which are in association with igneous complexes and is one of deposits of the type of the deposit Bucovik-Kadiica in Macedonia and Scurries in Greece. In view of the regional geotectonic position, "Ilovitza" deposit belongs to Serbian-Macedonian Massif (*Zagorchev et al., 2008*) and the Serbian-Macedonian Metallogenic Zone (*Jankovic, 1977; Serafimovski, 1990*), in belt, in whose geological construction participate late Proterozoic to Palaeozoic metasediments and granitoids. The processes that took place in the frame of the SMM have caused structure of the volcanic apparatus, domes and regional dislocations, as the Tupal dislocation and dislocation Besna Kobila-Osogovo (*Serafimovski, 1990; Aleksandrov, 1992*). Actually, creation and spatial distribution of the magmatism and the ore are in function of the structural factor of a control or disjunctive-depth structures that are present in the Ograzden granite massif and have direction along the borders of the basic geotectonic units: Serbian-Macedonian Massif and the Vardar Zone (*Serafimovski, 1990*). Hydrothermal alterations, as a special mark of the deposit, with our laboratory examinations, which consisted of X-ray and microscopic examinations of the samples, were determined as an alteration that characterizes porphyry systems (*Rogozareva, 2010*). They are allocated on the basis of the typomorphic and characteristic follow minerals. Between them can be separated the following types of hydrothermal alterations: supergene sulphide alteration, weak propylitic alteration, advanced argillic alteration, quartz-sericite-pyrite ("phyllitic") alteration and potassium metasomatism with the presence of intermediate argillic alteration. In addition, in view of the mineralization especially are interesting deeper parts of the deposit, especially zones and their contact parts where the quartz-sericite-pyrite alteration is developed and potassium metasomatism with the presence of intermediate argillic alteration.

References:

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