

O10-2**DETERMINATION OF KAYSERI CROMITE DEPOSITION
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Geophysical investigations were run to discover mineralized zones of Kayseri field site where the mining activity has been terminated, because of assuming that the deposit had already been finished. Cromite existence, in the field, is similar to Anatolian podyform Alpine type which takes place in ultrabasic rocks situated at the bottom of ophiolitic series. Deposits are placed in two different levels, cumulate at the top and tectonics at the bottom. Cumulates contains layered, disseminated, depends upon the depth. Deposits, belonging to upper tectonics takes place in thick dunits. In general, mineral content is low and in the forms of bands and disseminated with small and medium crystallization`s.

Geophysical studies were run, in 1.4 km of land stations, seperated with 25 to 50 meters of intervals, by using microgravity and vertical gradient, magnetic total field and vertical gradiometer, and electromagnetic-VLF.

According to the tests, average magnetic of cromite is $50 \pm 20 \cdot 10^{-6}$ cgs and it reduces as mineral content increases. It rises up to $250 \pm 50 \cdot 10^{-6}$ cgs in fault zones. It is $200 \pm 200 \cdot 10^{-6}$ cgs for ultrabasics, however gets higher if serpantinization develops. Therefore higher magnetization anomalies do not represent cromites but high degree of serpantinization. Instead shall to medium size anomalies could represent cromite mineralization. Electrical conductivity is lower, if degree of serpantinization is low. However cromite electronically poorly conducts the electrical current and therefore it is only highly conductive at contact zone between host rock and mineralization. Lightest unit is dunit with specific density of 2.47 to 2.7 gr/cm³. others have following values, 2.7 to 2.85 gr/cm³ for harzburgit, 2.17 to 2.94 gr/cm³ for peridotit, 2.8 to 3.04 gr/cm³ for piroksenit, 2.82 to 3.16 gr/cm³ for pegmatite. However, cromite is rather heavier: 3.72 to 4.2 gr/cm³ for refractor, 3.32 for reddish fault zone deposition, 3.14 gr/cm for disseminated. Therefore, higher gravity or gradient anomalies could correlate with either cromite deposits or unfortunately with gabro and with pegmatite daykes as well. However, young ultrabasics definetely have low magnetization. If higher gravity anomalies are accompanied with medium to low size magnetic anomalies, with zero crossing of high negative %IP EM compenent this could be possible signature of a cromite existence. Relatively higher degree of serpantinized zones are represented conductivity magnetization and with higher conductive zones. However, resistivite but lower magnetized places could indicate cromite deposits. Therefore, EM or magnetic methods are not satisfactory if there are not accompanied with the gravity. However intergrated use of these methods leads to the unique solution for cromite prospecting.

Gravity map reveals mineralization zone is along the Bezirgan Creek basin. Total number of possible massive deposits are three. However, only one of them have appreciable geophysical signatures, others need further studies. Small deposits are shallow, varying between 60 to 85 meters and large deposits is deep, 350 meters. Forms of deposits are somewhat a sphere, cylinder or a chimney type. Estimated reserves of deposits varies between 6000 tons to 45 million tons.

KAYSERİ - KARAHACILI GEOPHYSICAL PROFILE PROFILE 0 - 0

