Geological and Geochemical Characteristics of Küre Kastamonu Copper Deposits

M. Kumral, M. Budakoglu, M. Karaman, S.B. Karabel, D. Yıldırım Kıran, and E. Ciftci
Istanbul Technical University, Istanbul, Turkey

The study area was in Küre in the Kastamonu Province of the Karadeniz region. In the research area, magmatic, metamorphic, and sedimentary units are seen together. The oldest unit in the area consists of the Lower Triassic-age ophiolite sequence. The Triassic-Lower Jurassic-age Akgöl Formation overlies the ophiolite sequence. The Triassic-age Küre Lava Member is conformably reversed on the Akgöl Formation. The Upper Jurassic-Lower Cretaceous-age Inaltı Formation unconformably overlies the Kgöl Formation. The youngest unit in the area is Lower Cretaceous-age Ulus Formation, which conformably overlies the Inaltı Formation. Thin-section petrography revealed pyroxene, plagioclase, quartz, serpantinite, muscovite, biotite, and calcite minerals and a few fossil remains in the limestones.

A geologic map for the Küre region’s 20-km² area has been prepared at a 1:25,000 scale, and a cross section was constructed in the mapped area to show structural features of the region. Additionally, a stratigraphic cross section was constructed in order to be able to understand the general stacking pattern of the rock units in the region. Measurements were made on the region’s folds and small-scale faults. The presence of small-scale faults suggests that there may be larger-scale folds and faults in the region. From the observations and examinations within the surveying area, Aşıköy, Toykondu, and Bakibaba massive sulfide deposits appear to be related to ophiolitic volcanic rocks. The Küre region’s deposits have been formed within pillow structured basalts and Cyprus type deposits.

The region’s weald vegetation cover and inadequacy of the samples made it difficult to conduct the intended research. For this reason, it was not possible to understand the geology of the region in the strict sense. Mineralization took place on the northwest of Küre Borough. Additional examination of the region in more detail is recommended. Many small faults were present in the study area, but they could not be mapped. Serpentinization is commonly observed along these fault zones. Samples do not show a significant amount of heavy metals or Ag. Küre copper deposits are important in terms of Cu and Zn but not in terms of the other metallic minerals.