Association of Iron Sulphides with Gold in Lake Victoria Gold field in Tanzania: A preliminary study

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Abstract
There is a resumed gold rush in Tanzania following liberalization of the private sector in 1993. Therefore, the need for finding mineral association with gold for quick location of gold rich areas is particularly high. Although such signatures already exist in some regions, their theoretical basis is still ill defined. The aim of this work is to resolve this problem by collecting and analyzing several rock samples obtained from different area around Lake Victoria gold field. The Energy Dispersive X-Ray Fluorescence technique was used to identify and quantify mineral elements and X-ray Diffraction was employed to identify phases of minerals. The preliminary results from XRF indicated that only five out of the expected gold associated mineral elements are found in Lake Victoria gold field: Fe (1- 24%), Co (4-67ppm), Cu (1-49 ppm), Pb (3-76 ppm) and As (15-88 ppm). Of particular interest is Pb element, which was found in all samples containing gold but gold was not found in all samples containing lead. The results from XRD showed that gold in Lake Victoria occurs in close association with chalcopyrite, pyrite and pyrrhotite. Work is in progress to identify mineral elements and phases, which can be used for quick location of gold rich area in the Lake Victoria gold field.