



Environmental Geochemistry Of Kor River Sediments Near The Petrochemical Complex Of Shiraz, SW Iran

F. Moore and A. Chahardahcherik

Shiraz University, Earth Sciences, Shiraz, Islamic Republic Of Iran (aidachahardahcherik@gmail.com)

Heavy metal contamination in aquatic environments has received a good amount of attention due to toxicity, persistence, and subsequent accumulation in aquatic habitats. The Kor River is 280 Km long and, its drainage basin is situated North East of Shiraz. Nowadays, various industries exist in this region. Water quality problems mainly arise from effluents of a petrochemical complex. In this Study, concentration, occurrence and geochemical behavior of heavy metals, sediment contamination, and bioavailability of metals in river sediments are investigated. Water and sediment samples near the petrochemical complex were collected and analyzed. The results show that many of metals are accumulated in sediments, probably due to pH of the water above 8. Correlation coefficients show that most of the metals are positively correlated with manganese and negatively correlated with organic matter. Hence, organic matter has probably no important effect on the concentration of elements. Calculation of contamination degree indicates that sediments are uncontaminated or slightly contaminated. Cobalt and Cadmium Concentrations are high in bioavailable portions, in the form of iron and manganese oxides and hydroxides. However, low cation exchange capacities of sediments indicate that the Kor River sediments probably act as a sink for trace metals and are not effectively involved in exchanging them. Nevertheless, changes in the potential of the aquatic system may quickly remobilize most of the metals into the solution and present environmental contamination risks to the biological components of river system.

Keywords: Kor River, Heavy Metals, Contamination Degree, Cation Exchange Capacity, Bioavailability.