

## **An Assessment of Heavy Metals in Coastal Sediments of the Caspian Sea, Guilan Province**

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### **Abstract**

The purpose of this study was to measure the concentrations of nickel, vanadium, molybdenum, copper, iron, lead and chromium in coastal sediments collected from 5 sampling sites in Guilan province. Three composite samples were collected from each sampling site in October 2012. After sample preparation, the specimens were analyzed using ICP spectrophotometry. The accumulation pattern of metals in sediment were obtained in the form of V>Cr>Ni>Cu>Pb>Fe>Mo. The results showed a high correlation between metals at all sampling sites. In this study, the highest concentration of vanadium and chromium were obtained from Anzali station and the highest concentrations of nickel and lead were observed in Chubar site. The Haknson ecological risk assessment index demonstrated that the sediments were classified in the class of zero at all sites. Cluster analysis showed that the iron source was independent of the other elements sources. ERL & ERM levels of nickel as an indicator of oil pollution revealed that the region affected by oil pollution, hence continues environmental monitoring is essential at the study areas.

Keywords: *Heavy metals, Sediments, Pollution, Caspian Sea.*

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