

## Assessment of Heavy Metal Distribution in the Gorgan Bay

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### Abstract

Geochemical studies of sediments, water bodies like rivers, estuaries and the sea bed, can be an effective step to find the source and distribution model assessment of environmental pollutants in a region. Sediments are the final destination of heavy metals in aqueous environments, but under the special situation, they can act as a source of water pollution. The presence of heavy metals in aqueous environments causes many risks such as cancer, toxication and etc in organisms. To study of the heavy metals concentration in Gorgan Bay in 15 stations, a core and several surface samples were taken. Fine-grain sediments were used to determine heavy metals concentration (Al, Sr, Ni, As, V, Fe, Co, Mn) applying inductivity coupled plasma-mass spectrometry (ICP-MS). The ratio of metal concentration in surface sediments to the crust sediments of the study area (Enrichment factors) were calculated in all stations and the obtained results showed that this factor was at the range of 3-42 for different metals. Mapping of heavy metals distribution indicates that the input of heavy metals from the river mouth (Grganrud, Nekarud and Gharehsoo) probably is the most important reason for the high enrichment factors. Geochemical indexes (Igeo) for all heavy metals were also determined and only the Igeo for strontium were over the standard.

Keywords: *Sediments, Heavy metals distribution, Gorgan Bay.*

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