Concentration of heavy metals in surface water and sediments of Chah Nimeh water reservoir in Sistan and Baluchestan province, Iran

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Received 7 September 2014; Accepted 6 March 2015

**ABSTRACT**

Heavy metals, which may result from chemical leaching of bedrock, water drainage, and runoff from banks, the discharge of urban industrial and rural agricultural wastewaters, are widely present in water and sediments. Metal concentrations in aquatic ecosystems are usually monitored by determining their concentrations in water and sediment samples. The main purpose of this study was to examine the levels of eight heavy metals (Cr, Cd, Cu, Mn, Fe, Pb, Zn, and Ni) in surface water and sediments in the Chah Nimeh reservoir. Seven sampling sites were predefined in different locations of the reservoir. The concentrations of heavy metals were measured in the surface water and sediments of Chah Nimeh reservoir. A preliminary study of heavy metals in the surface water and sediments was determined. The obtained results showed that, in general, the heavy metal concentrations in water and sediments did not exceed WHO guidelines (except Cd). The concentrations of heavy metals in sediments were found to be considerably higher than those obtained in reservoir water. Generally, heavy metal concentrations of the sediments were found to decrease in the sequence of Fe > Mn > Zn > Ni > Pb > Cr > Cd > Cu. The findings of this study indicated a general absence of serious pollution in the Chah Nimeh reservoir.

**Keywords:** Heavy metals; Major elements; Water; Sediments