

2nd International Conference on Oceanography

July 21-23, 2014 Hampton Inn Tropicana, Las Vegas, USA

Heavy metals contamination of sediments of Bou-Ismaïl Bay (Algeria)

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With an aim of evaluating the metal level of contamination of the sediments of bay of Bou-Ismaïl, 10 samples of surface sediment and two carrots with 30 and 50m of depth were taken. These taking away were carried out along radial coast-broad opposite the mouth of the Mazafran Oued.

The mineralization of the samples of surface and deep sediment was carried out by an acid attack with a combination of hydrofluoric acid (HF) and of water (HNO₃ + HCl, 1/3 V/V). According to the protocol described by A.I.E.A. (2001), each series of analysis was controlled by a sample of intercalibration of certified sediment (IAEA-433). The proportioning of the studied ETM was carried out by spectrophotometry of atomic absorption (SAA) to flame of the type Perkin Elmer® AAnalyst 700.

Contents are highest for the four metals (Cr, Ni, Cu and Zn) analyzed on the surface sediment located in coastal zone. These contents would come in addition to the contributions of the Mazafran Oued and other water emissary, rejections of the tourist complexes located in the zone, of scrubbing of the arable lands charged in manure, and of the activities of the wearing of leisure of Sidi Fredj.

Thus, two Zn, Cu, and Cr peaks were revealed between [12-14] cm in the carrot CI, and between [14-16] cm in carrot CII. The sediments of radial are relatively rich in organic matter; this richness is mainly because of the contributions of the anthropic of the Mazafran Oued. The rate of the pelites (fraction <63µm) highest (49%) is revealed in station 5 located at the center of radial; it can be regarded as a zone of sedimentation.

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