

ABSTRAK

Muara Sungai Tapak Tugurejo Semarang diduga menerima dampak dari buangan limbah industri di sekitar aliran sungai yang mengandung logam berat. Logam berat seperti Hg dan Cr yang ada dalam perairan akan memberikan dampak negatif bagi perairan itu sendiri dan organisme di dalamnya. Tujuan dilakukan penelitian ini adalah untuk mengetahui tingkat pencemaran logam berat Hg dan Cr pada air dan sedimen dimana nilai sedimen di analisis menggunakan indeks *Contamination Factor* (CF), *Geoaccumulation Index* (Igeo), *Pollution Load Index* (PLI) dan *Enrichment Factor* (EF). Sampel air diambil dari 4 stasiun dengan 3 kali ulangan saat surut dan sampel sedimen diambil dari 4 stasiun dengan 4 kali ulangan. Kandungan logam berat dianalisis dengan Spektrofotometer Serapan Atom (AAS) melalui nyala udara dan asetilen. Hasilnya menunjukkan kandungan logam Hg dan Cr pada air antar stasiun berbeda nyata ($P < 0,05$). Pada sedimen, tingkat pencemaran logam Hg berdasarkan CF masuk kategori kontaminasi rendah, sedangkan logam Cr kontaminasi rendah dan sedang. Berdasarkan Igeo logam Hg dan Cr masuk dalam kategori tercemar ringan sampai sedang. Berdasarkan EF, logam Hg dan Cr masuk dalam kriteria pengkayaan cukup dan sedang. Berdasarkan PLI, logam Hg dan Cr masuk dalam kategori tercemar dan tidak tercemar.

Kata kunci : pencemaran, logam berat, muara sungai.



ABSTRACT

Estuarine of Tapak River in Tugurejo Semarang seems to receive the impacts of industrial wastes around it containing heavy metals. Heavy metals such as Hg and Cr in waters would affect negatively waters and organisms. The purpose of this study was to determine the level of Hg and Cr pollutions in water and sediment. In sediment, the pollution levels were analyzed by Contamination Factor (CF), Geoaccumulation (Igeo), Pollution Load (PLI) indexes, and Enrichment Factor (EF). Water samples were collected from 4 stations in triplicates at low tide, and sediment samples were collected from 4 stations in quadruplicates. Heavy metals contents were analyzed with Atomic Absorption Spectrophotometer (AAS) through air and acetylene flames. The results showed that Hg and Cr in water inter-stations were significantly different ($P < 0.05$). Pollution levels of Hg based on CF were in the low contamination category, while for Cr were low to medium. Based on Igeo, Hg and Cr were categorized as lightly to medium polluted. Based on EF, Hg and Cr were classified as sufficient to medium enrichments. Based on PLI, Hg and Cr were defined as polluted and not polluted categories.

Keywords : pollution, heavy metals, estuarine river.

