

**KAJIAN PERSEBARAN LOGAM BERAT
SEBAGAI DAMPAK AKTIVITAS PELABUHAN
DAN STRATEGI PENGELOLAAN LINGKUNGAN
STUDI KASUS DI PELABUHAN TANJUNG EMAS SEMARANG**

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INTISARI

Permintaan jasa pelabuhan yang bertambah meningkatkan aktivitas operasional Pelabuhan Tanjung Emas sehingga diperlukan pengelolaan lingkungan memadai. Penelitian ini bertujuan menganalisis sumber pencemar dan distribusi logam berat Cr, Cu, dan Pb, mengkaji persepsi masyarakat tentang aktivitas pelabuhan terhadap kualitas lingkungan, dan merumuskan strategi pengelolaan lingkungan.

Metode penelitian dengan survei lapangan untuk pengambilan sampel sedimen dan air laut; pengamatan kualitas perairan; serta wawancara. Data sekunder berupa data pasang surut dan arus serta data aktivitas operasional pelabuhan. Analisis data secara deskriptif kualitatif dan kuantitatif.

Cr, Cu, dan Pb hanya teridentifikasi pada sampel sedimen. Cr 0,025 ppm-0,767 ppm, Cu 0,021 ppm-1,459 ppm, dan Pb 0,01 ppm-1,317 ppm yang selanjutnya dibandingkan dengan baku mutu sedimen ANZECC (2000). Titik pengamatan dengan konsentrasi logam berat di atas baku mutu adalah Cr pada Titik 1; Cu pada Titik 1, 2, 4, 5, 7, 8, 9, dan 10; serta Pb pada Titik 5, 7, 8, 9, dan 10. Sumber pencemar Cr, Cu, dan Pb adalah aliran sungai, aktivitas galangan kapal, limbah perindustrian dan antropogenik, serta transportasi laut. Dua konsep persepsi masyarakat yaitu aktivitas dan dampak operasional kawasan terintegrasi pelabuhan dengan industri. Operasional pelabuhan tidak mengganggu aktivitas warga. Dampak lingkungan diantaranya pencemaran logam berat air laut belum dirasakan masyarakat secara langsung. Dampak sosial mampu menyerap tenaga kerja setempat maupun pendatang. Strategi pengelolaan lingkungan berupa sosialisasi kepada warga sekitar lokasi reklamasi, pengawasan penggunaan TPS, pemeliharaan kebersihan pemukiman, membangun infrastruktur untuk mengurangi dampak rob, relokasi pemukiman dan perkantoran, pengawasan bongkar muat, pemeliharaan fasilitas pelabuhan, serta pengawasan operasional industri dan pemeliharaan infrastruktur.

Kata kunci : Logam berat, Pelabuhan, Sedimen, Kualitas perairan, Baku mutu.

**THE STUDY OF HEAVY METALS SPREAD
AS IMPACT OF PORT ACTIVITIES
AND ENVIRONMENTAL MANAGEMENT STRATEGIES
CASE STUDY IN TANJUNG EMAS PORT OF SEMARANG**

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ABSTRACT

The increasing demands of the harbor service improves the operational activity of Tanjung Emas harbor so it needs an adequate environmental management. This research aims to analyze the polluter source and the distribution of heavy metal Cr, Cu, and Pb, and also to research the perception of society about the activity of harbor to the quality of environment, and formulate the strategy of environmental management. The research method with the field survey in taking the sediment sample and sea water; the observation of water quality; and also the interview. The secondary data were the ocean's tidal data, sea's current, and the data of harbor operational activity. The data analysis in this research was conducted qualitatively and quantitatively. Cr, Cu, and Pb were only identified on the sediment sample. Cr 0,025 ppm-0,767 ppm, Cu 0,021 ppm-1,459 ppm, and Pb 0,01 ppm-1,317 ppm which were furthermore compared with the sediment's quality standard ANZECC (2000). The observation point with the heavy metal concentration on the quality standard was Cr in the point 1; Cu in the point 1, 2, 4, 5, 7, 8, 9, and 10; also Pb in the point 5, 7, 8, 9, and 10. The polluter source of Cr, Cu, and Pb was river flow, shipyard activity, industrial waste and anthropogenic, and also sea transportation. Two concepts of people's perception were the activity and operational effect of the region which was integrated with harbor and industry. The activity of harbor did not disturb the activity of people around it. The environmental effect possibly occurred such as the sea heavy metal pollution which did not directly affect the society in the moment. The social effect was it could open job opportunity for the local people or for the newcomers. The strategy of environment management in the form of socialization to the people around the reclamation location, the supervision of the using of TPS, the maintenance of residence's cleanness, the building of infrastructure to decrease the tidal wave effect, the relocation of residences and office buildings, the supervision of loading and discharging, the maintenance of harbor facilities, and also the supervision of industrial activities and the maintenance of infrastructures.

Keywords : Heavy Metal, Harbor, Sediment, Water Quality, Quality Standard.