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ABSTRACTS

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SEASONAL VARIATION IN THE PHYSICAL, CHEMICAL AND BIOLOGICAL PROPERTIES OF SEA WATER AND THE ACCUMULATION OF POLYNUCLEAR AROMATIC HYDROCARBONS AND METALS IN THE SEDIMENTS OF THE LAEM CHABUNG PORT CONSTRUCTION PROJECT

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The seasonal characterization of the quality of sea water and sediments of Laem Chabung port construction area is important to public health. The physical, chemical and biological properties of sea water and sediments from six stations at Laem Chabung port area and nearby villages during the construction were determined. The physical and chemical properties of all the water samples were in the normal range when compared with the standard class 7(standard quality of sea water for industrial zone) of the Pollution Control Department of Thailand. However, the suspended solid at station 2 and 3 which were closed to the construction site were higher than the other areas. The variation of BOD and DO depended on the seasonal change, but were not significantly different in each station. For grease and oil, it was found in every stations only in the rainy season(July, 2000). For the biological parameter, the feacal coliform was found only in station1(public area) in dry season. The concentration of mercury in sea water was low in all stations but for lead the concentration was in the range of 0.43-1.30 ppm depending on the seasonal change. The amount of PAHs in November 1999 (the first sample collection) were high at the port area(station2,3and 4). However, after the explosion at Thai Oil company in February 2000, the amount of PAHs in all station were increased significantly both in March 2000 and July 2000. The accumulation of lead in the sediments at the port area(station 2 and3) were in the range of 5.55-47.90 $\mu g/g$. However, the mercury were in the range of 0.01-0.34 $\mu g/g$. The amount of PAHs in the sediments were in the range of 1.79-7.34 $\mu g/g$. As in water sample, the amount of PAHs in the sediments after the explosion were increased in all stations.