

SPATIAL DISTRIBUTION AND PROPERTIES OF ORGANIC MICROPOLLUTANTS IN SURFACE SEDIMENTS FROM BOHAI SEA

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The spatial distribution and compositional characteristics of DDTs, PAHs and PCBs in surface sediments from Bohai Sea were investigated. The results showed that, the sites with high concentrations of total parent PAHs were mainly located in the coastal areas at Qinhuangdao and Liaodong Bay. As to the compositions of parent PAHs, proportion of low molecular components with 2~3 rings at Liaodong Bay was relatively high, suggesting the petrogenic origins, while the components with 4 or 5 rings were dominant in the other sea areas, indicating the main pyrolytic sources. Compared with the corresponding quality guidelines (ERL), the mean ERL quotients in the shore areas of Qinhuangdao and Liaodong Bay were relatively high, but no exceeding the guideline of 1. As to the spatial distribution of DDTs and PCBs, the highest concentrations occurred in the coastal areas of Qinhuangdao with 12.1 ng/g and 7.7 ng/g, respectively, and in the other sea areas, they were quite low. Moreover, the concentration ratios of DDT to its corresponding metabolites (DDD+DDE) were higher than 1 at the sampling sites in the shore sea areas of Qinhuangdao, Liaodong Bay and Bohai Bay, demonstrated some recent inputs of DDT nearby. The main degradation product of DDT was DDD under the anaerobic conditions. Currently, the levels of DDTs were greater than the corresponding guidelines of ERL with potential ecological risk in the three sea areas mentioned above.

Key words: DDTs, PCBs, PAHs, surface sediments, Bohai Sea

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