

Remediation Effect using Dredged Sediment-Capping Method on Contaminated Bottom Sediment in Ocean Dumping Sites

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In 2015, the concentration distributions of heavy metals and total organic carbons (TOCs) in the bottom sediments of selected stations within ocean dumping sites were analyzed to validate the effects of contaminated sediment capping of dredged materials. The results showed that dredged materials were capped by approximately 10 cm on the bottom sediment and the concentrations of heavy metals and TOCs had been significantly reduced, confirming the capping effect on the remediate, contaminated bottom sediment. The significance of the present study is that it opens up the possibility of dredged materials that are dumped in oceans as waste actually being used as capping materials that can improve the condition of bottom sediment. However, in order for dredged materials to be used in the future as actual capping materials, detailed studies related to marine characteristics of the area being capped, dredged material coating technologies at high water depths (≥ 80 m), strengthening of pre-purification standards for dredged materials, and post-capping monitoring are needed.