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Geochemistry of Mercury in Palos Verdes Sediments

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ABSTRACT

Sediments affected by a major submarine wastewater outfall on Palos Verdes shelf were analyzed for total mercury and organic mercury. In addition, chemical leaching studies were performed to determine the phase partitioning of mercury in these sediments. A statistically significant decline in surface sediment concentrations of total mercury during 1972-1975 may be due to several factors including the reduced emission of wastewater solids. Organic mercury levels up to 21.3 ug/dry kg and 2% of the total mercury were found in sediments near the outfalls; however, the sulfide-rich sediments in the immediate vicinity of the outfalls contained low or undetectable levels of organic mercury. Most of the mercury in these sediments is fixed in a refractory phase, although organic-associated mercury increases in prominence away from the outfalls. In the most contaminated sediments, mercury appears to be accumulating in this refractory phase and, hence, is largely unavailable for introduction into the tissues of local marine life.