



Heavy Metal Concentrations in Bottom Sediment Samples from Izmit Bay

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Izmit Bay is a semi enclosed region located at the southeast of the Sea of Marmara, which is one of the most polluted regions of our country. The bay consists of three parts, connected to each other by narrow openings. Because of heavy industrialization, rapid increase in population, heavy marine and land traffic and other factors, the pollution loading in Izmit Bay increases day after day.

Thirteen heavy metal concentrations were determined in $< 63 \mu\text{m}$ sediment samples collected from 58 stations in the Izmit Bay. Measurements were realized by ICP-MS with aqua regia digestion. In general heavy metal concentrations ranged by Central, Eastern, and Western basins respectively. Also heavy metal concentrations were higher in the Northern costs of the bay.

Average metal concentrations were ranged by $\text{Fe} > \text{Mn} > \text{Zn} > \text{Ba} > \text{Cu} > \text{V} > \text{Pb} > \text{Cr} > \text{Ni} > \text{As} > \text{Mo} > \text{Cd} > \text{Ag}$ respectively. Maximum Fe, Mn, Zn, Cu, Pb, and As concentrations were determined next to liquid and solid loads ports. However maximum Ba, V, Cr, Cd, and Ag concentrations were determined near the fertilizer and petrochemical industry area. Also Pb, Zn, Mo, Cu, Mn, As, Cd concentrations were determined in high levels near metallurgy industry and the Dil Stream shore that carries heavy industrial contaminants from Dilovası Region. Investigated metal levels exceed Probable Effect Levels at least one station among all the stations.