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Contaminant Concentrations and Toxicity of Sea-surface Microlayer Near Los Angeles, California

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ABSTRACT

Sea-surface microlayer samples were collected from six nearshore areas receiving different amounts of anthropogenic inputs. The samples were analyzed for selected trace metals, chlorinated hydrocarbons, and polycyclic aromatic hydrocarbons. The relative toxicities of the samples were determined with fish embryo bioassays.

Contaminant concentrations generally increased from the offshore to the inshore stations. Contaminant concentrations were several orders of magnitude higher in microlayer samples from the highly industrialized Los Angeles and Long Beach harbors compared to samples from a site 15 km offshore. Microlayer samples from the inshore stations were significantly more toxic, and induced significantly more developmental abnormalities and chromosome aberrations, than samples from the offshore stations.