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Leachate Threatens Groundwater Quality

Pollution of groundwater by organic materials leached from land disposal sites occurs extensively and is likely to pose a serious threat to groundwater quality. This conclusion was based on investigations of four wells in Oklahoma. It is important to establish regularly functioning monitoring systems in order to watch future trends in the levels of organic chemical contamination. These organic compounds have a deleterious physiological effect on living organisms and are becoming a potential hazard to the natural environment. The recent findings of polychlorinated biphynels and phthalate esters in the water are good examples. PCBs are a class of chlorinated hydrocarbons. They are quite stable and insoluble in water, but they are soluble in hydrocarbon solvents. These properties indicate that PCBs could persist and accumulate in the environment and up through the food chain. The presence of PCBs at the level of one $\mu g/L$ in natural waters may pose a threat to aquatic organisms and the food chains substained by them. Phthalate esters are other organic compounds dispersed over surface water, ground water, atmosphere, and in the human body. Although the acute toxicity of phthalate esters is low, a cumulative toxic effect over a period of time may endanger aquatic communities, terrestrial and even human life. The environmental problems arising from the tremendous quantities of organic compounds used in all sorts of products are now being brought into focus. The potential for long-term pollution of aquifers by industrial organic chemical leached from discarded manufactured products could someday reach the threshold of natural tolerance and upset the balance of natural ecosystems. The recent decision by the Monsanto Chemical Company to cease production of Arochlor and the new proposal by the Food and Drug Administration to prohibit the uses of certain plastic food packaging and other food contact materials made with vinyl chloride are realistic steps to prevent the spread of organic contamination over the natural environment.

"Organic Leachate Threatens Groundwater Quality." By James M. Robertson, Associate Professor of Civil Engineering and Environmental Science, University of Oklahoma, and Eugene C. C. Li, Design Engineer, Rayburn Country, Inc. *Water & Sewage Works*, February, 1976.

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