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Heavy Metal Contents of Lake Sapanca

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Abstract: The heavy metal pollution of Lake Sapanca located in the Marmara region (Turkey), was investigated over time. The lake is the drinking water source of the city of Adapazarı and its environs. The D-80 (TEM) motorway passes about 5 km along the lake's zero point in the Sapanca district. The motorway's wastewater drainages have been connected to the lake without having been subjected to any wastewater treatment. The motorway was opened to service in October 1990. Analyses were performed in 1991 and were repeated in 1999 in order to observe changes in Pb, Fe and Zn contents. Samples were collected from the ends of the drainage channels opening into the lake and metals were determined using flame atomic absorption spectrophotometry (FAAS). According to the results obtained, Zn levels were found to be lower than the limits. However, Pb and Fe concentrations increased significantly at all points and exceeded the limit values. The concentrations of Pb and Fe may be rising in the lake, and hence there is a need for continued monitoring of the levels of toxic heavy metals in the lake.

Key Words: Drinking water, Natural lakes, Motorway, Metal pollution

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