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Asbestos in Water Supplies of the United States

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The review of available data on the concentrations of asbestos in U.S. water supplies suggests that the majority of water consumers are not exposed to asbestos concentrations over 1 million fibers/Liter. A few populations, however, may be exposed to concentrations over 1 billion fibers/L. Of the 538 water supplies for which waterborne asbestos data are available, 8% have concentrations of fibers over 10 million fibers/L.

The vast majority of asbestos fibers found in U.S. water supplies are under 5 μm in length.

Fiber Concentrations in Water

In 1980, two publications summarized the data on asbestos in drinking water that had been gathered from literature and other U.S. Environmental Protection Agency analytical records (*1,2*). The data are summarized in Table 1. Since that report, a number of studies have provided additional data on asbestos counts in drinking water.

McGuire and Bowers (*3*) have reported billions of chrysotile asbestos fibers in the California Aqueduct system. The reservoirs at the southern end of the State Water Project provide an opportunity for some of the asbestos particles to coagulate with other particles and settle to the bottom. However, concentrations as high as 1.3 billion fibers/L were reported at one water plant intake, and the maximum asbestos concentration in the effluent of one plant (i.e., in the drinking water) was 200 million fibers/L. The authors also reported variable asbestos concentrations up to 13 million fibers/L in the Colorado River water delivered to southern California. No evidence of amphibole fibers was found in either source of supply. Other data from the California Health Department indicate that some small water supplies in northern California have asbestos concentrations over 100 billion fibers/L (S. Hayward, Calif. Dept. of Health personal communication).

Table 1. Distribution of reported asbestos concentrations in drinking water from 406 cities in 47 states, Puerto Rico, and the District of Columbia.

Highest asbestos concentration, 10^6 fibers/L	Number of cities	Percentage
Below detectable limits	117	28.8
< 1	216	53.2
1–10	33	8.1
> 10	40	9.9
Total	406	100

The source is apparently natural erosion of serpentive minerals in the watershed. The water has very little turbidity, and no filtration treatment is employed for these northern California systems.

Data from both Canadian and U.S. sources (*4*) show concentrations of fibers as high as 100 billion fibers/L in the Sumas River, which flows into Canada from the State of Washington. The Yukon River, which is shared by Alaska and Canada, has been reported to have asbestos concentrations as high as 1 billion fibers/L for amphibole and 100 million fibers/L for chrysotile (*5*).

A report of asbestos in the groundwater of northern New Jersey was published by Germaine and Puffer (*6*) in 1981. They found 4.7 million fibers/L of crocidolite in the well water of the Mendham Borough water supply. Similar crocidolite fibers were found in samples of the local bedrock. In general, there are few reports of asbestos in groundwater sources. Earlier work showed groundwater asbestos concentrations as

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