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EPA Drinking Water Standard for Arsenic

The Environmental Protection Agency (EPA) is finalizing a regulation to reduce the public health risks from arsenic in drinking water. The Agency is revising the current drinking water standard for arsenic from 50 parts per billion (ppb) to 10 ppb. This revision will provide additional protection for 13 million Americans against cancer and other health problems, including cardiovascular disease and diabetes, as well as neurological effects.

Background

Studies have linked long-term exposure to arsenic in drinking water to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate. Non-cancer effects of ingesting arsenic include cardiovascular, pulmonary, immunological, neurological, and endocrine (e.g., diabetes) effects. Short-term exposure to high doses of arsenic can cause other adverse health effects, but such effects are unlikely to occur from U.S. public water supplies that are in compliance with the existing arsenic standard of 50 ppb.

The current standard of 50 ppb was set by EPA in 1975, based on a Public Health Service standard originally established in 1942. A March 1999 report by the National Academy of Sciences concluded that the current standard does not achieve EPA's goal of protecting public health and should be lowered as soon as possible.

On June 22, 2000, EPA proposed a new drinking water standard of 5 ppb for arsenic and requested comment on options of 3 ppb, 10 ppb and 20 ppb. EPA evaluated over 6,500 pages of comments from 1,100 commenters. Under the Safe Drinking Water Act Amendments of 1996, EPA is required to issue a final rule by January 1, 2001 and Congress subsequently extended this date to June 22, 2001.

Final Rule

EPA is setting the new arsenic standard for drinking water at 10 ppb to protect consumers against the effects of long-term, chronic exposure to arsenic in drinking water. EPA is using its discretionary authority under the 1996 Amendments to the Safe Drinking Water Act to set the standard at a level that "maximizes health risk reduction benefits at a cost that is justified by the benefits."

The new standard will apply to all 54,000 community water systems. A community water system is a system that serves 15 locations or 25 residents year-round, including most cities and towns, apartments, and mobile home parks with their own water supplies. EPA estimates that roughly five percent, or 3,000, of community water systems, serving 11 million people, will have to take corrective action to lower the current levels of arsenic in their drinking water.

The new standard will also apply to 20,000 water systems that serve at least 25 of the same people more than six months of the year, such as schools, churches, nursing homes, and factories. EPA estimates that five percent, or 1,100, of these water systems, serving approximately 2 million people, will need to take measures to meet the new arsenic standard. Of all of the affected systems, 97 percent serve fewer than 10,000 people each.

Arsenic Occurrence

Arsenic occurs naturally in rocks and soil, water, air, and plants and animals. It can be further released into the environment through natural activities such as volcanic action, erosion of rocks, and forest fires, or through human actions. Approximately 90 percent of industrial arsenic in the U.S. is currently used as a wood preservative, but arsenic is also used in paints, dyes, metals, drugs, soaps, and semi-conductors. Agricultural applications, mining, and smelting also contribute to arsenic releases in the environment.

Higher levels of arsenic tend to be found more in ground water sources than in surface water sources (i.e., lakes and rivers) of drinking water. Compared to the rest of the United States, western states have more systems with arsenic levels greater than 10 ppb. Parts of the Midwest and New England have some systems whose current arsenic levels are greater than 10 ppb, but more systems with arsenic levels that range from 2-10 ppb. While many systems may not have detected arsenic in their drinking water above 10 ppb, there may be geographic "hot spots" with systems that may have higher levels of arsenic than the predicted occurrence for that area.

Cost

The average increase in household cost for water that meets the new arsenic standards depends on the size of the water system and how many people are served by that system. For small community water systems (those serving fewer than 10,000 people), the increase in cost is expected to range between $38 and $327. For community water systems that serve greater than 10,000 people, annual household costs for water are expected to increase from $0.86 to $32.

Systems may apply for financial assistance through EPA's drinking water state revolving fund. Since 1996, EPA's drinking water state revolving fund program has made available $3.6 billion to assist drinking water systems with projects to improve their infrastructure. EPA has funded over 1000 loans for projects around the country. In addition to financial assistance, compliance period extensions of up to 9 years (resulting in a total compliance period of 14 years) are available to small systems through an exemption process.

More Information

For general information on arsenic in drinking water, contact the Safe Drinking Water Hotline at (800) 426-4791, or see arsenic information on EPA's Safewater website at http://www.epa.gov/safewater/arsenic.html on the Internet.