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NEW EPA ARSENIC RULE TO IMPACT PUBLIC WATER SOURCES

Enforcement of the EPA's Arsenic Rule begins January 2006.

(Appleton, Wis) – January 23, 2006 is the final implementation date of the EPA's Arsenic Rule. Arsenic, a naturally occurring element in rocks and soil, air, plants and animals is a slow poison that has been linked to numerous forms of cancer resulting from long-term exposure. Public water systems providing water to more than 25 people on a daily basis will be required to meet the updated and more stringent rule which reduces acceptable arsenic levels from 50 parts per billion (ppb) to 10 ppb. Municipalities, managers and business owners may be wondering what this new standard is, how this will affect their operations, where to go for testing, or how to make sure their systems are in compliance.

The EPA Arsenic Rule, as it has been referred to since published in the Federal Register on January 22, 2001 and adopted on February 22, 2002, is “an adjustment to the inorganic section of the Safe Drinking Water Act,” according to Carol McCurry, a Water Supply Specialist with the Wisconsin Bureau of Drinking Water and Ground Water. The Safe Drinking Water Act established in 1974 (and amended in 1986 and 1996), grants the Environmental Protection Agency the authority to set drinking water standards to control contaminant levels in drinking water.

The 1996 Amendments to the Safe Water Drinking Act require that several assessments be initially performed before the EPA can determine whether setting a new standard is appropriate for a particular contaminant. This evaluation includes such factors as the contaminant's natural occurrence in the environment, human exposure and the risk of adverse health effects, analytical methods of detection, technical feasibility, and the impacts of the regulation itself. Due to the health risks associated with arsenic, the new drinking water standard was installed and January 23, 2006 was established as the date by which all systems must comply.

Those affected by the new standard are public water systems that provide water for human consumption through at least 15 service connections, or regularly serve at least 25 individuals or more.

Additional water systems that will be monitored are community wells, such as municipalities, and non-community wells that are labeled as non-transient. This type of well classification is given to schools, for example, as the population is at the location of the water system on a regular basis. Private wells and non-community transient wells such as those at gas stations and restaurants where patrons are not at these establishments on a regular basis, will not be monitored for the new arsenic standard. However, the EPA and the Department of Natural Resources (DNR) recommend that these well users do perform annual testing for bacteria, nitrates and organic and inorganic compounds.

According to McCurry, regular testing is required and monitored by the DNR in each individual state. A typical testing cycle includes a three-year rotation where all municipalities are tested the first year, non-municipality entities the following year, and non-community non-transient firms the last year.

If a water system is found to be out of compliance, quarterly testing is required. If, over the course of the four quarterly tests, the average remains above the standard, the firm or business must take action to achieve compliance. If the initial test is high enough, the EPA or DNR may recommend that immediate action be taken to bring the system into compliance.

State-certified laboratories are the most qualified source for water testing. Do-it-yourself test kits are available on the market; however, these tests are not as accurate or concise as state-certified lab tests as indicated by McCurry. Clean Water Testing, a subsidiary of Water-Right, has been testing for arsenic and other organic and inorganic compounds for over 20 years. As a state-certified laboratory, Clean Water Testing lists the fact that arsenic does not follow a specific pattern as the primary challenge of tracking arsenic in groundwater. Elevated levels of arsenic may be found in one well but not in a partner well located only 300 feet away. Further, a well that tests normal one day may test at an unacceptable level the next. Arsenic levels may change due to natural environmental actions or agricultural activities such as mining or smelting. Approximately 90 percent of the industrial arsenic in use is in the form of wood preservatives; however, arsenic is also used in soaps, metals, drugs, paints and dyes. These factors emphasize the need for regular testing and monitoring.

Several tests used to identify arsenic in drinking water include:

- Mass Spectrometry/Inductively Coupled Plasma
- Electro-Thermal Atomic Absorption Spectrometric Method
- Manual Hydride Generation/Atomic Absorption Spectrometric Method

- Silver Diethyldithiocarbamate Method

An example of elevated arsenic levels affecting public water systems recently occurred in Wisconsin's Fox Valley area. The Neenah Joint School District learned arsenic levels in water from the well supplying the school system were increasing. The discovery surfaced following regular scheduled testing performed by Water-Right's Clean Water Testing.

An atomic absorption furnace utilized by Clean Water Testing aided in the definitive test results. These findings led to a decision by the school district to temporarily bring in bottled water to Clayton Elementary School while a new well was drilled. The temporary water supply was provided in the form of five-gallon water coolers by Clean Water Testing. With a new well now in place, Clean Water Testing reports that continuing two-week arsenic baseline samples are within the safe limits of both the current federal arsenic limits as well as the new, more stringent EPA Arsenic Rule guidelines. Development in the area has drawn down the water table which allowed oxygen to enter the aquifer triggering chemical reactions that released arsenic into the groundwater. To eliminate the problem, a new casing was installed to seal off the upper aquifer.

While the EPA regulates public water systems, it does not have the authority to monitor private drinking wells. Approximately 15 percent of Americans rely on their own private drinking water supplies. Some local government agencies set regulations on these systems, but the private wells are not subject to EPA standards. Consequently, the EPA and DNR agencies highly recommend that private well owners follow a testing routine similar to that of public wells in order to maintain the highest quality drinking water.

For Further Information:

Environmental Protection Agency: www.epa.gov

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Caption: An example of arsenic commonly found in bedrock, usually found in combination with sulfide minerals.

