



Radionuclides in Water

Radioactive materials can enter water in several ways:

- By being deposited in surface water from the air;
- By entering ground water or surface water from the ground through erosion, seepage, or human activities such as mining, farming, storm water, and industrial activities; and
- By dissolving from underground mineral deposits as water flows through them.

Some radioactive particles dissolve and move along with the water. Others are deposited in sediments or on soil or rocks.

Most drinking water sources have very low levels of radioactive contaminants. Because these levels are very low, they are not considered to be a public health concern. Radon, from radium sources in the ground, is a special case of dissolved gas that can be at higher levels.

Health becomes a concern when radionuclides become concentrated in these bodies of water due to natural occurrences, accidental releases of radioactivity, or improper disposal practices.

Drinking Water

Drinking water can come from either ground water sources (e.g., wells) or surface water sources (rivers, lakes, streams, etc.). Water can pick up radioactive material as it flows through the rocks, soil or cracked cement surrounding a water source, therefore contaminating that water source.

Large metropolitan areas rely on surface water, while many rural areas use ground water. To find the source of your drinking water, check your annual water quality report or call your water supplier.

Most drinking water sources have very low levels of natural radioactive contaminants and are not considered to be a public health concern.

Water systems that are vulnerable to man-made radioactive contamination are required to undergo extensive monitoring to ensure that the drinking water is safe.

Who is protecting you

U.S. Environmental Protection Agency (EPA)

The Safe Drinking Water Act (SDWA) directed EPA to set standards for drinking water contaminants, including radionuclides, that may adversely affect human health. EPA's drinking water standards include a maximum contaminant limit, which drinking water plants must monitor for and report their finding in their annual reports, and a low contaminant goal for which drinking water plants should strive. Public water supplies must comply with EPA's national primary drinking water regulations, which are based on the Agency's drinking water standards. If a drinking water plant is over the maximum contamination limit they must take action to lower the contamination level.

The Federal Water Pollution Control Act (as amended by the Clean Water Act) prohibits the discharge of radioactive wastes or other pollutants into U.S. navigable waters without a permit and protects ground water from pollutants from underground wells and mines. EPA and authorized states have the authority to issue permits in accordance with water quality standards.

EPA also monitors drinking water and precipitation across the nation using their monitoring system, RadNet (formerly called ERAMS, Environmental Radiation Ambient Monitoring System).

The States

Each state regulates the discharge of wastes into waterways and ensures that this waste does not include radioactive materials. Under authorization of EPA, the majority of states develop and implement their own drinking water standards that are as strict, if not stricter, than EPA's Safe Drinking Water standards.

What can you do to protect yourself

Protecting our drinking water is a community-wide effort, beginning with the protection of water sources, and including education, funding, and conservation. Specifically, you can do the following:

- Call your local water supplier to find out if your community participates in radiation-mitigating activities.
- Support efforts to improve operation, maintenance, and construction of water treatment processes. States are now engaged with communities in identifying and assessing water sources.
- Contact your state water source protection program to find out how to get involved in this process, or join a local group in Adopting a Watershed.

Resources

You can explore this radiation source further through the resources at the following URL:
<http://www.epa.gov/radtown/water.html#resources>

We provide these resources on-line rather than here so we can keep the links up-to-date.