

## **RADON IN WATER**

The primary source of radon in homes is from the underlying soil and bedrock. However, an additional source could be the water supply, particularly if the house is served by a private well or a small community water system. The radon in the water can be released during activities such as showering, dishwashing, or any other type of water use in the home. Radon that is released from the water can contribute to the already existing radon levels in the air, making the inhalation risk greater.

To estimate how much of the radon in the air is caused by radon in the water, use the following rule of thumb. For every 10,000 picocuries per liter (pCi/L) of radon in the water, 1 pCi/L would be emitted into the air. For example, if there are 40,000 pCi/L in the water, approximately 4 pCi/L would be emitted into the air of the home, above what is already there.

If a home has been found to have radon in air concentrations greater than the U.S. Environmental Protection Agency (EPA) Action Level of 4 pCi/L and the home is served by a private well or a community well, i.e., underground sources, the homeowner should also consider testing the water for radon. Many public water supplies use surface water, which tends to have lower radon levels. If there is concern about the public water supply, the public water supplier should be called. Testing for radon in water is not very expensive (\$25 to \$50) and is fairly easy for a homeowner to do.

Radon in water can be effectively reduced using one of two methods: aeration treatment or granular activated charcoal.

Aeration involves spraying the water or mixing it with air and then venting the radon. Granular activated charcoal systems filter the water through a charcoal bed. The radon is retained in the charcoal, and the water leaves the charcoal tank relatively free of radon. The charcoal needs to be replaced periodically, usually every one to two years to prevent the buildup of radioactivity on the charcoal bed.

In both of these treatment methods, it is important to treat the water where it enters the home. Trying to treat the water at the kitchen sink, for instance, would not be effective in reducing the amount of radon that enters the home. It is important to properly maintain home water treatment systems according to manufacturer's recommendations, because failure to do so can lead to other water contamination problems. Aeration systems cost approximately \$3,000 to \$4,000. Charcoal systems cost approximately \$1,000 to \$1,500.

Currently, there is no standard for radon in public water supplies. The EPA has proposed a maximum contaminant level (MCL) of 300 pCi/L; however, this MCL has not been adopted.

Private wells are not regulated under the federal Safe Drinking Water Act. If adopted, the MCL for radon in public drinking water may provide useful guidance for individual homeowners on private wells and will likely be of interest to home buyers and sellers. The Safe Drinking Water Hotline (800-426-4791) can provide general information on radon in water and information on how to find a testing laboratory. The National Radon Hotline at 800-SOS-RADON (800-767-7236) can provide guidance on testing indoor air for radon.

For more information, please contact the Safe Drinking Water Hotline at 800-426-4791, or go to EPA's homepage for drinking water at the following link: [www.epa.gov/ground-water-and-drinking-water](http://www.epa.gov/ground-water-and-drinking-water).

For further information on radon in water, contact the state radon office (800-237-2366).

For more information, visit [www.dep.pa.gov/radon](http://www.dep.pa.gov/radon).

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