

ANR-790-2.3.13

ALABAMA A & M AND AUBURN UNIVERSITIES

Typical Contaminants And Problems

Radionuclides (Radon)

Radionuclides in well water are not believed to cause a significant health risk from ingestion. However, in some homes radon levels in the air are high enough to pose significant health risks. Excessive levels can cause lung cancer. The presence of radium in drinking water is not of great concern because it is not retained in the body.

Sources Of Radon

Radon, a naturally occurring invisible radioactive gas, seeps out of the ground and is found in most groundwater. It is produced by a radioactive decay process that starts with uranium that has been present in the crust of the earth since its formation. Radon levels in Alabama are greatest in water from granite containing the micas, muscovite, and biotite. Other sources include quartz, monzonite, granite, high- and low-grade metamorphic rocks, and diorite.

Radionuclide problems are more frequent and severe in low-yield private groundwater supplies than in community supplies. The highest observed radon levels have been associated with formations of uranium-bearing granite.

Testing For Radon

Well owners who have elevated indoor radon levels should have their wells tested for radon. Radon in your water supply can increase your indoor radon level; however, in most cases, the source of radon in your home is more likely to be the soil than the water.

Treatment Of Radon

EPA has been trying to set a maximum contaminant level for radon in public water supplies since July of 1991. Suggested levels for regulation have ranged from a low of 25 pCi/L to a high of 20,000 pCi/L.

When To Treat: Removal of radon from private water is recommended when the concentration is 10,000 pCi/L or greater. The abbreviation pCi stands for picocuries. This recommendation is based on the

premise that 1 pCi/L of radon is released to the air for 10,000 pCi/L of radon in water.

At least two tests are needed to determine the overall presence of radioactivity in water. A screening technique, gross alpha particle analysis, is used to make a preliminary evaluation for the presence of mineral radionuclides. A test specifically for radon gas in water must also be conducted. The testing should be done by a reliable laboratory and could cost more than \$50.

How To Treat: Aeration is very effective for removing radon from drinking water. Radon in the water is removed by degassing and venting to the atmosphere above the roof line. If iron, manganese, or hydrogen sulfide is present in the water, the aerator devices should be cleaned periodically to remove particulate accumulation. Home aeration units (diffused bubble and spray) do not appear to accumulate radioactivity; however, bacterial growth may be a problem. Activated carbon filters are also effective in removing radon. Disposal of these filters may require special handling.

Radon At A Glance

Symptoms: No effects on odor and taste of water; special tests showing radon levels of 10,000 pCi/L or greater.

Causes Of The Problem: Natural radon and radium in some granite and sandstone aquifers.

Suggested Treatments: Activated carbon filter or aeration.

For More Information: Call the Safe Drinking Water Hotline at 1-800-426-4791 or state radon contact at 1-800-582-1866. In Montgomery call 334-242-5313.

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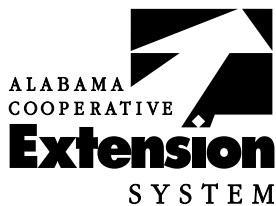
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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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