



# FACT SHEET

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Connecticut Department of Public Health  
Environmental Health Section  
410 Capitol Ave, PO Box 340308  
Hartford CT 06134-0308  
(860) 509-7740  
<http://www.dph.state.ct.us>

## What You Need To Know About: **Naturally Occurring Radium in Private Well Water**

*Radium is found in some public and private groundwater drinking water wells within Connecticut. The US Environmental Protection Agency requires regular monitoring of radium concentrations in community water systems, which are water systems with at least 15 service connections or that serve 25 or more persons year-round. Non-Community systems such as schools are not required to test for radium. Private bedrock wells can also contain radium, but testing in these wells is the responsibility of the owner.*

*This fact sheet addresses some of the health concerns and treatment questions about exposure to naturally occurring radium, a radioactive element. For more information about radium, refer to the contact information at the end of this document.*

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### **What Is Radium?**

Radium is a naturally occurring radioactive element that is present, in trace amounts, in rocks and soil within the earth's crust. Small quantities of radium derived from these sources are also present in bedrock water supplies. In the early 20<sup>th</sup> century radium was used for making self-luminescent watch dials. The premature deaths of five "Radium Girl" employees who had used radium-based luminous paints focused public attention on the need for legislation to protect worker health.

### **What Is The Hazard Associated With Radium In Drinking Water?**

Radium in water can pose a hazard to human health when the water is used for drinking. Upon ingestion, some radium is absorbed into the body and deposits in the bone. Radiation emitted in the form of sub atomic particles may then damage cells. While the body can normally repair these damaged cells, in rare circumstances the damage can lead to bone or other cancers.

### **Is There A Safe Level Of Radium In Drinking Water?**

It is assumed that any radiation exposure from any source carries with it some degree of risk. With regard to radium in drinking water, the USEPA has established a maximum containment level (MCL) of 5 picocuries per liter (pCi/L). When drinking water contains radium at concentrations consistently above 5 pCi/L, it means that the water does not meet EPA's quality standards. A person drinking radium-containing water at the MCL receives a very low dose of radiation equivalent to approximately one percent of the average dose of background radiation.

### **How Can I Make Sure That My Well Water Safe For Drinking?**

Well owners concerned about radium should first test for naturally occurring uranium for three reasons: First, compliance data from Connecticut public wells indicates that uranium problems are more numerous than radium problems; secondly, a uranium test is cheaper than a radium test; and thirdly, if you have a uranium problem, and install treatment, then this will also provide the solution to any possible radium problem. For more information on uranium testing, see the DPH fact sheet for naturally occurring uranium. Should you decide that you would like to know how much radium is in your well water, then tell the laboratory that you want a test for "combined radium" (Ra-226 plus Ra-228). To obtain a list of State-certified laboratories, go to the DPH home page (<http://www.ct.gov/dph>), click on "Environmental Health", and then click on "Environmental Laboratories". Search the document for labs testing "radiochemicals" in drinking water. A radium test costs about \$200. If you do have radium at a concentration greater than the EPA standard of 5 pCi/L, CT DPH recommends that you install a "point of use" reverse osmosis system in your home. See our uranium in drinking water fact sheet for more information on point of use reverse osmosis systems.

### **Whom Can I Contact For More Information?**

For answers to questions about radium in drinking water, contact the State Health Department. Details are shown below.

#### **Health Questions:**

CT Dept. of Public Health  
Environmental Health  
Section  
Environmental &  
Occupational Health  
Assessment Program  
**(860) 509-7740**  
PO Box 340308, MS #  
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Hartford, CT 06134-0308  
<http://www.ct.gov/dph>

#### **Treatment Questions:**

For technical advice on well  
water construction,  
maintenance, quality or  
treatment contact your Local  
Health Department or the  
Department of Public Health,  
Private Well Program at **860-  
509-7296**.

#### **State Certified Laboratories:**

First go First go to the DPH home  
page (<http://www.ct.gov/dph>);  
click on "Environmental Health",  
click on "Environmental  
Laboratories", and then scroll  
down to "List of Laboratories".