

Radon occurs naturally in most rocks and soils

Why the high levels in the Butte region? Look to the granite mountains

Dear Science Mine: In Butte, many people do radon tests in their homes, and some even have radon detectors and special radon venting systems. Where does radon come from, and why is there so much of it in Butte?

— Shirley van der Veur, Butte

Science Mine



KATE MILLER

Where does radon come from?

Radon occurs naturally in most rocks and soils. Radon is an invisible, colorless and odorless gas. Radon is a product of the radioactive decay of uranium, and very low concentrations of uranium occur

naturally in many rocks. The U.S. Environmental Protection Agency recommends that the annual average level for radon in indoor air does not exceed 4 picoCuries per liter (pCi/L). A pCi/L is a unit of radioactivity used to describe radon concentrations in a volume of air.

Radon levels in building basements are generally higher than those on the main or upper floors. Negative air pressure is a driving force that causes radon to migrate

into buildings through cracks, sump-holes, wall joints and other openings in foundations. Negative air pressure is caused by furnace combustion, ventilation devices, and the stack effect (warm air escaping from the upper floors of buildings causing temperature- and pressure-gradients). Wind and heavy rainfall can also increase the movement of radon into a house.

If ground water contains high levels of radon, de-gassing of radon from water can also contribute radon to indoor air through common household activities such as showering, etc.

Why is there so much radon in Butte?

Some rock types, such as granite, contain more uranium than others and thus produce more radon. The rocks surrounding most of Butte are granite. Fresh granite can be recognized as a pale gray rock that weathers to a reddish brown color. Most homes in the Butte area are located on this weathered granite and hence, have a relatively high exposure to radon.

In 1992, 63 homes in the Butte area were measured for radon in air. Twenty-one homes contained less than 4 pCi/L, 33 ranged from 4-20 pCi/L, 8 ranged from 20-50 pCi/L, and 1 was between 100-135 pCi/L.

It is important to test your home for radon. There are some economical ways to

reduce radon in homes. For assistance with testing and radon reduction call:

- Brian Green, Montana DEQ (1-406-444-6768),
- American Lung Association (1-800-LUNG-USA), or
- National Radon Hotline (1-800-SOS-RADON)

For information on radon in air and ground water, you can obtain, *Radon and You: Promoting Public Awareness of Radon in Montana's Air and Ground Water*, IP 3, by calling the Montana Bureau of Mines and Geology (496-4167).

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