

ABSTRACT

Joint paper of Marvin Goldstein and Tony Lamastra.

What happens when you do over a thousand radon inspections preceded by grab samples? What percentage of houses do you discover above the EPA action level that you wouldn't have found using only charcoal, working level monitors or eperms? The paper will compare grab samples taken at the time of placement and/or pickup of charcoal, eperms and continuous monitors used to evaluate radon levels over a 1 - 5 day period. The authors will show that grab sampling can be an effective method of discovering test interference.

Grab Sampling as a Method of Discovering Test Interference.
or
What Happens When You Do Four-Hundred and Seventy-Seven (477)
Radon Inspections Preceded by Grab Samples?

After compiling the data obtained from conducting 477 radon inspections, over a four-year period, it can be concluded that performing a one-hour working level monitor test is useful in determining that two to seven day E-Perm or charcoal canister tests have not been tampered with. Duplicate readings increase the confidence that the readings are accurate.

Of the 477 tests conducted from October, 1987 through June, 1990, 107 tests had high readings (above .02 WL or 4 pCi/l). Of those 107, 15 one hour Thomson Nielson Monitor Tests revealed levels above .02 WL when the longer term test had provided readings below 4 pCi/l.

These figures indicate that tampering occurred approximately fifteen percent (15%) of the time when I found high readings.

The working level monitor tests served as an indicator of possible tampering when compared to the E-Perm or charcoal reading.

Attached to this report is a complete list of all 477 readings.

Six of the fifteen discrepancies were followed up after settlement and, in every case, the one hour working level monitor result, was confirmed, indicating elevated radon levels.

The following examples illustrate tampering that occurred with multi day tests entrusted to sellers or their agents.

An expensive new house, upon first inspection, had a 1 hour working level monitor reading of .65. This high reading made the buyers suspicious and on two occasions they observed all of the windows were open in the house during the 2 day test period. The E-Perm reading was 3.0 pCi/l from this test in the basement.

After the buyers moved in, a follow-up test revealed between 80 and 90 pCi/l in the home!

At an attorney's house, the realtor tried to talk me out of conducting a radon test. I insisted that I was hired to do the testing. The buyer also said that he wouldn't buy without a radon test. The realtor allowed the testing.

The home measured .08 WL with a one hour working level monitor. The 2 day test showed between 2 and 2.5 pCi/l. After a \$2000.00 escrow account was set up at settlement, a retest showed a reading of 20 pCi/l.

In another case, I asked the realtor if the home had ever been inspected before. The realtor said the house had been tested and the result was a low radon reading.

My first 1 hour working level monitor reading was .05 WL. The E-Perm test showed 3.5 pCi/l.

When the seller was asked if the house had been inspected previously, he responded that the basement and the first floor had been tested. The readings showed 6.0 pCi/l in the basement and 2.0 pCi/l on the first floor.

My retest showed a basement reading of 6.5 pCi/l and a first floor reading of 3.5 pCi/l.

In these examples we can see how grab sampling served effectively as an early warning system to help detect tampering.

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