

Understanding Your Radon Test Results: A Practical Guide for Jefferson County Homeowners

When I first started working with homeowners in Jefferson County, I noticed a pattern. People would order a radon testing kit, run the test, and then stare at the numbers on the report like they were written in a foreign language. I have seen this happen in Arnold, Festus, High Ridge, and Hillsboro. The confusion is understandable. A radon test result is not like a blood pressure reading or a credit score. It does not come with a simple green light or red light. There is context. There are thresholds. And there is a lot of misinformation floating around.

The Environmental Protection Agency has set what they call the radon action level at 4.0 picocuries per liter. That number gets thrown around a lot. But what does it actually mean? And what should you do if your radon test results come back at 3.9, or 4.1, or 12.0? I have worked with Air Sense Environmental on enough homes in this county to know that the answer is rarely as simple as a pass or fail. Let me walk you through how to read your results, what the numbers really mean, and what steps you should consider next.

The Basics of Radon Measurement

Radon is measured in picocuries per liter of air. A picocurie is a tiny unit of radioactivity. The EPA estimates that roughly one in fifteen homes in the United States has an elevated radon level. In Jefferson County, with its underlying geology of limestone and granite, the numbers can be higher than the national average. I have personally seen results from 2.0 all the way up to 45.0 in homes less than a mile apart.

There are two main ways to get your [radon test results](#). The most common is a short-term test, usually using Charcoal testing or a similar passive device. You place the radon testing kit in the lowest lived-in level of your home, leave it for two to seven days, and mail it to a lab. The lab sends back a report. The second method is a long-term test, which runs for 90 days to a year. Long-term tests give a more accurate picture of your year-round average exposure because radon levels can fluctuate with weather, season, and how often you run your HVAC system.

Both methods have their place. But they can produce very different numbers for the same house. That is one of the first things I explain to homeowners who are confused by their radon test results.

What the Numbers Actually Mean

Let me give you an example from a home I worked on in Arnold. The homeowner ran a short-term test during a rainy week in March. The result came back at 6.8. That is above the EPA

action level. They called Air Sense Environmental, worried. I ran a Continuous Radon Monitor in the same spot for 48 hours. The monitor logged hourly readings. Some hours were as high as 9.2. Others were as low as 2.1. The average over 48 hours was 5.9. Still above the action level, but the picture was more nuanced than a single number.

Another home in Festus tested at 3.8 with a Charcoal testing kit. That is technically below the action level. But the homeowner had young children who slept in the basement. The EPA recommends considering mitigation for levels between 2.0 and 4.0, especially if people spend a lot of time in the affected area. The homeowner decided to install a radon mitigation system anyway. After sub-slab depressurization and a RadonAway radon fan, the post-mitigation test came back at 0.9.

The point is that radon test result interpretation is not just about whether you are above or below 4.0. It is about your specific living situation, the duration of the test, the season, and the consistency of the readings.

Common Mistakes in Reading Results

I have seen people make a few recurring errors when they get their radon test results back. One is treating a single short-term test as the final word. Radon levels can vary wildly from day to day. A short-term test is a snapshot, not a movie. If you get a result near the action level, it is worth running a follow-up test before making any decisions.

Another mistake is ignoring the test conditions. The instructions that come with a radon testing kit are specific for a reason. You need to keep windows and doors closed for at least 12 hours before and during the test. You cannot run whole-house fans or window units. You need to place the kit in a room that is used regularly, not in a crawlspace or an unfinished storage area. I have seen people put the kit in a bathroom with the exhaust fan running. That will skew the reading low. I have also seen people put it in a sunroom that gets opened every afternoon. That will skew it too.

A third mistake is assuming that a low result means you are done forever. Radon levels can change over time. New foundations settle. Cracks develop. Sump pumps can create new pathways. I recommend that homeowners in High Ridge and Hillsboro retest every two years, or after any major renovation that affects the foundation or the HVAC system.

When to Call a Professional

If your radon test results come back above 4.0, the EPA recommends fixing your home. That usually means hiring a certified radon mitigation contractor. Air Sense Environmental has done this work in Jefferson County for years. The most common fix is sub-slab depressurization. This involves running a radon vent pipe from below the concrete slab up through the roof, with

a radon fan that creates negative pressure under the slab. The fan vents the radon gas safely outside. The system is quiet, unobtrusive, and typically costs between \$800 and \$1,500 depending on the complexity of the house.

Sometimes the fix is simpler. I worked on a home in Festus where the radon level was 4.8. We discovered that the sump pump lid was not sealed. We sealed it, and the level dropped to 2.1. No fan, no pipe, just a \$20 gasket. That is why I always recommend a diagnostic visit before jumping into a full mitigation system.

If you are somewhere between 2.0 and 4.0, you have options. You can install a Digital Radon Detector that gives you real-time readings. I use the Air Things Wave Plus myself. It connects to your phone and shows you hourly, daily, and monthly averages. This can help you see patterns. Maybe the level spikes only when the furnace runs. Maybe it is higher in the summer when the ground is wetter. With that data, you can decide whether to mitigate or just monitor.

The Role of Long-Term Testing

I am a big advocate of long-term testing for homeowners who want a definitive answer. A long-term test smooths out the seasonal and weather-driven spikes. The EPA actually recommends a long-term test as the preferred method for deciding whether to mitigate. But I understand that most people do not want to wait 90 days when they are worried about their family's health. So here is a practical approach: run a short-term test first. If it is below 2.0, relax. If it is above 4.0, call a pro. If it is in between, run a long-term test or buy a Digital Radon Detector and watch the numbers for a month.

I have seen radon test results that bounced from 2.5 to 7.8 over the course of a year in the same house. The long-term average was 4.2. That house needed a mitigation system. The short-term test that happened to land on a low week would have told the owner everything was fine. The short-term test that hit a spike would have scared them into a rushed decision. The long-term test gave them the truth.

What About Modern Detectors?

Technology has improved a lot in the last ten years. A good Digital Radon Detector costs around \$150 to \$250. It is not cheap, but it pays for itself in peace of mind. I keep one on my desk at home in Jefferson County. I can see the current reading, the 24-hour average, and the 30-day average. If I see a trend upward, I know to investigate before it becomes a problem.

Some homeowners ask me if they can just use a phone app or a cheap sensor from the hardware store. The answer is no. Most consumer-grade detectors that cost under \$50 are not accurate enough for reliable radon test result interpretation. They might tell you the humidity or

the temperature, but the radon reading is often a guess. Stick with devices that are listed on the EPA's website or have been tested by a reputable lab.

Final Thoughts on Your Results

If you live in Arnold, Festus, High Ridge, or Hillsboro, you have a local resource in Air Sense Environmental. They know the geology of Jefferson County. They know which neighborhoods tend to have higher readings. They have installed hundreds of radon mitigation systems, from simple sub-slab depressurization setups to complex multi-fan systems for large homes. And they use RadonAway equipment, which is a brand I trust for reliability and quiet operation.

But the most important step is the first one: actually testing. I have met too many homeowners who assume radon is not a problem because their neighbor tested low, or because they have never heard of anyone in their area having issues. Radon does not care about assumptions. It is a radioactive gas that comes from the ground, and it can enter any home regardless of age, size, or price. The only way to know is to test. And when you get your radon test results back, take the time to understand what they mean. Do not panic at a high number. Do not ignore a borderline one. And do not assume a low number is permanent. Test again in two years. Keep a monitor running. And if you need help, call someone who has done this work before.