

Radon Report and Recommendations

4/22/2019 4:21 PM

Maggie Aey
 10812 Collington Dr 23112
 Midlothian, VA 23112

Summary	Foundation	Room	Results
Monitor 1	Crawl Space	Formal Dining Room	0.7 pCi/L

Test Completed: 4/22/2019

* Lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003).

Radon Level	If 1,000 people who did not smoke were exposed to this level over a lifetime...**	WHAT TO DO: Avoid smoke and...
20 pCi/L	About 36 persons could get lung cancer	Fix your home
10 pCi/L	About 18 persons could get lung cancer	Fix your home
8 pCi/L	About 15 persons could get lung cancer	Fix your home
4 pCi/L	About 7 persons could get lung cancer	Fix your home
2 pCi/L	About 4 persons could get lung cancer	Consider fixing between 2 and 4 pCi/L
1.3 pCi/L	About 2 persons could get lung cancer	(Reducing radon levels below 2 pCi/L is difficult)
0.4 pCi/L	On average, fewer than 1 person (0.7) could get lung cancer	(Reducing radon levels below 2 pCi/L is difficult)
0 pCi/L	Calculated absence of risk	Impossible to accomplish. The lowest feasible level equals outside background.

Note: If you are a former smoker, your risk may be higher.

Conclusion

While no level of radon gas is completely safe, as with most things in life we must balance the benefits and costs to find our own "acceptable" levels. We walk outside and work in the sun, exposing ourselves to ultraviolet radiation and increasing our risk of developing skin cancer. We drive in automobiles almost every day even though greater than 1 in 86 deaths is a result of automobile accidents. People smoke, eat poorly, and engage in dangerous behaviors on a daily basis. To some degree, radon gas is another daily risk that we all must take. However, you choose what you eat, whether or not you smoke, and how and when you drive. You have no choice but to breathe the air in your home. A simple Radon Test can give you the information you need to make an informed decision about what level of radon gas exposure is acceptable to you.**

** Quoted from Air Chek, Inc the nation's leading provider of passive Radon test kits. Find them at radon.com

Test Type: Test / Device Type: CRM
Collington
10812 Collington Dr 23112
Midlothian, VA 23112

Radon Mitigation System Installed: No **SFR**
Maggie Aey
303-900-0891

Action	Date	Time	Tech	View Credentials	NRPP #	NRPP Exp.
Placement:	4/19/2019	8:15 AM	Wally Dorsey	View Credentials	100864	12/31/2019
Retrieval:	4/22/2019	4:16 PM	Daniel Whitlow	View Credentials	107511	04/30/2020

Test Results

Monitor #	Foundation Level	Room	Results	Recommendations	QA/QC ?	Monitor #	Results
101436002	Crawl Space	Formal Dining Room	0.7 pCi/L	Refer to chart	N		

Building Characteristics

Crawl Space; Pub Water; Slab Garage; Heat Pump

1st Flr T-Stats: 71/71 2nd Flr T-Stats: / 3rd Flr T-Stats: / # Foundation Vents: 15 # Open: 0
 Closed House Ck: Yes Date/Time: 4/22/2019 3:45 PM Closed House Inst Followed: Yes Valid Test: Yes

Anti-Tamper Device: Yes Signs of disturbance/tampering: No
 Window Seals Installed: No Signs of disturbance/tampering: No

Monitor Detail

Monitor #	Model	Last Lab Calibration	Last Field Calibration	QA/QC ?
101436002	1027	1/25/2019	N/A	N

Recommendations / General Observations

Test results below 2.0pCi/L - no need for retest or mitigation unless there are mechanical changes, structural changes or earthquake.

THE PURPOSE OF THIS RADON INSPECTION REPORT IS TO PROVIDE A PROFESSIONAL OPINION OF A STRUCTURE'S RADON LEVELS AS OF THE DATE OF INSPECTION, LIMITED TO THE TEST CONDITIONS IDENTIFIED IN THIS REPORT. THE RADON TESTING SERVICE CANNOT BE ASSURED THAT THE NECESSARY CONDITIONS WERE MAINTAINED THROUGHOUT THE TEST PERIOD. THERE CAN BE UNCERTAINTY WITH ANY RADON MEASUREMENT DUE TO STATISTICAL VARIATIONS AND OTHER FACTORS SUCH AS CHANGES IN THE WEATHER AND OPERATION OF THE DWELLING. WHILE WE MAKE EVERY EFFORT TO MAINTAIN THE HIGHEST POSSIBLE QUALITY CONTROL AND INCLUDE CHECKS AND VERIFICATION STEPS IN OUR PROCEDURES, WE MAKE NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, FOR THE CONSEQUENCES OF ERRONEOUS TEST RESULTS.



[View Larger Image](#)

What is radon?

Radon is a naturally occurring radioactive gas that comes from the decay of radium in the soil. It is colorless, odorless, tasteless, and chemically inert. Radium is a decay product of uranium. Uranium is present in almost all rocks and soil and material derived from rocks.

What is the average level of Radon found in homes in the U.S.?

Based on a national residential radon survey completed in 1991, the average indoor radon level in the United States is about 1.3pCi/L. The average outdoor level is about 0.4pCi/L.

Where does radon come from?

Radon is constantly being generated by the radium in rocks, soil, water and materials derived from rocks and soils. The amount of radon soil can produce, depends on local geology and can vary from house to house as well as throughout the different foundation types within a single home. Radon levels in the soil range from almost undetectable levels to many thousands of pCi/L (picoCuries per Liter). The amount of radon that escapes from the soil to enter the house depends on the suction created within the house, soil porosity, soil moisture, and the weather.

How does radon get into a building?

Most indoor radon comes into the building from the soil or rock beneath it. Radon and other gases rise through the soil and get trapped under the building and builds up under the house. Air pressure inside homes is usually lower than the pressure in the soil. Therefore, the home acts as a vacuum cleaner suctioning radon and other gases from under the building, forcing gases through floors and walls and into the building. Once inside, the radon can become trapped. Openings, which commonly allow easy flow of the gases in, include the following: cracks in floors and walls; gaps in suspended floors; openings around sump pumps and drains; cavities in walls; joints in construction materials; gaps around utility penetrations (pipes and wires); and crawl spaces that open directly into the building. As much as 2/3 of the radon below a concrete slab migrates directly through it via capillaries left behind when water that was in the concrete when poured, evaporates.

Can radon levels vary?

When radon tests are performed in different seasons or under different weather conditions, the initial screening and follow-up tests may vary so different values are to be expected. Even during normal weather, indoor radon levels may rise and fall by a factor of two on a daily cycle; for example, from 5 pCi/L to 10 pCi/L in 24 hours. During rapidly changing or stormy weather, the levels may change more dramatically.

Should I retest for radon after my initial test?

The EPA suggests getting a property tested for radon every five years, or if any major changes such as a new HVAC System and/or additions have been done to the property. Retest after Earthquakes. Retest homes with Radon Mitigation Systems every 1-2 years.

What are the symptoms and health risks associated with radon exposure?

There are no immediate symptoms associated with radon. However, chronic exposure to elevated radon levels has been demonstrated to cause an increased incidence of lung cancer in humans. The Surgeon General has warned that radon is the second leading cause of lung cancer in the United States, estimated to cause about 21,000 deaths each year. Radon is also the leading cause of lung cancer among non-smokers. Major scientific organizations continue to estimate that approximately 12% of lung cancers annually in the United States are attributable to radon. When radon and its decay products are inhaled into your lungs, they emit particles full of energy called alpha particles. These alpha particles can strike the sensitive lining of the lungs (bronchi). When this happens, the cells and their DNA in your lungs are damaged, increasing your risk of developing lung cancer. Most of the alpha particle radiation comes from radon decay products. Lung cancer is the only health effect which has been definitively linked with radon exposure. Lung cancer usually occurs after prolonged exposure. The risk of developing a lung cancer from radon exposure depends both on how much radon is present and how long you are exposed. The higher the radon level or the longer the time of exposure, even if the levels are relatively low, the greater the risk. Exposures up to 4 pCi/L may present some risk of contracting lung cancer to more sensitive occupants, especially children and those who live with smokers. Smokers are at higher risk of developing radon-induced lung cancer, so prevention is the best defense. People should not smoke and should also reduce the amount of radon they breathe.

Precipitation



Start Date	End Date	Low	High	Average
4/19/2019 8:00:00	4/20/2019 7:00:00	0.000in.	0.254in.	0.013in.
4/20/2019 8:00:00	4/21/2019 7:00:00	0.000in.	0.002in.	0.000in.
4/21/2019 8:00:00	4/22/2019 7:00:00	0.000in.	0.000in.	0.000in.
4/22/2019 8:00:00	4/22/2019 8:00:00	0.000in.	0.000in.	0.000in.
TOTAL		0.000in.	0.254in.	0.004in.

Temperature



Start Date	End Date	Low	High	Average
4/19/2019 8:00:00	4/20/2019 7:00:00	60.3°F	72.9°F	67.4°F
4/20/2019 8:00:00	4/21/2019 7:00:00	43.4°F	66.7°F	56.7°F
4/21/2019 8:00:00	4/22/2019 7:00:00	47.1°F	64.4°F	56.6°F
4/22/2019 8:00:00	4/22/2019 8:00:00	52.4°F	52.4°F	52.4°F
TOTAL		43.4°F	72.9°F	60.1°F

Wind



Start Date	End Date	Low	High	Average
4/19/2019 8:00:00	4/20/2019 7:00:00	5.0mph	12.9mph	8.9mph
4/20/2019 8:00:00	4/21/2019 7:00:00	1.5mph	13.2mph	7.3mph
4/21/2019 8:00:00	4/22/2019 7:00:00	0.4mph	6.8mph	3.2mph
4/22/2019 8:00:00	4/22/2019 8:00:00	5.1mph	5.1mph	5.1mph
TOTAL		0.4mph	13.2mph	6.4mph

Humidity



Start Date	End Date	Low	High	Average
4/19/2019 8:00:00	4/20/2019 7:00:00	78%	98%	91%
4/20/2019 8:00:00	4/21/2019 7:00:00	42%	100%	69%
4/21/2019 8:00:00	4/22/2019 7:00:00	43%	98%	67%
4/22/2019 8:00:00	4/22/2019 8:00:00	73%	73%	73%
TOTAL		42%	100%	75%

Pressure



Start Date	End Date	Low	High	Average
4/19/2019 8:00:00	4/20/2019 7:00:00	1,000.70mb	1,009.80mb	1,004.13mb
4/20/2019 8:00:00	4/21/2019 7:00:00	1,003.53mb	1,015.04mb	1,009.12mb
4/21/2019 8:00:00	4/22/2019 7:00:00	1,015.45mb	1,020.70mb	1,017.73mb
4/22/2019 8:00:00	4/22/2019 8:00:00	1,021.47mb	1,021.47mb	1,021.47mb
TOTAL		1,000.70mb	1,021.47mb	1,010.48mb

ATTACHMENT: Garage closed house instructions



ATTACHMENT: Radon monitor placement and closed house instructions



ATTACHMENT: Thermostat setting and closed house instructions



ATTACHMENT: Front door closed house instructions



ATTACHMENT: Back door closed house instructions





POB 6325 Richmond, VA 23230

www.radonease.com
Phone 804-598-5267
Toll Free 866-282-6444
Fax 804-598-9597

ATTACHMENT: Content-Transfer-Encoding: 8bit [10812 Collington Dr 23112|Formal Dining Room|4-19|0815.txt]

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Professional
Radon Monitor
10812 Collington Dr 23112
TID: 25466
Start Date 4/19/2019
Start Time 0815
Stop Date 4/22/2019
Stop Time 1616
Serial # 101436002
Location: Formal Dining Room
Signature: DPW
Data in pCi/l
Time Interval 1 Hr
0.0 0.6 0.3
0.6 0.6 0.0
0.0 0.6 0.6
0.6 0.6 0.3
0.0 0.0 0.3
0.3 1.0 0.3
0.6 0.0 0.0
0.3 0.6 0.6
0.3 0.6 0.3
0.3 0.6 0.3
0.0 1.0 0.3
0.0 0.3 0.6
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0.0 0.0 0.6
1.0 0.0 0.6
1.0 1.0 1.0
0.6 1.0 1.0
1.3 1.3 1.0
1.3 1.0 2.0
1.6 2.0 1.3
1.6 0.3 0.6
0.3 1.3 1.0
1.0 1.6 1.3
0.6 1.6 2.0
1.0 1.6 0.3
2.3 2.3 1.0
0.6 T 0.6
Overall Avg. = 0.7
EPA Protocol Avg. = 0.7

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