



RADON REDUCTION ANNUAL SWEEPSTAKES REPORT 2020

2019-2020 Contest Year

Take Action on Radon Team

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Context and Purpose

The Radon Reduction Sweepstakes is a Canada-wide contest run by Take Action on Radon (TAOR) in conjunction with the Canadian Association of Radon Scientists and Technologists (CARST). The contest provides 10 prizes of up to \$1,000 each to homeowners who have tested their home for radon and used a C-NRPP professional to reduce levels to below Canada's recommended guideline of 200 Bq/m³. A key part of TAOR's mandate is to encourage Canadians to *take action* on radon, and the Sweepstakes does just that with the possibility of a cash reward.

History

The Sweepstakes began in 2017 with the first year's prizes awarded in November 2018. In the first year, the prizes were distributed by region across Canada with 2 prizes per each of the 5 regions. Due to special licencing requirements, Quebec was not included in the first year, however they have been included as their own region each year thereafter. The regions were therefore expanded to 6 regions and defined as: BC and Yukon; Alberta and Northwest Territories; Manitoba and Saskatchewan; Ontario; Quebec; and Atlantic and Nunavut. The sweepstakes continued to have 10 awards of \$1,000 and the prizes were distributed with 1 prize per each of the 6 regions with the final 4 prizes being drawn from all remaining entrants.

TAOR produced a report in September 2019 summarizing the first two years of the entries. This current report presents a summary of information from the entries for the contest which ran from 2019 through 2020, which was the third year of the sweepstakes.

Summary of Winners 2019-2020

The 2019-2020 contest winners were drawn at random and announced online in September 2020. Each contest winner was notified, and prize money was sent directly to the winners. Whenever possible, photos were taken by the winners of themselves and/or their families. Each winner was interviewed and their testimonial of testing and reducing radon can be found along with the full list of names and regions in Appendix 1. These are 10 more inspiring stories of Canadians who have tested and reduced their radon to add to the 20 testimonies from the September 2019 report.

Average Costs:

One of the most oft-quoted pieces of information to come out of the Radon Reduction Sweepstakes is the average cost of a mitigation system. Although the specific amounts vary from year to year, the range of costs consistently averages around \$2,700. The average cost in each region from 2017-2018 ranged from \$2,310 to \$3,035 and in 2018-2019 they ranged from \$2,575 to \$3,466. The cost of mitigation systems was collected from all entries, as summarized in the Table 1.

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Region	# of Entries	Average Cost	Highest Cost	Lowest Cost	# of Different Mitigation Professionals
BC/Yukon	22	\$3,297	\$9,094.10	\$ 230.00	6
Alberta/NWT	57	\$2,601	\$10,671.76	\$1,086.25	4
Manitoba/Saskatchewan	137	\$2,823	\$5,200.00	\$ 355.00	10
ON	8	\$2,309	\$2,880.00	\$1,600.0	5
QC	9	\$2,051	\$2,235.00	\$1,500.00	3
Atlantic and Nunavut	23	\$2,234	\$5,175.00	\$1,043.48	5
	256	\$2,718	\$10,671.76	\$230.00	32

Table 1: Average Cost of Radon Mitigation System per Region, 2019-2020

As shown in table 1, the average cost of a radon mitigation system was once again very close to \$2,700, with the highest average cost found in BC at approximately \$3,300, and the lowest average cost found in Quebec, at approximately \$2,050.

Average Decrease of Radon Levels

The primary goal of TAOR is to reduce Canadians' exposure to the radioactive effects of radon, and one way to measure that is to ensure that the steps Canadians are taking to reduce radon levels in their homes are effective. The data from the 100 Radon Test Kit challenge is provides a measure of the effectiveness of radon mitigation systems across the country.

Each contest participants submits their pre and post mitigation radon levels. These post-mitigation measurements are typically based on the short-term measurements conducted after the radon mitigation system were installed. Sometimes, the participant does not provide this information because they apply for the contest before receiving these results.

From the 2018-19 report entries (see September 2019 publication) we saw reductions from levels as high as 3,700 Bq/m³ to average reduced levels of 35 Bq/m³, with an average reduction of 91%. Table 2 presents the data from the 2019 – 2020 contest year and includes data from all participants who were able to provide both pre and post mitigation levels.

Region	# of Entries	Highest Radon Level	Average Reduced Radon Level	Average Percentage of Reduction
<i>BC/Yukon</i>	21	1056	50	90%
<i>Alberta/NWT</i>	50	900	25	93%
<i>Manitoba/Saskatchewan</i>	128	2800	37	92%
<i>ON</i>	7	1700	15	97%
<i>QC</i>	9	800	63	88%
<i>Atlantic/Nunavut</i>	22	1513	38	92%
	237	2800	36	92%

Table 2: Reduction in Radon Levels 2019-2020

Figure 1 presents the pre and post mitigation radon levels for each contest entry as a paired bar chart, with the pre mitigation level shown in blue, and the post mitigation level shown in red. The data was arranged based on the post mitigation radon levels, with the lowest levels on the left and increasing levels to the right. The chart clearly illustrates that there is no correlation between the pre mitigation level and the post mitigation level, which means that even very high radon levels (this chart was cut off at 1000 Bq/m³), can be reduced to well below the Canadian guideline level most of the time.

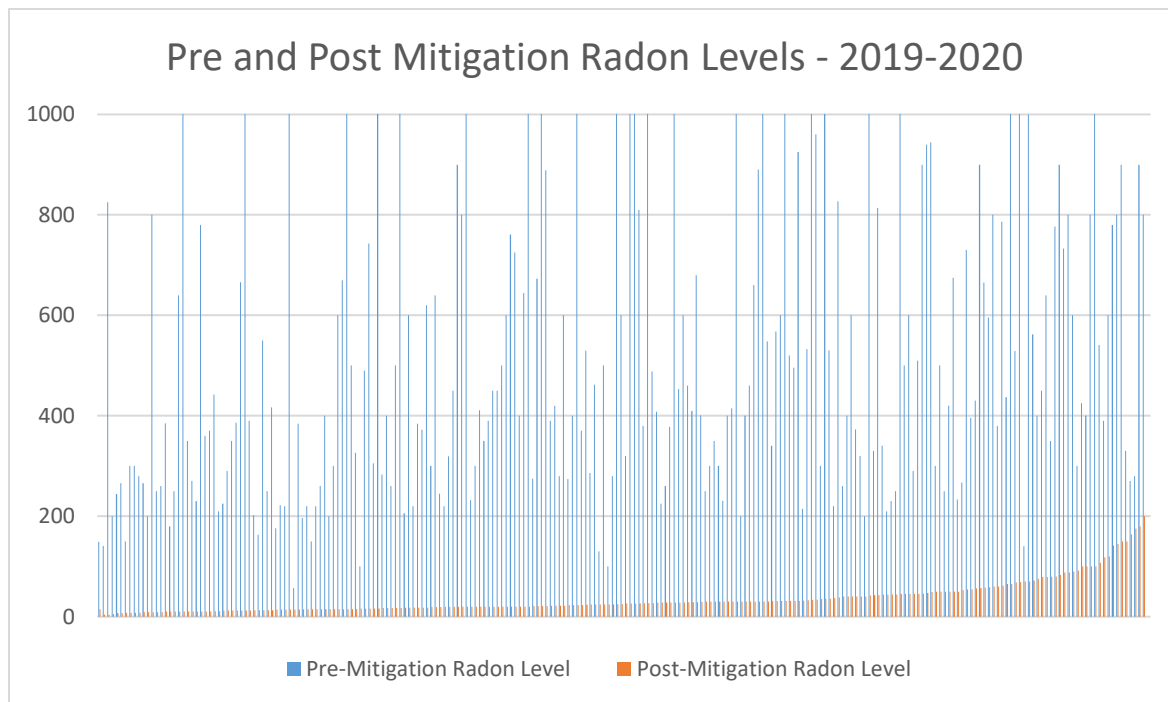


Figure 1: Radon Levels before and after mitigation 2019-2020

(data was only included for entries that provided a post-mitigation radon level; chart was cut off at 1000 Bq/m³)



Analyzing the data from Figure 1 reveals that C-NRPP professionals reduced radon levels to below 100 Bq/m³ over 94% of the time, and to below 50 Bq/m³ 80% of the time. These levels are well below Canada’s action level. The remaining 7% of homes were also lowered to below Canada’s action level of 200 Bq/m³. These statistics are summarized in table 3, below.

Post-Mitigation Radon Level	# of participants	% of participants	Min Pre-Mitigation Radon Level	Max Pre-Mitigation Radon Level
0-49	189	80%	57	2800
50-99	33	14%	140	2000
100-200	15	6%	270	1100
Total	237		57	2800

Table 3: Statistics on Post-Mitigation Radon levels

Radon Control Measures

Radon control measures for new construction are gradually being introduced into the Canadian building code, depending on the jurisdiction. The Sweepstakes offer an opportunity to collect data that may help to measure whether these control measures are making it easier and less costly to mitigate high radon levels.

In the 2019-2020 sweepstakes a question was added about previous radon reduction (control) measures that were included in the house prior to the installation of the full radon mitigation system. Table 4 summarizes the results. Given how few homes included some type of existing radon control measure, it is impossible to draw any conclusions based on the existing data. However, it will be interesting to track this data over the next years of the contest.

Radon Control/ Reduction measures already in home	Number of Participants
House had some type of radon reduction measures previously installed.	6
House was constructed with a short radon pipe in the foundation floor and the mitigation work USED this pipe.	11
House was constructed with a short radon pipe in the foundation floor and the mitigation work DID NOT USE this pipe.	< 5
House had a radon pipe installed throughout the house exiting outside already and a fan was added	< 5
No previous radon reduction measures were in the home	256

Table 4: Existing radon control measures in participating homes



Appendix 1: List of Winners with Quotes from 2019-2020

Each of the winners was interviewed over the phone, and excerpts from these interviews were used to draft quotes to help tell the story of their individual experience with radon.

A general lack of radon awareness persists across most regions of Canada. The stories collected from Sweepstakes winners are the best possible Canadian radon stories – these are Canadians from all walks of life who became aware of the health risks posed by radon, tested their homes, and then mitigated their homes when they discovered the levels were high. The stories come from all regions of Canada and, as personal stories, are more compelling than any generic public health messaging can hope to be.

Excerpts from those interviews are as follows:



Jan Adam King, Salmon Arm, BC: “Everyone no matter where you live should test for radon. It’s one of those invisible things that you can’t take for granted that you don’t have it. It’s something everyone should be checking.”

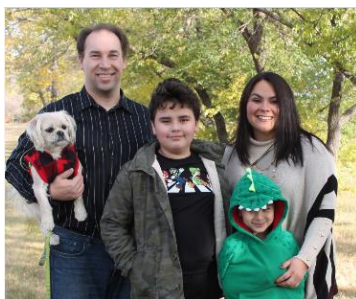
Winner from BC and Yukon Region.



Alex P, Calgary, AB: Calgary resident Alex wanted to tick a critical task off his to-do list: testing his home for radon, the leading cause of lung cancer in non-smokers. “It was now or never,” he says.

Alex was alarmed to discover the radon levels in his home were above Health Canada’s recommended levels, and immediately installed a radon mitigation system. “We should have done it sooner. It was so easy to do,” he says. “Now we have peace of mind knowing that our home is safe.”

Winner from Alberta and Northwest Territories Region.



Stacey Mead, Regina, SK: “What motivated me to test my home was realizing it was an easy way to protect my family’s health. It wasn’t enough to be aware of the danger — I had to act on it,” Stacey says. “The immediate cost of a radon mitigation system doesn’t even compare to the long-term cost.”

Winner from Manitoba/Saskatchewan Region.

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Alexandra Pulvermacher, Regina, SK: “If you want to protect your family and stay healthy, testing for radon is something you should do right away. I feel so much better now that it's done and my home is safe,” says Alexandra.

Winner from the remaining entrants.



Rob Milne, Regina, SK: “I think everyone should test their house for radon,” says Rob. “Regina has a lot of homes that have high levels, and now that everyone is getting to know about the health risks of radon, it makes sense to do. Especially, if you want to go and sell your house. It will be hard to do if you haven't had it looked after,” added Rob.

Winner from the remaining entrants.



Melissa McClement, Regina, SK: Melissa McClement from Regina, SK was surprised that more people aren't aware of radon. “A friend of mine from work tested and had high levels and so she told me to test as well. It is something that is so prevalent in this area and yet, very few people know about. It is dangerous for your lungs, but also something that is easily preventable. We tested and the mitigation company came out right away to fix.”

Winner from the remaining entrants.



Jeff Szumlanski, Kingston, ON: “If you wear a seatbelt every time you drive your car, and you get a flu shot. Those are health and safety measures that you take to protect your family. Doing a radon test and mitigation in your home is just like putting on your seatbelt and getting a flu shot.”

“There is no vapour barrier under my slab like they require now (in newer building codes), when I found out that it was going to reduce the moisture coming across my slab which would mean less moisture on your windows in the winter, decrease the

musty smell, I would have been convinced to install a radon mitigation system, on top of that, it reduces a cancer causing gas? Installing a radon mitigation system was a was an easy sell for me. “

Winner from Ontario Region.

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Melissa Metallic, Listuguj, QC “Radon really is a silent killer.” We lived in the house for 20 years before testing, and never knew we were living in the basement with elevated levels. “Now that we know, we try to tell as many people as possible, and we show them our system. There’s a lot of uranium in our area.”

Winner from Quebec Region.



Maria Joudrey of Upper Tantallon, NS: She tested her home for #radon, reduced her levels and is one of our sweepstakes winners "Take the first step. It's simple and really an inexpensive fix given the risk"

Winner from Atlantic and Nunavut Region.



Earl Head, Halifax, NS:

“I wouldn’t take any chances – it’s always best to be safe than sorry. Especially with testing – it’s so easy.”

Winner from the remaining entrants.

Conclusion and Lessons Learned

Evaluating entries from 2019/2020, we continue to see that most people reducing radon are seeing effective results in their radon levels of 91% reduction when using a C-NRPP certified professional and that pricing of radon mitigation systems seems ranges by home and region, however the general average is around \$2,700 across the country.

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