

D a t e	Time (cdt)	Wind (mph)	Visibility. (mi.)	Weather	Sky Conditions.	Temperature (°F)	Relative Humidity	Barometric Pressure	Testing Time details
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The Barometer and Winds Effects on Radon Levels

The National Weather Service National Oceanic & Atmospheric Administration (NOAA) uses the above criteria when describing weather events. Criteria not listed include dew point, wind chill, heat index, minibars (measuring barometric pressure) and precipitation.

There are two averages listed at the bottom of the printout to the right. The Overall Avg. 9.5pCi/l is counting all 49 readings. The EPA Protocol Avg. 10.1pCi/l is considered the official average. The EPA average automatically eliminates the first four hours of the test to limit background influence from previous testing to better ensure a representative average for the particular testing site/structure.

Radon's predictability:

Radon, although impossible to predict without testing, does have some consistencies:

- Radon will typically be 1 to 2 points higher in a vacant home with little to no air movement.
- The half-life of radon is 3.8 days. If a level is 10pCi/l, in roughly 4 days it will be 5pCi/l, and decrease accordingly. Radon on the first floor of a ranch home will typically average half the concentration when compared to the basement reading. Depending on the ground source strength of the radon and how easily it enters the structure, it may be more.
- Sump pits and openings in basement slabs to accommodate plumbing are two common radon entry points. There are many others.

Radon's unpredictability:

Barometric pressure, precipitation and wind speed all affect indoor radon levels. There was no precipitation affecting this particular test and the wind speed for most (but not all) of the test was below 10 MPH. The earth is always a higher barometric pressure when compared to the atmosphere, so a lower atmospheric barometric pressure will result in a greater pressure difference between the atmospheric and ground pressures. This increased differential combined with higher winds will increase/influence indoor radon concentrations. In the charts below, the highest radon concentrations in the **C & D** time frames (25-38 hours into the test) are seen at slightly increased wind speeds. Also, comparing the atmospheric barometric pressures at the start of the test (letter **A**) to the **C & D** period shows a lower average (around .20 lower). The spike in radon numbers at these time frames suggests a higher ground concentration. In situations like this, reactively sealing the basement is less successful at reducing indoor radon levels compared to proactively removing the radon from its source with a radon mitigation system.

Need More Information?

Please visit www.phiinspect.com click our "Post Inspection Support" page and request additional documents.

Start Date: 8/14/14
 Start Time:
 Serial #:
 Location: Lower Level
 Signature: T. Jensen

Data in pCi/l
 Time Interval 1 Hr

A →	0.6	2.2	2.6
	2.6	3.0	5.2
	4.0	5.6	6.6
	6.2	7.2	10.2
B →	4.6	4.2	8.2
	8.6	7.0	8.0
	4.6	5.6	6.2
	4.6	6.6	9.0
C →	7.2	8.2	14.2
	13.0	9.0	14.6
	16.6	18.2	16.2
	11.6	14.0	16.2
D →	14.2	14.0	16.2
	18.0	13.0	14.2
	9.6	12.6	12.2
	11.6	10.0	13.0
E →	9.2		

Overall Avg.= 9.5
 EPA Protocol Avg.=10.1

D a t e	Time (cdt)	Wind (mph)	Visibility. (mi.)	Weather	Sky Conditions.	Temperature (°F)		Relative Humidity	Barometric Pressure	Testing Time details	
17	07:53	E 5	10.00	Overcast	OVC015	68	60	76%	29.99		
17	06:53	Vrbl 5	10.00	Overcast	OVC013	68	61	78%	29.97		
17	05:53	E 12	10.00	Overcast	OVC009	69	64	84%	29.94		
17	04:53	E 3	10.00	Overcast	OVC012	72	68	87%	29.94		
17	03:53	E 5	10.00	Mostly Cloudy	BKN030	71	67	87%	29.93		
17	02:53	SE 5	10.00	Mostly Cloudy	BKN026 BKN036	71	67	87%	29.92		
17	01:53	SE 5	8.00	Mostly Cloudy	BKN032	70	67	90%	29.92		
17	00:53	E 3	8.00	Overcast	OVC085	71	67	87%	29.92		
16	23:53	Calm	8.00	Fair	CLR	71	68	90%	29.91		
16	22:53	S 3	9.00	Fair	CLR	72	68	87%	29.90		
16	21:53	Calm	10.00	Fair	CLR	73	69	87%	29.89		
16	20:53	SE 3	10.00	Fair	CLR	76	69	79%	29.89		
16	19:53	SW 5	10.00	Fair	CLR	78	69	74%	29.87		
16	18:53	SW 5	10.00	Fair	CLR	82	68	63%	29.87		
16	3:53pm	Vrbl 3	10.00	A Few Clouds	FEW030	83	68	61%	29.87	Test end time 3:30pm	E Radon 9.2
16	16:53	SW 7	10.00	A Few Clouds	FEW028	83	68	61%	29.86		
16	1:53pm	SE 3	10.00	Partly Cloudy	SCT027	82	68	63%	29.86		
16	14:53	Vrbl 3	10.00	A Few Clouds	FEW021	80	67	64%	29.87		
16	13:53	S 9	10.00	A Few Clouds	FEW017	79	66	65%	29.88		
16	12:53	SE 5	10.00	Overcast	OVC015	76	66	72%	29.90		
16	11:53	Calm	10.00	Overcast	OVC012	71	64	79%	29.92		
16	10:53	Vrbl 3	9.00	Overcast	OVC009	72	64	76%	29.91		
16	09:53	Calm	10.00	Overcast	OVC008	69	64	84%	29.90		
16	08:53	W 3	9.00	Overcast	OVC008	68	63	84%	29.91		
16	07:53	SW 6	9.00	Overcast	OVC008	68	63	84%	29.91		

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16	06:53	S 6	7.00	Overcast	OVC006	67	63	87%	29.90		
16	05:53	S 6	7.00	Overcast	OVC005	66	63	90%	29.90		
16	04:53	S 8	10.00	Overcast	OVC008	67	63	87%	29.89		
16	03:53	S 8	6.00	Fog/Mist	SCT010	67	63	87%	29.88		
16	02:53	S 6	10.00	Partly Cloudy	SCT012	67	63	87%	29.87		
16	1:53am	S 5	10.00	Fair	CLR	68	63	84%	29.88	36-37 hours into the test	D Radon 14.2
16	00:53	Calm	10.00	Fair	CLR	68	63	84%	29.88		
15	23:53	S 5	10.00	Fair	CLR	69	62	78%	29.90		
15	22:53	SW 7	10.00	Fair	CLR	69	62	78%	29.91		
15	21:53	SW 8	10.00	Fair	CLR	71	63	76%	29.92		
15	20:53	SW 6	10.00	Fair	CLR	72	63	73%	29.91		
15	19:53	S 9	10.00	Fair	CLR	76	63	64%	29.90		
15	18:53	S 8	10.00	Fair	CLR	79	63	58%	29.91		
15	17:53	SW 12	10.00	Partly Cloudy	SCT037	81	63	54%	29.92		
15	16:53	SW 12	10.00	Mostly Cloudy	SCT042 BKN055	82	63	53%	29.92		
15	15:53	S 8	10.00	Mostly Cloudy	FEW037 BKN065	81	64	57%	29.93		
15	14:53	S 12	10.00	Fair	CLR	82	63	53%	29.95		
15	1:53pm	S 12	10.00	A Few Clouds	FEW055 FEW075	81	62	53%	29.97	24-25 hours into the test	C Radon 7.2
15	11:53	S 8	10.00	Mostly Cloudy	BKN047 BKN060	77	60	56%	30.01		
15	10:53	S 8	10.00	few clouds	FEW055	75	57	54%	30.01		

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15	09:53	S 8	10.00	Fair	CLR	71	57	61%	30.02		
15	08:53	SE 6	10.00	Fair	CLR	65	55	70%	30.02		
15	07:53	E 8	10.00	Fair	CLR	60	52	75%	30.03		
15	06:53	SE 7	10.00	Fair	CLR	57	52	83%	30.04		
15	05:53	SE 6	10.00	Fair	CLR	56	52	87%	30.04		
15	04:53	E 7	10.00	Fair	CLR	57	52	83%	30.03		
15	03:53	SE 6	10.00	Fair	CLR	58	53	84%	30.02		
15	02:53	SE 7	10.00	Fair	CLR	58	53	84%	30.03		
15	1:53am	SE 6	10.00	Partly Cloudy	SCT055	60	54	80%	30.04	12-13 hours into the test	B Radon 4.6
15	00:53	E 6	10.00	Fair	CLR	60	54	80%	30.04		
14	23:53	E 7	10.00	Fair	CLR	61	55	81%	30.05		
14	22:53	E 9	10.00	Fair	CLR	62	54	75%	30.04		
14	21:53	E 6	10.00	Fair	CLR	65	55	70%	30.04		
14	20:53	E 5	10.00	Fair	CLR	68	55	63%	30.03		
14	19:53	E 3	10.00	Fair	CLR	72	52	50%	30.03		
14	18:53	Calm	10.00	Fair	CLR	76	51	42%	30.04		
14	17:53	W 6	10.00	Fair	CLR	77	51	40%	30.05		
14	16:53	NW 8	10.00	Fair	CLR	78	48	35%	30.06		
14	15:53	NW 6	10.00	Fair	CLR	79	47	32%	30.08		
14	14:53	Vrbl 6	10.00	Fair	CLR	77	51	40%	30.09		
14	1:53pm	Vrbl 3	10.00	Fair	CLR	77	52	42%	30.10	Test started 1:51pm	A Radon .6
14	12:53	Calm	10.00	Fair	CLR	74	53	48%	30.12		
14	11:53	Vrbl 3	10.00	Fair	CLR	72	49	44%	30.13		
14	10:53	Vrbl 5	10.00	Fair	CLR	69	53	57%	30.16		
14	09:53	E 3	10.00	Fair	CLR	65	53	66%	30.16		