INDUSTRIAL HYGIENE REPORT

RADON TESTING REPORT

Miller Elementary School

Report to: Vonnie B. Good, EHS Salem-Keizer Public Schools
By: Kathy Ellis, Senior Industrial Hygiene Consultant
Reviewed By: DeEtta Burrows, MSPH, CIH – Wise Steps, Inc.

On-site: March 7 – 10, 2022
Report: March 22, 2022

PURPOSE

Radon retesting was done at Miller Elementary School to determine if there have been any changes in the background radon levels in the classrooms, offices and other rooms that are in contact with the ground since the 2014 tests. Miller Elementary School has also undergone a major construction project that included additional classrooms, offices and workspaces. These new areas also needed to be tested for radon levels.

This testing is a requirement in ORS 332.331 Healthy and Safe Schools Plan rules.

CONCLUSION and RECOMMENDATIONS

All tested rooms had low to non-detectable levels of radon.

TESTING

Radon testing was conducted using protocols recommended by the Oregon Health Authority per ORS 332.345. Radon Air-Chek short-term test devices were used in the rooms by suspending the device in each room. The testing occurred from March 7-10, 2022, during normal and routine school ventilation system operation. Weather conditions during the weeks prior of testing had been wet with moderate temperatures.

This testing was conducted under COVID-19 recommended precautions of having increased outside air supplied to the building.

Quality assurance testing was also conducted by blank (QCB) test devices, and duplicate samples per the recommendations found in ORS 332.345.

EPA RADON GUILDELINES

The EPA has set an Action Level of 4.0 pCi/L (picoCuries per liter) for schools. If classrooms, offices or buildings have radon levels at or above 4.0 pCi/L, EPA recommends that schools take action to reduce the level. These actions include:

Step 1. If your result is 4.0 pCi/L or higher take a follow-up test (Step 2) to be sure.

Step 2. Follow up with either a long-term test or a second short-term test.

The World Health Organization has set their action level at 2.7 pCi/L. Salem-Keizer Public Schools has determined that 2.7 pCi/L is a target level where retesting should be done.

CONTROL OF RADON LEVELS IN SCHOOLS

The major control mechanism for lowering radon levels within school buildings is the use of dilution ventilation. If the amount of outside air delivered into a building increases, the radon levels should decrease.

March 14, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
MILLER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11119077	A10	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119076	A10	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	0.6 ± 0.3	2022-03-11
11119087	A100E	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119086	A100W	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119078	A20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119079	A30	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119080	A40	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119081	A50	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119082	A60	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119083	A70	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119084	A72	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119088	B10	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119089	B20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119090	B20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119091	B30	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119092	B40	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119093	B50	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119094	B60	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119085	B82	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119101	C10	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119102	C20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119103	C30	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119105	C40	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119104	C40	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119106	C50	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119107	C60	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119115	CAFETERIA	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119114	CAFETERIA	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119075	D 14	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119074	D 16	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119070	D 42	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119073	D 58	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119071	D 62	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119108	D20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119109	D30	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	???? IF1	2022-03-11
11119110	E10A	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119111	E20	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

March 14, 2022

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MILLER
MAIN

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11119112	E30	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119116	FS14	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119118	GYM E	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119117	GYM W	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119100	M1	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119099	M2	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119098	M3	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119097	M4	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119096	M4	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119095	M5	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119072	MAIN OFFICE	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119119	PE OFFICE	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	0.6 ± 0.3	2022-03-11
11119120	QCB1	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119121	QCB2	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119122	QCB3	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11
11119113	SOS	2022-03-07 @ 11:00 am	2022-03-10 @ 1:00 pm	< 0.3	2022-03-11

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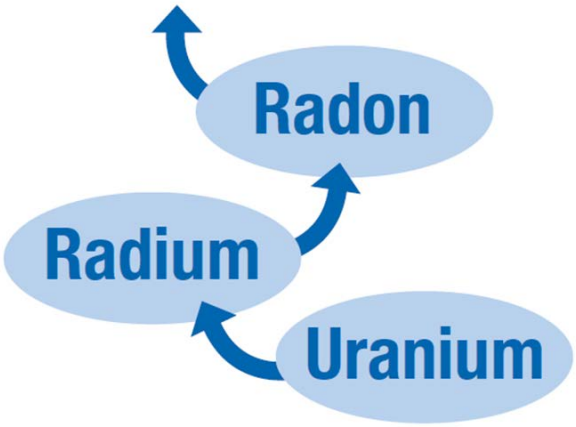
Note: QCB1-3 are blank samples and part of the quality control process for radon testing.

Radon in schools

Fact Sheet on Radon Exposure for Students and Staff

What is radon?

Radon is a radioactive gas you can't see, smell or taste. It is a decay product of uranium and is found all over the world. Uranium and its decay products are naturally found in the soil and rocks beneath buildings. Our school image (right) shows how uranium naturally decays into radium that further breaks down into radon gas. Radon moves up through the soil and enters buildings in contact.



Why is radon a problem in Oregon schools?

Radon is the 2nd leading cause of lung cancer, after smoking. The Environmental Protection Agency (EPA) estimates around 21,000 radon-related lung cancer deaths occur each year. Breathing high levels of radon in combination with smoking is even more dangerous and increases your risk by ten times.

Home is likely the most significant source for breathing radon. According to the EPA, 1 out of 15 homes has high radon levels. School is likely the second largest source of radon exposure for students and staff. The only way to know your radon levels is to test. The EPA recommends that **all** homes and schools be tested for radon.

EPA ACTION LEVEL **4.0** **Picocuries / Liter of air**

Testing at Home

Radon testing at home can be simple and inexpensive. You can find do-it-yourself test kits at most local hardware stores and online from the American Lung Association. Oregon Health Authority (OHA) Radon Program also offers FREE test kits to those living in areas where little data is available. To find out if you are eligible, contact radon.program@state.or.us.

Testing in Oregon Schools

By law (ORS 332.341-345), all Oregon schools are required to test for radon before January 1, 2021.

School radon testing involves the placement of small testing devices in all frequently occupied rooms on the lowest level of the building. Initial testing is short-term and lasts between 2 and 7 days. Test devices are not dangerous in any way.

Rooms that test at or above 4.0 picocuries per liter of air (pCi/L) (EPA recommended action level) are subject to longer confirmation testing and radon reduction systems.

*Test results for your school can be found at:

_____

For more information about radon, visit www.healthoregon.org/radon.

If you have other questions or concerns about radon testing at your school, contact _____ at 503-399-3071 or Good_Vonnie@salkiez.k12.or.us.

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