

INDUSTRIAL HYGIENE REPORT

RADON TESTING REPORT

Schirle School

Report to: Vonnie B. Good, EHS Salem Keizer School District

By: Kathy Ellis, Senior Industrial Hygiene Consultant

Reviewed By: DeEtta Burrows, MSPH, CIH – Wise Steps, Inc.

On-site: November 26–29, 2018

Report: December 9, 2018

PURPOSE

After initial testing showed radon levels above EPA's Action Level of 4.0 picoCuries/L (pCi/L) in a few of the rooms at Schirle, a radon mitigation system was installed in March of 2016. To ensure that the systems are functioning properly and levels are well below EPA's Action Level, annual radon testing is performed.

CONCLUSION AND RECOMMENDATION

All classrooms had very low levels of radon. However, the Principal's office had radon levels below EPA'S Action Level but above the School District's trigger to retest.

Recommend retest in this office after increasing the amount of outside air provided to the office via the ventilation system and check to make sure the mitigation system is operating properly.

TESTING

Radon testing was conducted using protocols recommended by the Oregon Health Authority per ORS 332.166-.167. Radon Air-Chek short-term test devices were used in the rooms by suspending the device in each room. The testing occurred from November 26-29, 2018, during normal and routine school ventilation system operation, as well as with the radon mitigation system in operation. Weather conditions the week of the testing had been rainy with low temperatures.

Quality assurance testing was also conducted by utilizing blank and duplicate samples per the recommendations found in ORS 332.166-.167.

EPA RADON GUIDELINES

The EPA has set an Action Level of 4.0 pCi/L (picoCuries per liter) for schools. If classrooms 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 School District 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. When it was determined that increasing ventilation didn't lower the radon sufficiently, a subslab depressurization system was installed in in this school.

Sample Data Attached

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7979896	B1	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.0 ± 0.4	2018-12-03
7979897	B2	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	2.2 ± 0.5	2018-12-03
9132302	B3	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	2.1 ± 0.4	2018-12-03
7979898	B3	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.8 ± 0.5	2018-12-03
7979899	B4	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.4 ± 0.4	2018-12-03
7979900	B5	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.4 ± 0.4	2018-12-03
9132301	B6	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.5 ± 0.4	2018-12-03
7237439	C1	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.7 ± 0.3	2018-12-03
7237440	C2	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.8 ± 0.4	2018-12-03
7237441	C3	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.8 ± 0.3	2018-12-03
7237442	C4	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	< 0.3	2018-12-03
7237443	C5	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	< 0.3	2018-12-03
7237444	C6	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.8 ± 0.4	2018-12-03
9132306	CHECK IN	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	< 0.3	2018-12-03
9132305	COMPUTER LAB	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.7 ± 0.3	2018-12-03
7237421	CONF RM	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.3 ± 0.4	2018-12-03
7237434	CUSTODIAN OFFICE	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.4	2018-12-03
7237436	DEVELOPMENTAL	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.1 ± 0.3	2018-12-03
7237426	E1	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.1 ± 0.3	2018-12-03
7237427	E2	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.3 ± 0.3	2018-12-03
7237428	E3	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.4	2018-12-03
7237429	E4	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.6 ± 0.3	2018-12-03
7237430	E5	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.3	2018-12-03
7237431	E6	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.7 ± 0.3	2018-12-03
7237432	E7	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.8 ± 0.3	2018-12-03
7237438	HEADSTART	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.6 ± 0.3	2018-12-03
7237425	KING	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.2 ± 0.3	2018-12-03
7237433	KITCHEN OFFICE	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.7 ± 0.3	2018-12-03
7237437	MUSIC	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.4	2018-12-03
9132307	OFFICE WORK RM	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.3	2018-12-03
7237423	OKEEFE	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.0 ± 0.4	2018-12-03
7237435	PE OFFICE	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.7 ± 0.3	2018-12-03
7237420	PRINCIPAL	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	3.6 ± 0.4	2018-12-03
9132304	PRINCIPAL	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	2.9 ± 0.4	2018-12-03
7237424	SPEECH	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	1.1 ± 0.3	2018-12-03
7237422	TIME OUT	2018-11-26 @ 8:00 am	2018-11-29 @ 8:00 am	0.9 ± 0.4	2018-12-03