INDUSTRIAL HYGIENE REPORT

RADON TESTING REPORT

ECHS

Report to: Vonnie B. Good, EHS Salem Keizer School District
By: Kathy Ellis, Senior Industrial Hygiene Consultant
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On-site: December 15-18, 2014
Report: December 31, 2014

PURPOSE

Radon testing was done to measure the background levels in all classrooms, offices and staff work rooms that are in contact with the ground.

TEST METHOD

Radon Air-Chek short-term test devices were used in each location by placing the device 5-6 feet above the floor where it is not in direct contact with airflow from the ventilation system, windows or exterior doors. Staff were requested to keep windows closed during the testing period.

These short-term devices work by trapping room air inside the grains of charcoal within the devices, meaning that live radon gas is being captured. The analysis is performed by measuring the radiation emitted from the charcoal, which is proportional to the amount of radon that was present in the room air.

The testing occurred from Monday December 15 to Thursday December 18, 2014, during normal and routine operation of the school.

EPA RADON GUILDELINES

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:

RESULTS and RECOMMENDATION

One test location was above the EPA's action level of 4 picoCuries per liter (pCi/l), Classroom 117 with a radon level of 4.1 pCi/L.

It is recommended that the operation of the ventilation system for this room be checked to make sure that the amount of outdoor air supplied has not been shut off or limited. If possible increase the amount of outdoor air to the classroom, then retest the room for radon levels.

BACKGROUND ON RADON

Radon is a gas that occurs in nature, seeping up from the earth. It is odorless, colorless and tasteless. Radon comes from the natural breakdown, or radioactive decay, of Uranium 238. The half-life of an individual element is relatively short. Within two weeks, about 90% of a given amount of radon gas will be gone. However, the actual health concern is for the radon decay products, called radon progeny, which carry a small static charge that allows their attachment to water vapor, dust and smoke particles in the air.

The Radon progeny can become lodged in the lung tissue when they are inhaled, and it is these particles' further radiation decay that is associated with potential lung cancer effects.

Radon can seep into buildings or schools through cracks in slab floors or porous cinderblock. It can enter around loose-fitting drainage pipes or through sump pumps.

The US EPA has set an Action Level of 4.0 pCi/L. At or above this level of radon, the EPA recommends that corrective measures should be taken to reduce the exposure to radon gas.

CONTROL OF RADON LEVELS IN SCHOOLS

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

Sample Data Attached

December 30, 2014 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
SCHOOL
ECHS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7015541	104	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015542	106/107	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015540	108	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.7	2014-12-22
7015539	109	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.6	2014-12-22
7015538	109A	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015572	112	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.6	2014-12-22
7015571	117	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	4.1	2014-12-22
7015570	120	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.5	2014-12-22
7015565	124	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.7	2014-12-22
7015569	125A	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.1	2014-12-22
7015568	125B	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.7	2014-12-22
7015567	125C	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.3	2014-12-22
7015566	125D	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.7	2014-12-22
7015564	126	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.8	2014-12-22
7015563	128	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.2	2014-12-22
7015562	130	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.8	2014-12-22
7015558	134	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.9	2014-12-22
7015559	136	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.7	2014-12-22
7015560	137	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.0	2014-12-22
7015561	140	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.1	2014-12-22
7015556	142	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.7	2014-12-22
7015557	143	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.5	2014-12-22
7015554	144	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.1	2014-12-22
7015555	146	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.1	2014-12-22
7015553	148	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015552	150	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015550	151	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.2	2014-12-22
7015551	152	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.2	2014-12-22
7015548	154	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.1	2014-12-22
7015549	154C	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015544	156	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.3	2014-12-22
7015545	156A	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.9	2014-12-22
7015546	156B	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	1.4	2014-12-22
7015573	COMP LAB	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015543	KITCHEN	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	< 0.3	2014-12-22
7015547	LIBRARY	2014-12-15 @ 9:00 am	2014-12-18 @ 10:00 am	0.7	2014-12-22

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