

INDUSTRIAL HYGIENE REPORT

Auburn Elementary School

Report to: Vonnie Good, Risk Management

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On-site: December 4-7, 2012

Report: December 19, 2012

PURPOSE

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

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.

These short-term devices work by trapping room air inside the grains of charcoal with 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 Tuesday, December 4 to Friday, December 7, 2012 during normal and routine operation of the school.

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:

RESULTS and RECOMMENDATION

No test locations were above the EPA's action level of 4.0 picoCuries per liter (pCi/l).

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, from uranium 238, and produces radon. 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

Radon test result report for:
AUBURN
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4588561	COUNSELOR	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588585	HEALTH	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	0.6	2012-12-11
4588580	INSTR. ASSISTANT	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588583	KITCHEN	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588575	LRC 1	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588576	LRC 2	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588577	LRC 3	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588578	LRC 4	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588579	MEDIA/COMP LAB	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	0.5	2012-12-11
4588553	OFFICE MANAGER	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588552	PRINCIPAL	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588582	RM 1	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588559	RM 11	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.7	2012-12-11
4588571	RM 12	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588560	RM 13	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.6	2012-12-11
4588570	RM 14	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588562	RM 15	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.8	2012-12-11
4588569	RM 16	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.6	2012-12-11
4588563	RM 17	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588566	RM 19	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588581	RM 2	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588567	RM 21	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.7	2012-12-11
4588568	RM 23	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588555	RM 3	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588574	RM 4	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588556	RM 5	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588573	RM 6	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588557	RM 7	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588572	RM 8	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588558	RM 9	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588584	SPEECH	2012-12-04 @ 11:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588554	STAFF ROOM	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11

December 17, 2012

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
AUBURN
GYM

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4588564	MUSIC	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	< 0.3	2012-12-11
4588565	PE OFFICE	2012-12-04 @ 10:00 am	2012-12-07 @ 2:00 pm	0.6	2012-12-11

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