

INDUSTRIAL HYGIENE REPORT

RADON TESTING REPORT

McKay High 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: January 27–30, 2014

Report: February 6, 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, January 27 to Thursday, January 30, 2014, 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, 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

Radon test result report for:**MCKAY**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4649392	100 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	0.6	2014-02-04
4649391	101 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649390	102 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649372	102B	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	1.0	2014-02-04
4649373	102C	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649377	102E	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649378	102G	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649389	103 HALL	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649388	103 INTERIOR	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4735477	104	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649387	104A	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649386	104B	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649385	104C	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649384	104D	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649383	104E	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649381	104F	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649382	104H	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4735476	105	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735475	107	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735473	108	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735472	109	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735471	110	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735470	111	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	0.7	2014-02-04
4735474	112	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	0.8	2014-02-04
4735469	113	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735465	114	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735464	115	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735463	116	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735462	117	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735461	118	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735460	119	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	0.7	2014-02-04
4735459	120	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	0.9	2014-02-04
4735458	121	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735457	122	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735456	123	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735455	124 OFFICE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	1.0	2014-02-04
4735454	126 OFFICE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04

Radon test result report for:

MCKAY

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4735453	127	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	0.6	2014-02-04
4735452	128	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735451	129	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735449	130 EA OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735450	130 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649399	131	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649400	132	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649395	133 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649394	134 OFFICE	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	0.8	2014-02-04
4649393	135	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735481	BOOKKEEPER	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735468	BOY'S PE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649374	CONF ROOM	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	0.6	2014-02-04
4649379	COUNSELOR A-G	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649397	CUSTODIAN	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735466	GIRL'S PE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735482	JENNIFER S COUNS	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649398	MAPS	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735479	MEDIA OFFICE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649380	MRS. COMELLA	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	< 0.3	2014-02-04
4649375	OFFICE MANAGER	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	0.5	2014-02-04
4649376	PRINCIPAL	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	0.6	2014-02-04
4735478	SECURITY OFFICE	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735480	SPEECH	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4649396	STAFF ROOM	2014-01-27 @ 9:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735483	TELECOM RM	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04
4735467	TRAINING RM	2014-01-27 @ 10:00 am	2014-01-30 @ 4:00 pm	< 0.3	2014-02-04

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

February 4, 2014

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**SK
MCKAY**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4649371	102A	2014-01-27 @ 9:00 am	2014-01-30 @ 3:00 pm	0.9	2014-02-04

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