

# INDUSTRIAL HYGIENE REPORT

## RADON TESTING REPORT

### Kennedy Elementary School

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

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On-site: December 9–12, 2014

Report: December 31, 2014

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#### **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 Tuesday, December 9 to Friday, December 12, 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:**SCHOOL  
KENNEDY**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7015483	CONF RM	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.5	2014-12-15
7015492	CUSTODIAN	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.7	2014-12-15
7015488	FACULTY RM	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.0	2014-12-15
7015490	INSTR COACH	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.1	2014-12-15
7015489	KITCHEN	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.1	2014-12-15
7015487	MEDIA	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.0	2014-12-15
7015509	MUSIC	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.9	2014-12-15
7015508	PE OFFICE	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.8	2014-12-15
7015482	PRINCIPAL	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	< 0.3	2014-12-15
7015495	RM 10	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.6	2014-12-15
7015497	RM 11	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	< 0.3	2014-12-15
7015499	RM 12	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.6	2014-12-15
7015501	RM 13	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.0	2014-12-15
7015500	RM 14	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.4	2014-12-15
7015498	RM 15	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.9	2014-12-15
7015496	RM 16	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.9	2014-12-15
7015494	RM 17	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.8	2014-12-15
7015493	RM 18	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.6	2014-12-15
7015491	RM 19	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	1.0	2014-12-15
7015506	RM 3	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	< 0.3	2014-12-15
7015507	RM 4	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.9	2014-12-15
7015505	RM 5	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.5	2014-12-15
7015504	RM 6	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	< 0.3	2014-12-15
7015503	RM 7	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.6	2014-12-15
7015486	RM 9	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	< 0.3	2014-12-15
7015484	RM A	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.8	2014-12-15
7015485	RM C	2014-12-09 @ 10:00 am	2014-12-12 @ 1:00 pm	0.9	2014-12-15