

# INDUSTRIAL HYGIENE REPORT

## RADON TESTING REPORT

### Weddle Elementary School

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

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On-site: January 21–24, 2014

Report: February 4, 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 Monday, January 21 to Thursday, January 24, 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:

SK

WEDDLE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4649350	A1	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.7	2014-01-28
4649351	A2	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649353	A4	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649355	A7	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649356	B1	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649357	B2	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649358	B3	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649359	B4	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.8	2014-01-28
4649360	B5	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	1.1	2014-01-28
4649361	B6	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.9	2014-01-28
4649338	BEHAVIOR SP	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649362	C1	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.7	2014-01-28
4649363	C2	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649364	C3	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	1.0	2014-01-28
4649365	C4	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649366	C5	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649367	C6	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649346	COMMUNITY	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649368	COMP LAB	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649344	CUSTODIAN	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649348	D12	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649349	D12 OFFICE	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649345	D29	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649341	INSTR COACH	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649342	KITCHEN	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	< 0.3	2014-01-28
4649370	MEDIA OFFICE	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649369	MEDIA WORK	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649347	MUSIC	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.6	2014-01-28
4649343	PE OFFICE	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649337	PRINCIPAL	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649340	SPEECH	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.5	2014-01-28
4649339	STAFF RM	2014-01-21 @ 10:00 am	2014-01-24 @ 11:00 am	0.7	2014-01-28