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# INDUSTRIAL HYGIENE RADON REPORT

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## RADON TESTING REPORT

### South Salem High School Classroom 118

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 7-10, 2014

Report: January 23, 2014

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#### **PURPOSE**

Follow up radon testing was done in Classroom 118 to determine if the radon levels are remaining below the EPA's Action Level after the sealing up of openings in the east foundation wall and around the penetrations in the chemistry lab bench cabinets.

#### **CONCLUSION**

The classroom had low levels of radon, indicating the radon mitigation controls are reducing the radon gas levels.

#### **SAMPLE RESULTS**

After the openings to the foundation were sealed, the ambient radon level in Classroom 118 was 0.9 pCi/L and inside the chemistry lab bench cabinet was 0.6 pCi/L.

The initial tests conducted November 19-21, 2013 measured radon levels in Classroom 118 at 4.4 pCi/L

The first follow up tests conducted December 3-6, 2013 measured radon levels in Classroom 118 at 2.7 pCi/L, and inside the lab bench the radon level was 8.5 pCi/L.

#### **TESTING**

Radon Air-Chek short-term test devices were used in the rooms by suspending the device in each room. The testing occurred from January 7-10, 2014 during normal and routine school ventilation system operation.

## **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. 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. Pressure differential between the building and the soil surrounding the foundation can draw soil gases into the building.

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 be taken to reduce the exposure to radon gas.

## **CONTROL OF RADON LEVELS IN SCHOOLS**

Salem Keizer's Maintenance Department sealed up openings to the foundation in the chemistry lab bench cabinets and along the east facing wall. Testing after these openings were sealed confirmed that this was the source of the radon in the classroom.

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January 14, 2014

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**SK**

**SOUTH HS**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4602069	118 CABINET	2014-01-07 @ 1:00 pm	2014-01-10 @ 8:00 am	0.6	2014-01-14
4602070	RM 118	2014-01-07 @ 1:00 pm	2014-01-10 @ 8:00 am	0.9	2014-01-14

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