

INDUSTRIAL HYGIENE REPORT

Parrish Middle School

Report to: Vonnie Good, Risk Management

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On-site: February 26–March 1, 2013

Report: March 6, 2013

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, February 26 to Friday, March 1, 2013, 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 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

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:

SK

PARRISH

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4601802	112 OFFICE	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601800	113 OFFICE	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601803	115 OFFICE	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601780	ASSISTANT P	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601779	BEHAVIOR SP	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601806	BOYS LOCKER	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601777	CONF RM	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601805	GIRLS LOCKER	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601773	KITCHEN	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601778	LAISON OFFICE	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601798	LIFE SKILL	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601796	MEDIA SPEC	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601774	OFFICE MANAGER	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601776	PRINCIPAL	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601775	RECORDS OFFICE	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601790	RM 102	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601792	RM 103	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601793	RM 104	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.5	2013-03-05
4601789	RM 105	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601794	RM 106	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	1.0	2013-03-05
4601788	RM 107	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601787	RM 108	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601795	RM 110	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601799	RM 113	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601801	RM 114	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601804	RM 116	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601771	RM 117	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601772	RM 118	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	< 0.3	2013-03-05
4601781	RM 120	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.5	2013-03-05
4601786	RM 121	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.8	2013-03-05
4601783	RM 124	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601785	RM 125	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.6	2013-03-05
4601784	RM 126	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.8	2013-03-05
4601791	RM101	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.9	2013-03-05
4601782	RM122	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	0.7	2013-03-05
4601797	SPEECH	2013-02-26 @ 10:00 am	2013-03-01 @ 3:00 pm	2.3	2013-03-05