



December 21, 2018

David Callaway  
David Douglas School District  
11300 NE Halsey Street  
Portland, Oregon 97220

Via email: david\_callaway@ddsd40.org

Regarding: District-Wide Radon Testing  
Ron Russell Middle School  
3955 SE 112th Avenue  
Portland, Oregon  
PBS Project 23179.065, Phase 0001

Dear Mr. Callaway:

From December 11 to 14, 2018, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at the Ron Russell Middle School, located at 3955 SE 112th Avenue in Portland, Oregon.

The Environmental Protection Agency (EPA) recommends, and the Oregon Health Authority (OHA) requires, that school buildings be tested for radon and that any radon concentrations be maintained below 4.0 picocuries per liter (pCi/L) of air. PBS used Air Chek, Inc., brand single-use, short-term radon test kits to measure radon levels in frequently-occupied rooms that are in contact with the ground or above unoccupied basements or crawlspaces.

The following table lists all samples in which radon levels were found to be above the EPA action level.

**Test Kits with Radon 4.0 pCi/L or above**

Test Kit Number	Sample Location	Radon Level (pCi/L)
9123435	Boys Locker Room Office	5.0
9123448	Custodian's Office	11.2
9123436	Girls Locker Room Office	4.7
9123432	Gym 2	5.3
9123431	Room 134 Office Duplicate	5.4
9123429	Room 134 Office	5.3
9123411	Room 148	4.4
9123439	Room 186	4.9
9123437	Room 186 Duplicate	5.1

A long-term radon detector kit has been placed in all areas with radon levels between 4.0 and 8.0 pCi/L.

See the attached laboratory analysis report for more details.

In addition to the EPA recommendation that radon concentrations not exceed 4.0 pCi/L, OHA recommends that the following steps be conducted based on the results of a room's initial short-term test:

- **If the result is less than 2.0 pCi/L**, school districts are required to test again every 10 years, per Oregon Revised Statute 332.166-167.
- **If the result is between 2.0 pCi/L and 4.0 pCi/L**, consider fixing (i.e., lowering) the radon in that room.
- **If the result is from 4.0 pCi/L to 8.0 pCi/L**, perform a follow-up measurement of that room using a long-term test. This test should be conducted over as much of a nine-month school year as possible, when the room is likely to be occupied. If that result is equal to or greater than 4.0 pCi/L, the radon in the room should be fixed (i.e., lowered).
- **If the initial short-term test result is equal to or greater than 8.0 pCi/L**, conduct a second short-term test and average its result with the initial short-term test result. If the average of the two is equal to or greater than 4.0 pCi/L, radon in the room should be fixed (i.e., lowered).

Note: A great difference in the results of the short-term tests may indicate a flaw in the testing process. Investigate and consider retesting. For situations in which one of the test results is equal to or greater than 4.0 pCi/L, if the higher result is two or more times the lower result, repeat the test.

#### **LIMITATIONS OF SCOPE**

This study was limited to the tests and locations as previously indicated. The site as a whole may have other environmental concerns that will not be characterized by this study. The findings and conclusions of this work are not scientific certainties, but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 503.935.5484 or [dale.voeller@pbsusa.com](mailto:dale.voeller@pbsusa.com) with any questions or comments.

Sincerely,

Dale Voeller, CHMM, CSP  
Senior Project Manager

Attachment: Air Chek, Inc., Laboratory Analysis Report

DSV:mo

Radon test result report for:**RON RUSSEL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9123412	ATTEND. OFFICE	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.1 ± 0.2	2018-12-15
9123435	BOYS LOCKER OFF	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	5.0 ± 0.4	2018-12-15
9123449	CAFETERIA 1	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	1.5 ± 0.2	2018-12-15
9123446	CAFETERIA 2	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	1.4 ± 0.2	2018-12-15
9123451	CUSTODIAN BLANK	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	< 0.3	2018-12-15
9123448	CUSTODIAN OFF.	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	11.2 ± 0.5	2018-12-15
9123407	FACULTY LOUNGE	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.5 ± 0.3	2018-12-15
9123436	GIRLS LOCKER OFF	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	4.7 ± 0.3	2018-12-15
9123433	GYM 1	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	3.6 ± 0.3	2018-12-15
9123432	GYM 2	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	5.3 ± 0.3	2018-12-15
9123452	KITCHEN OFF DUP	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	2.3 ± 0.3	2018-12-15
9123450	KITCHEN OFF.	2018-12-11 @ 1:00 pm	2018-12-14 @ 12:00 pm	2.0 ± 0.2	2018-12-15
9123401	MAIN OFFICE	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.4 ± 0.3	2018-12-15
9123406	OFFICE WORK RM	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.9 ± 0.3	2018-12-15
9123426	RM 134	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	3.9 ± 0.3	2018-12-15
9123431	RM 134 OFF DUP	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	5.4 ± 0.4	2018-12-15
9123429	RM 134 OFFICE	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	5.3 ± 0.4	2018-12-15
9123427	RM 140 OFFICE	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.5 ± 0.3	2018-12-15
9123413	RM 157 DUP	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.9 ± 0.2	2018-12-15
9123447	RM 191 OFFICE	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.8 ± 0.2	2018-12-15
9123418	ROOM 101	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.8 ± 0.2	2018-12-15
9123421	ROOM 102	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.7 ± 0.2	2018-12-15
9123422	ROOM 103	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	< 0.3	2018-12-15
9123423	ROOM 104	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.7 ± 0.2	2018-12-15
9123424	ROOM 105	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.7 ± 0.2	2018-12-15
9123425	ROOM 107	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.2 ± 0.2	2018-12-15
9123419	ROOM 107 BLANK	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	< 0.3	2018-12-15
9123420	ROOM 107 DUP	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.3 ± 0.2	2018-12-15
9123430	ROOM 109	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.7 ± 0.2	2018-12-15
9123415	ROOM 110	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.6 ± 0.2	2018-12-15
9123416	ROOM 111	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.9 ± 0.2	2018-12-15
9123417	ROOM 112	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	0.6 ± 0.2	2018-12-15
9123428	ROOM 140	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	3.7 ± 0.3	2018-12-15
9123414	ROOM 141	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.3 ± 0.3	2018-12-15
9123405	ROOM 144	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	3.1 ± 0.3	2018-12-15
9123404	ROOM 145	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.9 ± 0.3	2018-12-15
9123411	ROOM 148	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	4.4 ± 0.3	2018-12-15

December 17, 2018

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

Radon test result report for:

**RON RUSSEL  
MAIN**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9123403	ROOM 152	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	1.8 ± 0.3	2018-12-15
9123402	ROOM 157	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.2 ± 0.3	2018-12-15
9123410	ROOM 159	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.5 ± 0.3	2018-12-15
9123409	ROOM 160	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.3 ± 0.3	2018-12-15
9123408	ROOM 161	2018-12-11 @ 12:00 pm	2018-12-14 @ 12:00 pm	2.0 ± 0.3	2018-12-15
9123445	ROOM 182	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	1.1 ± 0.2	2018-12-15
9123442	ROOM 183	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.9 ± 0.3	2018-12-15
9123441	ROOM 185	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.8 ± 0.2	2018-12-15
9123439	ROOM 186	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	4.9 ± 0.4	2018-12-15
9123437	ROOM 186 DUP	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	5.1 ± 0.4	2018-12-15
9123434	ROOM 187	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.7 ± 0.2	2018-12-15
9123440	ROOM 188	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	1.7 ± 0.2	2018-12-15
9123443	ROOM 189	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	1.5 ± 0.2	2018-12-15
9123444	ROOM 190	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.7 ± 0.2	2018-12-15
9123438	ROOM 191	2018-12-11 @ 1:00 pm	2018-12-14 @ 1:00 pm	0.9 ± 0.2	2018-12-15

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