



December 4, 2017

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

Via email: david\_callaway@ddsd40.org

Regarding: District-Wide Radon Testing  
David Douglas High School, South Building  
1001 SE 135th Avenue  
Portland, Oregon 97233  
PBS Project 23179.043, Phase 0002

Dear Mr. Callaway:

From October 30 to November 17, 2017, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at David Douglas High School, South building located at 1001 SE 135th Avenue in Portland, Oregon.

The Environmental Protection Agency (EPA) and Oregon Health Authority (OHA) recommend that 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. Following OHA protocol samples with results equal to or greater than 8.0 pCi/L were retested. Retest samples include a "#2" in the sample location description.

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

Test Kit Number	Sample location	Radon Level (pCi/L)
7957306	Horticulture building, 275-duplicate	4.2
7957307	Horticulture building, 275	4.0
7957308	South, dance room	7.9
7957309	South, dance room-2	10.5
7957310	South, boys locker room office	8.7
7957311	South, girls locker room office	8.1
7957313	South, cafeteria-2	4.1
7957314	South, wrestling coach office	6.7
7957321	South, 234	4.2
7957327	South, 233c-a	6.8

Test Kit Number	Sample location	Radon Level (pCi/L)
7957329	South, 233c-c	5.0
7957334	South, 243-d	5.1
7957342	South, 245a	4.2
7957375	South, 226 office	10.5
7957384	South, 241	9.8
7957385	South, 241a	8.7
7957386	South, 241b	8.7
7957387	South, 242f	7.2
7957388	South, 241e	9.1
7957389	South, 241d	10.9
7957390	South, 241c	8.8
7957391	South, 240	9.1
7957605	South, 241d #2	12.0
7957606	South, 241c #2	11.7
7957607	South, 241e #2	13.7
7957608	South, 240 #2	9.8
7957609	South, 241b #2	12.2
7957610	South, 241a #2	11.3
7957611	South, 241 #2	11.6
7957612	South, girls locker room office #2	7.1
7957613	South, dance room #2	4.8
7957614	South, boys locker room office #2	7.4
7957615	South, 226 office #2	7.6

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 503.417.7694 or [chris.boyce@pbsusa.com](mailto:chris.boyce@pbsusa.com) with any questions or comments.

Sincerely,



Chris Boyce  
Project Manager

Attachment: AirChek, Inc Laboratory Analysis Report

CB::bmp

Radon test result report for:  
**HIGH SCHOOL - SOUTH  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7957345	202	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.3 ± 0.3	2017-11-13
7957346	203	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.9 ± 0.3	2017-11-13
7957347	204	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.9 ± 0.3	2017-11-13
7957348	205	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.2 ± 0.3	2017-11-13
7957349	206	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.0 ± 0.3	2017-11-13
7957350	207	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.6 ± 0.3	2017-11-13
7957351	208	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.6 ± 0.3	2017-11-13
7957352	209	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.5 ± 0.3	2017-11-13
7957353	209-DUP	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.6 ± 0.3	2017-11-13
7957358	210/211	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957360	212	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.7 ± 0.3	2017-11-13
7957361	213	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.7 ± 0.3	2017-11-13
7957362	214	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957363	215	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957364	216	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.9 ± 0.3	2017-11-13
7957365	217	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	1.1 ± 0.3	2017-11-13
7957366	218	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	< 0.3	2017-11-13
7957367	219	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.8 ± 0.3	2017-11-13
7957368	220	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957369	221	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.8 ± 0.3	2017-11-13
7957372	222	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.9 ± 0.3	2017-11-13
7957373	223	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	1.1 ± 0.3	2017-11-13
7957376	225	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	3.5 ± 0.4	2017-11-13
7957374	226	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	3.2 ± 0.4	2017-11-13
7957375	226 OFFICE	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	10.5 ± 0.6	2017-11-13
7957370	227	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.9 ± 0.3	2017-11-13
7957371	227-DUP	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.8 ± 0.3	2017-11-13
7957359	228	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.7 ± 0.3	2017-11-13
7957381	229	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	1.4 ± 0.3	2017-11-13
7957382	230	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	1.4 ± 0.3	2017-11-13
7957318	231	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	1.9 ± 0.3	2017-11-13
7957319	232	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	2.2 ± 0.4	2017-11-13
7957322	233	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	0.8 ± 0.3	2017-11-13
7957323	233-DUP	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	1.2 ± 0.3	2017-11-13
7957324	233A	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	2.2 ± 0.3	2017-11-13
7957325	233B	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	1.9 ± 0.4	2017-11-13
7957326	233C	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	3.9 ± 0.4	2017-11-13

Radon test result report for:  
**HIGH SCHOOL - SOUTH  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7957327	233C-A	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	6.8 ± 0.5	2017-11-13
7957328	233C-B	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	3.4 ± 0.4	2017-11-13
7957329	233C-C	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	5.0 ± 0.4	2017-11-13
7957321	234	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	4.2 ± 0.4	2017-11-13
7957320	235	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	2.7 ± 0.4	2017-11-13
7957316	238	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	1.6 ± 0.3	2017-11-13
7957315	239	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	1.8 ± 0.3	2017-11-13
7957391	240	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	9.1 ± 0.6	2017-11-13
7957384	241	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	9.8 ± 0.6	2017-11-13
7957385	241A	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	8.7 ± 0.5	2017-11-13
7957386	241B	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	8.7 ± 0.5	2017-11-13
7957390	241C	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	8.8 ± 0.6	2017-11-13
7957389	241D	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	10.9 ± 0.6	2017-11-13
7957388	241E	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	9.1 ± 0.5	2017-11-13
7957387	242F	2017-11-06 @ 7:00 pm	2017-11-09 @ 4:00 pm	7.2 ± 0.5	2017-11-13
7957330	243	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.8 ± 0.3	2017-11-13
7957331	243-A	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.1 ± 0.3	2017-11-13
7957332	243-B	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	2.4 ± 0.4	2017-11-13
7957333	243-C	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	3.1 ± 0.4	2017-11-13
7957334	243-D	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	5.1 ± 0.4	2017-11-13
7957340	245	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.3 ± 0.3	2017-11-13
7957342	245A	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	4.2 ± 0.4	2017-11-13
7957341	245B	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	3.8 ± 0.4	2017-11-13
7957343	246	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	2.2 ± 0.3	2017-11-13
7957356	BLANK-2	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	< 0.3	2017-11-13
7957379	BLANK-3	2017-11-06 @ 6:00 pm	2017-11-09 @ 3:00 pm	< 0.3	2017-11-13
7957336	BOARD RM-DUP	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.8 ± 0.3	2017-11-13
7957335	BOARD ROOM	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.8 ± 0.3	2017-11-13
7957310	BOYS LR OFFICE	2017-11-06 @ 3:00 pm	2017-11-09 @ 2:00 pm	8.7 ± 0.5	2017-11-13
7957312	CAFETERIA-1	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	3.5 ± 0.4	2017-11-13
7957313	CAFETERIA-2	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	4.1 ± 0.4	2017-11-13
7957380	CUST. OFFICE	2017-11-06 @ 6:00 pm	2017-11-09 @ 3:00 pm	0.9 ± 0.3	2017-11-13
7957308	DANCE ROOM	2017-11-06 @ 3:00 pm	2017-11-09 @ 2:00 pm	7.9 ± 0.5	2017-11-13
7957309	DANCE ROOM-2	2017-11-06 @ 3:00 pm	2017-11-09 @ 2:00 pm	10.5 ± 0.6	2017-11-13
7957354	DORNING OFFICE	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.9 ± 0.3	2017-11-13
7957337	ESL	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.8 ± 0.3	2017-11-13
7957311	GIRLS LR OFFICE	2017-11-06 @ 4:00 pm	2017-11-09 @ 3:00 pm	8.1 ± 0.5	2017-11-13

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November 13, 2017

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

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Radon test result report for:  
**HIGH SCHOOL - SOUTH  
MAIN**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7957383	KITCHEN OFFICE	2017-11-06 @ 7:00 pm	2017-11-09 @ 3:00 pm	1.6 ± 0.4	2017-11-13
7957344	MAKER SPACE	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	0.9 ± 0.3	2017-11-13
7957338	PRODUCTION	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	< 0.3	2017-11-13
7957357	S. MAIN OFF.-DUP	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957355	S. MAIN OFFICE	2017-11-06 @ 6:00 pm	2017-11-09 @ 4:00 pm	0.6 ± 0.3	2017-11-13
7957377	STAFF LUNCH	2017-11-06 @ 6:00 pm	2017-11-09 @ 3:00 pm	1.1 ± 0.3	2017-11-13
7957378	STAFF LUNCH-DUP	2017-11-06 @ 6:00 pm	2017-11-09 @ 3:00 pm	1.0 ± 0.3	2017-11-13
7957339	TRAINING RM	2017-11-06 @ 5:00 pm	2017-11-09 @ 3:00 pm	1.4 ± 0.3	2017-11-13
7957314	WRESTLING COACH	2017-11-06 @ 4:00 pm	2017-11-09 @ 2:00 pm	6.7 ± 0.5	2017-11-13

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

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November 13, 2017

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

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Radon test result report for:  
**HIGH SCHOOL - SOUTH  
HORTICULTURE BLDG**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7957307	275	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	4.0 ± 0.4	2017-11-13
7957306	275-DUP	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	4.2 ± 0.4	2017-11-13

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November 13, 2017

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

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Radon test result report for:  
**HIGH SCHOOL - SOUTH  
SHOP BLDG**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7957302	AUTO	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	1.0 ± 0.3	2017-11-13
7957303	AUTO - GARAGE	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	1.0 ± 0.3	2017-11-13
7957304	AUTO-ENGINE SHOP	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	0.6 ± 0.3	2017-11-13
7957305	AUTO-OFFICE	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	0.6 ± 0.3	2017-11-13
7957301	BLANK	2017-11-06 @ 3:00 pm	2017-11-09 @ 5:00 pm	< 0.3	2017-11-13

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Radon test result report for:  
**HIGH SCHOOL - SOUTH  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7957615	226 OFFICE #2	2017-11-14 @ 11:00 am	2017-11-17 @ 10:00 am	7.6 ± 0.5	2017-11-20
7957608	240 #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	9.8 ± 0.5	2017-11-20
7957611	241 #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	11.6 ± 0.6	2017-11-20
7957610	241A #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	11.3 ± 0.6	2017-11-20
7957609	241B #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	12.2 ± 0.6	2017-11-20
7957606	241C #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	11.7 ± 0.6	2017-11-20
7957605	241D #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	12.0 ± 0.6	2017-11-20
7957607	241E #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	13.7 ± 0.6	2017-11-20
7957614	BOYS LR OFF. #2	2017-11-14 @ 11:00 am	2017-11-17 @ 10:00 am	7.4 ± 0.5	2017-11-20
7957613	DANCE ROOM #2	2017-11-14 @ 11:00 am	2017-11-17 @ 10:00 am	4.8 ± 0.4	2017-11-20
7957612	GIRLS LR OFF. #2	2017-11-14 @ 11:00 am	2017-11-17 @ 10:00 am	7.1 ± 0.5	2017-11-20