



January 2, 2019

Casey Waletich
Executive Director of Facilities, Safety, and Operations
Hillsboro School District
4901 SE Witch Hazel Road
Hillsboro, Oregon 97123

Via email: waleticc@hsd.k12.or.us

Regarding: District Wide Radon Testing
R.A. Brown Middle School
1505 SW Cornelius Pass Road
Hillsboro, Oregon
PBS Project 23440.024, Phase 0003

Dear Mr. Waletich:

From October 15 to October 18, 2018, and from December 17 to December 20, 2018, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at R.A. Brown Middle School located at 1505 SW Cornelius Pass Road in Hillsboro, 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 during the initial round of testing in October 2018.

Test Kits with Radon 4.0 pCi/L or Above: October 2018

Test Kit Number	Sample location	Radon Level (pCi/L)
9119801	Classroom Y7	4.2
9119815	Counseling 1	5.7
9119817	Counseling 2	4.7
91198520	Counseling 2 Duplicate	5.1
9119818	Counseling 3	6.6
9119816	Counseling 4	5.0
9119814	Counseling 5	4.9
9119819	Counseling 6	5.2
9119260	Classroom G3	5.6
9119804	Library 1	4.3
9119806	Library 2	4.6
9119807	Library Computer Lab	4.6
9119808	Library Office 1	5.8
9119809	Library Office 2	5.9

Test Kit Number	Sample location	Radon Level (pCi/L)
9119812	Main Counseling	4.7
9119805	Teacher's Lounge	4.5

Each of these locations were retested with short-term radon detector kits in December 2018, after adjustments were made to the ventilation systems serving these areas. The retesting indicated that all areas were below 4.0 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 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 with any questions or comments.

Sincerely,

Dale Voeller
Senior Project Manager

Attachment: AirChek, Inc., Laboratory Analysis Report

DSV:mo

Radon test result report for:**R.A. BROWN****MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9119254	1ST GYM 1	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.8 ± 0.3	2018-10-19
9119259	1ST GYM 2	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.6 ± 0.2	2018-10-19
9119250	ART ROOM	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.5 ± 0.2	2018-10-19
9119237	ASST. PRINCIPAL	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119283	B1	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119284	B2	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.4 ± 0.2	2018-10-19
9119246	BAND OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.2 ± 0.2	2018-10-19
9119253	BAND OFFICE 2	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119245	BAND ROOM	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119266	BOYS PE OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	0.9 ± 0.2	2018-10-19
9119240	CAFETERIA 1	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.3 ± 0.2	2018-10-19
9119248	CAFETERIA 2	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	0.9 ± 0.2	2018-10-19
9119247	CAFETERIA 2 DUP	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	0.9 ± 0.2	2018-10-19
9119252	CHOIR ROOM	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.1 ± 0.2	2018-10-19
9119813	CLASSROOM 2 DUP	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.0 ± 0.2	2018-10-19
9119285	CLASSROOM B3	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119286	CLASSROOM B4	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.4 ± 0.2	2018-10-19
9119291	CLASSROOM B5	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.5 ± 0.2	2018-10-19
9119292	CLASSROOM B6	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	2.9 ± 0.3	2018-10-19
9119294	CLASSROOM B7	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.0 ± 0.2	2018-10-19
9119278	CLASSROOM B8	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.7 ± 0.2	2018-10-19
9119293	CLASSROOM B8 BLA	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	< 0.3	2018-10-19
9119262	CLASSROOM G5	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.3 ± 0.2	2018-10-19
9119264	CLASSROOM G7	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	2.5 ± 0.3	2018-10-19
9119263	CLASSROOM G8	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.7 ± 0.3	2018-10-19
9119255	CLASSROOM P2	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.2 ± 0.2	2018-10-19
9119257	CLASSROOM P2 DUP	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.1 ± 0.2	2018-10-19
9119276	CLASSROOM R6	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	2.5 ± 0.3	2018-10-19
9119277	CLASSROOM R8	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	2.4 ± 0.2	2018-10-19
9119810	CLASSROOM S1	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.5 ± 0.2	2018-10-19
9119811	CLASSROOM S2	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.6 ± 0.2	2018-10-19
9119296	CLASSROOM Y4	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.9 ± 0.2	2018-10-19
9119297	CLASSROOM Y4 BLA	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	< 0.3	2018-10-19
9119298	CLASSROOM Y5	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.4 ± 0.2	2018-10-19
9119299	CLASSROOM Y5 DUP	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.4 ± 0.3	2018-10-19
9119801	CLASSROOM Y7	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	4.2 ± 0.3	2018-10-19
9119802	CLASSROOM Y8	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.8 ± 0.2	2018-10-19

Radon test result report for:**R.A. BROWN****MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9119815	COUNSEL 1	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	5.7 ± 0.3	2018-10-19
9119817	COUNSEL 2	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	4.7 ± 0.3	2018-10-19
9119820	COUNSEL 2 DUP	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	5.1 ± 0.3	2018-10-19
9119818	COUNSEL 3	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	6.6 ± 0.3	2018-10-19
9119816	COUNSEL 4	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	5.0 ± 0.3	2018-10-19
9119821	COUNSEL 4 BLANK	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	< 0.3	2018-10-19
9119814	COUNSEL 5	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	4.9 ± 0.3	2018-10-19
9119819	COUNSEL 6	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	5.2 ± 0.3	2018-10-19
9119251	CUSTODIAL OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119241	DEAN OF STUDENTS	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.3 ± 0.2	2018-10-19
9119290	G10 1	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.9 ± 0.2	2018-10-19
9119289	G10 2	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.8 ± 0.2	2018-10-19
9119279	G10 OFFICE	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.9 ± 0.2	2018-10-19
9119260	G3	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	5.6 ± 0.3	2018-10-19
9119267	G4	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.6 ± 0.2	2018-10-19
9119261	G6	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	2.7 ± 0.3	2018-10-19
9119273	G9	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.5 ± 0.2	2018-10-19
9119268	G9 DUP	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.5 ± 0.2	2018-10-19
9119829	GIRLS LOCK DUP	2018-10-15 @ 1:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119823	GIRLS LOCKER ROO	2018-10-15 @ 1:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119243	HEALTH	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119244	HEALTH ADMIN	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119239	KITCHEN OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.1 ± 0.2	2018-10-19
9119804	LIBRARY 1	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	4.3 ± 0.3	2018-10-19
9119806	LIBRARY 2	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	4.6 ± 0.3	2018-10-19
9119807	LIBRARY COMP LAB	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	4.6 ± 0.3	2018-10-19
9119808	LIBRARY OFFICE	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	5.8 ± 0.3	2018-10-19
9119809	LIBRARY OFFICE 2	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	5.9 ± 0.3	2018-10-19
9119812	MAIN COUNSELING	2018-10-15 @ 1:00 pm	2018-10-18 @ 1:00 pm	4.7 ± 0.3	2018-10-19
9119231	MAIN OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119249	MRS. KIVETT	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	0.7 ± 0.2	2018-10-19
9119233	OFFICE MANAGER	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	0.8 ± 0.2	2018-10-19
9119238	OFFICE WOTKROOM	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.3 ± 0.2	2018-10-19
9119265	P2 OFFICE	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	2.5 ± 0.2	2018-10-19
9119242	PRINCIPAL	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.1 ± 0.2	2018-10-19
9119269	R1	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.2 ± 0.2	2018-10-19
9119282	R10	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	0.8 ± 0.2	2018-10-19

Radon test result report for:**R.A. BROWN
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9119281	R10 DUP	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119270	R2	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.8 ± 0.3	2018-10-19
9119275	R3	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119274	R4	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.1 ± 0.2	2018-10-19
9119271	R5	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	1.0 ± 0.2	2018-10-19
9119272	R7	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	0.6 ± 0.2	2018-10-19
9119280	R7 BLANK	2018-10-15 @ 12:00 pm	2018-10-18 @ 12:00 pm	< 0.3	2018-10-19
9119822	SECOND GYM 1	2018-10-15 @ 1:00 pm	2018-10-18 @ 12:00 pm	0.6 ± 0.2	2018-10-19
9119828	SECOND GYM 2	2018-10-15 @ 1:00 pm	2018-10-18 @ 12:00 pm	0.6 ± 0.2	2018-10-19
9119805	TEACHERS LOUNGE	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	4.5 ± 0.3	2018-10-19
9119256	WOODSHOP	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	1.6 ± 0.2	2018-10-19
9119258	WOODSHOP BLANK	2018-10-15 @ 11:00 am	2018-10-18 @ 12:00 pm	< 0.3	2018-10-19
9119287	Y1 CLASSROOM	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	2.2 ± 0.2	2018-10-19
9119288	Y2 CLASSROOM	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	0.6 ± 0.2	2018-10-19
9119295	Y3	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	3.6 ± 0.3	2018-10-19
9119300	Y6	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.1 ± 0.2	2018-10-19
9119803	Y9	2018-10-15 @ 12:00 pm	2018-10-18 @ 1:00 pm	1.0 ± 0.2	2018-10-19

Radon test result report for:**RA BROWN MS****MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9119901	CLASSROOM G3	2018-12-17 @ 4:00 pm	2018-12-20 @ 4:00 pm	1.1 ± 0.3	2018-12-24
9119902	CLASSROOM Y7	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	1.2 ± 0.4	2018-12-24
9119910	COUNSEL 1 RYAN	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119911	COUNSEL 1 RYAN DUPLICATE	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119912	COUNSEL 2 GREAVES	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119913	COUNSEL 3 BREHM	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119914	COUNSEL 4 ECHEVARRIA	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	0.5 ± 0.4	2018-12-24
9119915	COUNSEL 5 CONFERENCE RM	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119916	COUNSEL 6 DOLAN	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119907	LIBRARY 1 (NORTH)	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119908	LIBRARY 2 (EAST)	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119906	LIBRARY COMUTER LAB	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119904	LIBRARY OFFICE 1 HATCHER	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119905	LIBRARY OFFICE 2 EPLING	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119909	MAIN COUNSELING	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24
9119903	TEACHERS LOUNGE	2018-12-17 @ 5:00 pm	2018-12-20 @ 5:00 pm	< 0.3	2018-12-24