



November 4, 2019

Dave Peterson  
Hillsboro School District  
4901 SE Witch Hazel Road  
Hillsboro, Oregon 97123

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

Regarding:       District Wide Radon Testing  
                  Free Orchards Elementary School  
                  2499 S. Beech Street  
                  Cornelius, Oregon  
                  PBS Project 23440.024, Phase 0004

Dear Mr. Peterson:

From October 29 to November 1, 2019, PBS Engineering and Environmental Inc. (PBS) performed short term radon testing at Free Orchards Elementary School located at 2499 S. Beech Street in Cornelius, 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 AirChek, 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.

**Laboratory results indicate all short-term radon tests at Free Orchards Elementary School 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](mailto:dale.voeller@pbsusa.com) with any questions or comments.

Sincerely,

Dale Voeller, CHMM, CSP  
Senior Project Manager

Attachment: AirChek, Inc Laboratory Analysis Report

Radon test result report for:  
**FREE ORCHARDS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9227968	CAFETERIA 1	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9227981	CAFETERIA 2	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.0 ± 0.3	2019-11-04
9227974	CUSTODIAL OFFICE	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.7 ± 0.3	2019-11-04
9227979	GYM 1	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.8 ± 0.3	2019-11-04
9227923	GYM 2	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.7 ± 0.4	2019-11-04
9227924	GYM OFFICE	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.1 ± 0.3	2019-11-04
9227980	GYM OFFICE BLANK	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9227985	GYM OFFICE DUP	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.1 ± 0.3	2019-11-04
9227916	HEALTH ROOM	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9227909	KITCHEN OFFICE	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.6 ± 0.3	2019-11-04
9227917	MAIN OFFICE	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9208889	MUSIC ROOM	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9227967	PRINCIPAL OFFICE	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.1 ± 0.3	2019-11-04
9227960	ROOM 103	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	0.8 ± 0.3	2019-11-04
9227910	ROOM 104	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.1 ± 0.3	2019-11-04
9227986	ROOM 105	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.0 ± 0.3	2019-11-04
9227987	ROOM 115	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.0 ± 0.3	2019-11-04
9227971	ROOM 143	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.1 ± 0.3	2019-11-04
9200583	ROOM 144	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	1.4 ± 0.3	2019-11-04
9200581	ROOM 146	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.7 ± 0.3	2019-11-04
9208895	ROOM 149	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9200585	ROOM 150	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9200584	ROOM 150 OFFICE	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9200582	ROOM 151	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9200580	ROOM 152	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.6 ± 0.3	2019-11-04
9208890	ROOM 153	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	1.3 ± 0.4	2019-11-04
9208893	ROOM 154	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.7 ± 0.3	2019-11-04
9200596	ROOM 155	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9200597	ROOM 156	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9200598	ROOM 157	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.6 ± 0.3	2019-11-04
9200599	ROOM 158	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.8 ± 0.3	2019-11-04
9200595	ROOM 159	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.9 ± 0.3	2019-11-04
9200594	ROOM 160	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9200593	ROOM 161	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.8 ± 0.3	2019-11-04
9200592	ROOM 162	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.7 ± 0.3	2019-11-04
9200586	ROOM 162 DUP	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.8 ± 0.3	2019-11-04
9200591	ROOM 163	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	1.0 ± 0.3	2019-11-04

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November 4, 2019

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

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Radon test result report for:  
**FREE ORCHARDS**  
**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>
9200589	ROOM 163 BLANK	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	< 0.3	2019-11-04
9200590	ROOM 163 DUP	2019-10-29 @ 3:00 pm	2019-11-01 @ 6:00 pm	0.7 ± 0.3	2019-11-04
9227915	STAFF BREAK ROOM	2019-10-29 @ 2:00 pm	2019-11-01 @ 6:00 pm	1.0 ± 0.3	2019-11-04

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