



November 27, 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
Earl Boyles Elementary School
10822 SE Bush Street
Portland, Oregon
PBS Project 23179.065, Phase 0001

Dear Mr. Callaway:

From November 13 to 16, 2018, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at Earl Boyles Elementary School, located at 10822 SE Bush Street 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.

Laboratory results indicate that all short-term radon tests at Earl Boyles 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 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 with any questions or comments.

Sincerely,

Dale Voeller, CHMM, CSP
Senior Project Manager

Attachment: AirChek, Inc., Laboratory Analysis Report

DSV:mo

Radon test result report for:**EARL BOYLES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9123099	CAFETERIA 1	2018-11-13 @ 5:00 pm	2018-11-16 @ 6:00 pm	1.8 ± 0.4	2018-11-20
9123096	CAFETERIA 2	2018-11-13 @ 5:00 pm	2018-11-16 @ 6:00 pm	1.4 ± 0.3	2018-11-20
9123806	COMPUTER RM	2018-11-13 @ 5:00 pm	2018-11-16 @ 7:00 pm	< 0.3	2018-11-20
9123094	CUSTODIAL OFFICE	2018-11-13 @ 5:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.4	2018-11-20
9123083	GYM 1	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	2.2 ± 0.3	2018-11-20
9123084	GYM 2	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	1.9 ± 0.3	2018-11-20
9123081	GYM OFFICE	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	2.3 ± 0.4	2018-11-20
9123056	HEALTH ROOM	2018-11-13 @ 3:00 pm	2018-11-16 @ 6:00 pm	1.5 ± 0.4	2018-11-20
9123095	KITCHEN OFF DUP	2018-11-13 @ 5:00 pm	2018-11-16 @ 6:00 pm	2.0 ± 0.3	2018-11-20
9123100	KITCHEN OFFICE	2018-11-13 @ 5:00 pm	2018-11-16 @ 6:00 pm	1.9 ± 0.3	2018-11-20
9123807	LIBRARY 1	2018-11-13 @ 5:00 pm	2018-11-16 @ 7:00 pm	1.8 ± 0.3	2018-11-20
9123808	LIBRARY 2	2018-11-13 @ 5:00 pm	2018-11-16 @ 7:00 pm	2.3 ± 0.4	2018-11-20
9123801	LIBRARY OFFICE	2018-11-13 @ 5:00 pm	2018-11-16 @ 7:00 pm	2.2 ± 0.4	2018-11-20
9123051	MAIN OFFICE	2018-11-13 @ 3:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.3	2018-11-20
9123070	OBSERV. 1 BLANK	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	< 0.3	2018-11-20
9123078	OBSERVATION 1	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.8 ± 0.4	2018-11-20
9123075	OBSERVATION 2	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	2.6 ± 0.4	2018-11-20
9123052	OFFICE 51	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.5 ± 0.4	2018-11-20
9123054	OFFICE 52	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.6 ± 0.3	2018-11-20
9123053	OFFICE 53	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	< 0.3	2018-11-20
9123059	OFFICE 54	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.3 ± 0.4	2018-11-20
9123060	OFFICE 55	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.7 ± 0.3	2018-11-20
9123061	OFFICE 56	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.1 ± 0.4	2018-11-20
9123055	OFFICE WORK RM	2018-11-13 @ 3:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.3	2018-11-20
9123062	PRINCIPAL OFFICE	2018-11-13 @ 3:00 pm	2018-11-16 @ 6:00 pm	0.8 ± 0.3	2018-11-20
9123057	RM 1	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.2 ± 0.3	2018-11-20
9123074	RM 10	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	2.0 ± 0.4	2018-11-20
9123073	RM 11	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.7 ± 0.3	2018-11-20
9123072	RM 12	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	3.0 ± 0.4	2018-11-20
9123071	RM 13	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.6 ± 0.3	2018-11-20
9123069	RM 15	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	2.3 ± 0.3	2018-11-20
9123097	RM 15 DUP	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	2.1 ± 0.4	2018-11-20
9123068	RM 16	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.1 ± 0.4	2018-11-20
9123098	RM 16 BLANK	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	< 0.3	2018-11-20
9123067	RM 17	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.9 ± 0.3	2018-11-20
9123082	RM 18	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	1.3 ± 0.3	2018-11-20
9123091	RM 19	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	1.7 ± 0.4	2018-11-20

Radon test result report for:**EARL BOYLES****MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9123050	RM 2	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.4	2018-11-20
9123087	RM 20	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.8 ± 0.3	2018-11-20
9123092	RM 21	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	< 0.3	2018-11-20
9123089	RM 22	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.6 ± 0.3	2018-11-20
9123088	RM 23	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.7 ± 0.3	2018-11-20
9123090	RM 25	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.8 ± 0.3	2018-11-20
9123085	RM 26	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	0.7 ± 0.3	2018-11-20
9123086	RM 27	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	1.1 ± 0.3	2018-11-20
9123093	RM 27 DUP	2018-11-13 @ 4:00 pm	2018-11-16 @ 7:00 pm	1.0 ± 0.3	2018-11-20
9123064	RM 3	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.8 ± 0.3	2018-11-20
9123063	RM 4	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.8 ± 0.3	2018-11-20
9123066	RM 5	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.3	2018-11-20
9123080	RM 7	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.0 ± 0.4	2018-11-20
9123079	RM 7 DUP	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	0.9 ± 0.3	2018-11-20
9123077	RM 8	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.2 ± 0.4	2018-11-20
9123076	RM 9	2018-11-13 @ 4:00 pm	2018-11-16 @ 6:00 pm	1.6 ± 0.3	2018-11-20