



December 8, 2020

Randy Duvall
Mapleton School District #32
10878 E. Mapleton Road
Mapleton, Oregon 97453

Via email: rduval@mapleton.k12.or.us

Regarding: Elementary School – Short-Term Radon Testing
10878 E. Mapleton Road
Mapleton, Oregon 97453
PBS Project 52593.000

Dear Mr. Duval:

From November 17th, to November 19th, 2020 PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing for the Elementary School Building located at 10878 E. Mapleton Road in Mapleton, 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., 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. **No samples taken by PBS were found to be above the EPA action level of 4.0 pCi/L.**

In addition to the single-use, short-term radon test kits deployed in frequently occupied rooms, four (4) sample blanks, three (3) spike samples, and three (3) duplicates were analyzed by Air Chek, Inc. in Mills River, North Carolina for quality control (QC) purposes.

The following table presents the results of all tests conducted during this study. Results are listed in pCi/L.

Kit Number	Start Date	End Date	Room	Floor	Result (pCi/L)	Comments
9527807	11/17/2020	11/19/2020	CLASSROOM 300	1	< 0.3	
9527808	11/17/2020	11/19/2020	LOBBY 301	1	< 0.3	
9527833	11/17/2020	11/19/2020	GYM NE	1	1.1	
9527834	11/17/2020	11/19/2020	GYM SE	1	1	
9527836	11/17/2020	11/19/2020	KITCHEN OFFICE	1	0.8	Duplicate RPD: 12%
9527837	11/17/2020	11/19/2020	KITCHEN OFFICE	1	0.9	
9527838	11/17/2020	11/19/2020	LIBRARY 311	1	< 0.3	
9527839	11/17/2020	11/19/2020	LOBBY 307	1	< 0.3	
9527840	11/17/2020	11/19/2020	CLASSROOM 306	1	< 0.3	
9527841	11/17/2020	11/19/2020	344	1	< 0.3	Duplicate RPD: 0%
9527842	11/17/2020	11/19/2020	339	1	0.8	
9527843	11/17/2020	11/19/2020	CLASSROOM 305	1	< 0.3	

Kit Number	Start Date	End Date	Room	Floor	Result (pCi/L)	Comments
9527844	11/17/2020	11/19/2020	LOBBY 343	1	0.6	
9527845	11/17/2020	11/19/2020	344	1	< 0.3	
9527846	11/17/2020	11/19/2020	ROOM 333	1	< 0.3	
9527847	11/17/2020	11/19/2020	ROOM 338	1	0.8	
9527848	11/17/2020	11/19/2020	LOBBY 337	1	< 0.3	
9527849	11/17/2020	11/19/2020	HEALTH ROOM 329	1	2.5	
9527850	11/17/2020	11/19/2020	OFFICE 331	1	2.2	
9527851	11/17/2020	11/19/2020	OFFICE 328	1	3.9	
9527852	11/17/2020	11/19/2020	OFFICE 320	1	2.1	
9527853	11/17/2020	11/19/2020	LOUNGE 332	1	3.6	
9527854	11/17/2020	11/19/2020	LOUNGE 332	1	3.3	Duplicate RPD: 9%
9527855	11/17/2020	11/19/2020	ROOM 9	1	< 0.3	
9527856	11/17/2020	11/19/2020	ROOM 10 N	1	0.5	
9527857	11/17/2020	11/19/2020	ROOM 10 S	1	< 0.3	
9527858	11/17/2020	11/19/2020	LIBRARY	1	< 0.3	
9527865	---	---	---	---	< 0.3	Blank Device
9527871	---	---	---	---	< 0.3	Blank Device
9527872	---	---	---	---	< 0.3	Blank Device
9527873	---	---	---	---	< 0.3	Blank Device
9527803	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 27.2	Spike RPE: 1%
9527804	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 26.9	Spike RPE: 3%
9527805	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 27.9	Spike RPE: 1%

Simultaneous measurement results that are both less than (<) 4.0 pCi/L shall agree with a Relative Percent Difference (RPD) of less than (<) 67 percent. RPD is calculated by taking the difference between 2 results, dividing by the average the results, and multiplying by 100.

Relative Percentage Error (RPE) is calculated by taking the difference between a measured value and reference value, dividing by the reference, and multiplying by 100. A trend in RPE values that are more than 30% should be investigated.

No testing abnormalities were noted at the time of the investigation.

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 541.255.6182 or daniel.lyons@pbsusa.com with any questions or comments.

Sincerely,

Daniel Lyons
Industrial Hygiene Technician

Reviewed by: JH

Attachment: AirChek, Inc., Laboratory Analysis Report

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Tit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
27807	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	CLASSROOM 300	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27808	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LOBBY 301	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27833	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	GYM NE	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	1.1
27834	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	GYM SE	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	1.0
27836	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	D KITCHEN OFFICE	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.8
27837	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	KITCHEN OFFICE	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.9
27838	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LIBRARY 311	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27839	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LOBBY 307	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27840	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	CLASSROOM 306	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27841	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	D 344	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27842	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	339	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.8
27843	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	CLASSROOM 305	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27844	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LOBBY 343	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.6
27845	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	344	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27846	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	ROOM 333	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27847	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	ROOM 338	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.8
27848	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LOBBY 337	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27849	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	HEALTH ROOM 329	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	2.5
27850	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	OFFICE 331	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	2.2
27851	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	OFFICE 328	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	3.9
27852	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	OFFICE 320	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	2.1
27853	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LOUNGE 332	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	3.6
27854	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	D LOUNGE 332	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	3.3
27855	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	ROOM 9	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27856	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	ROOM 10 N	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	0.5
27857	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	ROOM 10 S	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3
27858	2020-11-17	6:00 pm	2020-11-19	6:00 pm	70	MAPLETON SCHOOL DISTRICT	ELEMENTARY SCHOOL	LIBRARY	MAPLETON SCHOOL DISTRICT ELEMENTARY	1	< 0.3

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9527865	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	SHOP	HALLWAY - B	52591	1	< 0.3
9527871	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - B	52591	1	< 0.3
9527872	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - B	52591	1	< 0.3
9527873	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	ELEMENTARY SCHOOL	HALLWAY - B	52591	1	< 0.3

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

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9527803	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - S	52591	1	27.2
9527804	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	ELEMENTARY SCHOOL	HALLWAY - S	52591	1	26.9
9527805	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	SHOP	HALLWAY - S	52591	1	27.9

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