

Phone 503 984 9737

www.cascadenviro.com

January 19, 2017

Mr. Scott Woods Newberg School District 29J 703 South Blaine Newberg, OR 97132

Re: Radon Testing & Analysis Report

Edwards Elementary 715 E. 8th Street

Newberg, Oregon 97132

Cascade Environmental Project No. 12122016-01

Dear Mr. Woods:

Cascade Environmental is pleased to present this letter report which details the findings of radon sampling conducted at the above referenced facility located in Newberg, Yamhill County, Oregon. The purpose of this study was to determine if levels of radon within the select subgrade and ground floor rooms are above the Environmental Protection Agency's (EPA) recommended action level for radon. The sampling was conducted in compliance with Oregon Revised Statute (ORS) 332.166-167. Sampling was conducted per the protocols provided in "Testing for Elevated Radon Levels in Oregon, A Protocol and Plan" (The protocol) produced by the Oregon Health Authority.

Introduction

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. Radon gas may enter the lowest level of a building through floor cracks, structural joints, or plumbing conduits. The EPA's recommended action level for annual exposure to radon gas is 4.0 picoCuries per liter of air (pCi/L). This recommended action level is not a regulatory requirement, but is the level at which the EPA recommends that building owners take action to reduce the level.

Sampling Methodology

Cascade Environmental conducted a survey for radon gas in all frequently occupied rooms in contact with the soil, whether the contact was slab-on-grade, a basement, a room above a crawl space or any combination of the above. A total of fifty-two rooms were tested from December 12, 2016 through December 15, 2016. Sampling was conducted by Mr. Robert Burns, Industrial Hygienist with Cascade Environmental and Mr. Scott Woods, District Risk Management Supervisor with Newberg School District. In addition, five duplicate samples, three blank samples and two spike samples were collected for quality control purposes per the protocol. The survey was performed to determine the potential presence of radon gas concentrations, and to develop recommendations for follow-up testing and/or potential mitigation systems as necessary. The canisters were left in place for no less than 48 hours and no longer than 96 hours, in accordance with the sampling protocol provided by the laboratory. The open canisters were placed at breathing air level under normal occupancy conditions. To ensure the canisters would be in place at the end of the sampling period, sample locations were identified in areas where the potential for disturbance was minimal. A total of 66 canisters (including duplicates, blanks, spikes and additional samples collected in rooms larger than 2,000 square feet) were collected, sealed, and forwarded for



analysis to AccuStar Labs in Medway, Massachusetts and were analyzed using EPA Method 402-R-92-004. The spike samples were submitted to Radon Measurements Lab (RML) in Colorado Springs, Colorado to be "spiked" with a known amount of radon prior to submittal to AccuStar Labs for quality control purposes. The laboratory analytical reports are included in Appendix A.

The following tables summarize the results of the radon gas samples collected from the facility:

Table 1 Edwards Elementary 715 E. 8 th Street Newberg, Oregon 97132					
Sampler Number	Radon Survey R Location	Results 2016 Floor	Results (pCi/L)		
01	Main Office	Main	1.6		
02	Main Office (Blank)	Main	<0.4		
03	Health Room	Main	0.9		
04	Office 01	Main	0.8		
05	Office 02, Principal	Main	0.6		
06	Office 02, Principal (Duplicate)	Main	0.8		
07	Staff Room	Main	1.0		
08	Conference Room	Main	1.1		
09	Work Room	Main	1.1		
10	Work Room (Duplicate)	Main	0.9		
11	Room 40	Main	1.8		
12	Room 39	Main	1.2		
13	Room 38	Main	1.4		
14	Room 36	Main	1.1		
15	Room 34	Main	0.9		
16	Room 32	Main	1.1		
17	Room 30	Main	1.2		
18	Room 29	Main	1.1		
19	Room 28	Main	0.9		
21	Room 31	Main	1.1		
22	Room 31 (Duplicate)	Main	1.1		



Table 1 Edwards Elementary 715 E. 8th Street Newberg, Oregon 97132 Radon Survey Results 201

Complex Number	Radon Survey Re		Describe (nC:/l)
Sampler Number	Location	Floor	Results (pCi/L)
23	Room 33	Main	1.4
24	Room 35	Main	1.2
25	Room 37	Main	1.4
26	Library	Main	1.0
27	Library	Main	1.1
28	Library Office	Main	1.1
29	Room 11	Main	0.9
30	Room 12	Main	1.4
31	Room 13	Main	1.3
32	Room 14	Main	1.1
33	Room 14 (Blank)	Main	<0.4
34	Room 15	Main	1.2
35	Room 16	Main	1.1
36	Gymnasium	Main	1.6
37	Gymnasium	Main	1.7
38	Gymnasium	Main	1.4
39	Gym Office	Main	1.1
40	Room 17	Main	1.1
41	Room 18	Main	1.3
42	Room 19	Main	1.2
43	Room 20	Main	1.0
44	Room 21	Main	1.7
45	Room 22	Main	2.4
46	Room 24	Main	1.2
47	Room 26	Main	0.8
48	Room 27	Main	0.8



Table 1 Edwards Elementary 715 E. 8 th Street Newberg, Oregon 97132 Radon Survey Results 2016						
Sampler Number Location Floor Results (pCi/l						
49	Room 25	Main	0.7			
50	Custodian's Office	Main	1.3			
51	Custodian's Office (Duplicate)	Main	1.4			
52	Room 23	Main	0.9			
53	Cafeteria	Main	1.1			
54	Cafeteria	Main	1.3			
55	Cafeteria Room 119	Main	1.9			
56	Music Room	Main	1.2			
57	Portable, WESD North	Main	<0.4			
58	Portable, WESD North (Duplicate)	Main	<0.4			
59	Portable, WESD South	Main	<0.4			
60	Portable, COLA 1	Main	<0.4			
61	Portable, COLA 2	Main	<0.4			
62	Portable, COLA 3	Main	<0.4			
63	Portable, COLA 4	Main	<0.4			
64	Portable, COLA 4 (Blank)	Main	<0.4			

Please note that sample # 22 was not collected or analyzed due the room being completely open to the hallway.

Table 2 Edwards Elementary 715 E. 8 th Street Newberg, Oregon 97132 Spike Results				
Device Number	Spike Value (pCi/L) (RML)	Results (pCi/L) (AccuStar Labs)		
3275461	16.4	16.4		
3275460	16.4	18.2		



CONCLUSION

The short-term radon sample results for Edwards Elementary School, located at 715 E. 8th Street in Newberg, Yamhill County, Oregon revealed concentrations of radon gas below the EPA's recommended action level of 4.0 pCi/L in all of the rooms tested. In addition, the results from the duplicates, blanks and spikes collected for quality control purposes were all within acceptable parameters per the protocol.

Based on the sample results, Cascade Environmental does not recommend further investigation at this time.

LIMITATIONS

This report provides a summary of the evidence collected and observations made by Cascade Environmental during this assessment. Cascade Environmental performed short-term radon testing to evaluate impacts to selected areas at this single point in time. Actual radon concentrations can vary between sample points, site conditions and usage. This report is based upon the information developed by Cascade Environmental as a result of this one-time sampling and does not guarantee that the site is free of radon or potentially hazardous materials or conditions, or that latent or undiscovered conditions will not become evident in the future.

Thank you for this opportunity to be of service to Newberg School District 29J. If you have any questions, please feel free to contact us at 503-984-9737 or via email at bob@cascadenviro.com.

Sincerely, **Cascade Environmental**

Robert Burns Principal

Attachments: Appendix A – Laboratory Results and Chain-of-Custody Documentation

Appendix B - Site Plan

APPENDIX A

LABORATORY RESULTS & CHAIN OF CUSTODY DOCUMENTATION



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary 715 East 8th Street Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021070	3275510	12/12/2016 7:15 am	12/15/2016 7:30 am	Main Floor Main Office	1.6
2021071	3275509	12/12/2016 7:15 am	12/15/2016 7:30 am	Main Floor Main Office Field Blank	< 0.4
2021072	3275511	12/12/2016 7:16 am	12/15/2016 7:31 am	Main Floor Health Room	0.9
2021073	3275514	12/12/2016 7:17 am	12/15/2016 7:34 am	Main Floor Office 01	0.8
2021074	3275459	12/12/2016 7:20 am	12/15/2016 7:35 am	Main Floor Office 02 Principal	0.6
2021075	3275463	12/12/2016 7:20 am	12/15/2016 7:35 am	Main Floor Office 02 Principal Duplicate	0.8
2021076	3275513	12/12/2016 7:23 am	12/15/2016 7:37 am	Main Floor Staff Room	1.1
2021077	3275456	12/12/2016 7:24 am	12/15/2016 7:38 am	Main Floor Conference Room	1.1
2021078	3275462	12/12/2016 7:26 am	12/15/2016 7:39 am	Main Floor Work Room	1.1
2021079	3275512	12/12/2016 7:26 am	12/15/2016 7:39 am	Main Floor Work Room Duplicate	0.9

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chiveland

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary 715 East 8th Street Newberg OR 97132

Log Number	Device Number	Test Exposul	re Duration:	Area Tested	Result (pCi/L)
2021080	3293666	12/12/2016 7:30 am	12/15/2016 7:11 am	Main Floor Room 40	1.8
2021081	3293653	12/12/2016 7:32 am	12/15/2016 7:42 am	Main Floor Room 39	1.2
2021082	3293652	12/12/2016 7:35 am	12/15/2016 7:44 am	Main Floor Room 38	1.4
2021083	3293650	12/12/2016 7:38 am	12/15/2016 7:46 am	Main Floor Room 36	1.1
2021084	3293656	12/12/2016 7:40 am	12/15/2016 7:48 am	Main Floor Room 34	0.9
2021085	3293668	12/12/2016 7:42 am	12/15/2016 7:50 am	Main Floor Room 32	1.1
2021086	3293654	12/12/2016 7:44 am	12/15/2016 7:51 am	Main Floor Room 30	1.2
2021087	3293645	12/12/2016 7:46 am	12/15/2016 7:53 am	Main Floor Room 29	1.1
2021088	3293647	12/12/2016 7:48 am	12/15/2016 7:55 am	Main Floor Room 28	0.9
2021089	3293667	12/12/2016 7:53 am	12/15/2016 7:57 am	Main Floor Room 31	1.1

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chiveland

Disclaimer:

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary
715 East 8th Street
Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021090	3293651	12/12/2016 7:53 am	12/15/2016 7:57 am	Main Floor Room 31 Duplicate	1.1
2021091	3293649	12/12/2016 7:55 am	12/15/2016 7:58 am	Main Floor Room 33	1.4
2021092	3293655	12/12/2016 7:57 am	12/15/2016 8:00 am	Main Floor Room 35	1.2
2021093	3293643	12/12/2016 7:59 am	12/15/2016 8:01 am	Main Floor Room 37	1.4
2021094	3293658	12/12/2016 8:03 am	12/15/2016 8:03 am	Main Floor Library	1.0
2021095	3293644	12/12/2016 8:04 am	12/15/2016 8:04 am	Main Floor Library	1.1
2021096	3293657	12/12/2016 8:05 am	12/15/2016 8:07 am	Main Floor Library Office	1.1
2021097	3293642	12/12/2016 8:11 am	12/15/2016 8:09 am	Main Floor Room 11	0.9
2021098	3293640	12/12/2016 8:14 am	12/15/2016 8:10 am	Main Floor Room 12	1.4
2021099	3293641	12/12/2016 8:15 am	12/15/2016 8:12 am	Main Floor Room 13	1.3

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chiveland

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary 715 East 8th Street Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021100	3293690	12/12/2016 7:53 am	12/15/2016 8:21 am	Main Floor Room 14	1.1
2021101	3293686	12/12/2016 7:50 am	12/15/2016 8:21 am	Main Floor Room 14 Field Blank	< 0.4
2021102	3293663	12/12/2016 7:43 am	12/15/2016 8:19 am	Main Floor Room 15	1.2
2021103	3293693	12/12/2016 7:47 am	12/15/2016 8:17 am	Main Floor Room 16	1.1
2021104	3293679	12/12/2016 7:45 am	12/15/2016 8:16 am	Main Floor Gymnasium	1.6
2021105	3293692	12/12/2016 7:42 am	12/15/2016 8:14 am	Main Floor Gymnasium	1.7
2021106	3293675	12/12/2016 7:41 am	12/15/2016 8:15 am	Main Floor Gymnasium	1.4
2021107	3293680	12/12/2016 7:43 am	12/15/2016 8:13 am	Main Floor Gym Office	1.1
2021108	3293669	12/12/2016 7:38 am	12/15/2016 8:25 am	Main Floor Room 17	1.1
2021109	3293681	12/12/2016 7:37 am	12/15/2016 8:24 am	Main Floor Room 18	1.3

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chiveland

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary
715 East 8th Street
Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021110	3293673	12/12/2016 7:34 am	12/15/2016 8:12 am	Main Floor Room 19	1.2
2021111	3293671	12/12/2016 7:32 am	12/15/2016 8:11 am	Main Floor Room 20	1.0
2021112	3293682	12/12/2016 7:31 am	12/15/2016 8:09 am	Main Floor Room 21	1.7
2021113	3293670	12/12/2016 7:29 am	12/15/2016 8:08 am	Main Floor Room 22	2.4
2021114	3293677	12/12/2016 7:26 am	12/15/2016 7:34 am	Main Floor Room 24	1.2
2021115	3293678	12/12/2016 7:24 am	12/15/2016 7:39 am	Main Floor Room 26	0.8
2021116	3293689	12/12/2016 7:22 am	12/15/2016 7:40 am	Main Floor Room 27	0.8
2021117	3293665	12/12/2016 7:20 am	12/15/2016 7:41 am	Main Floor Room 25	0.7
2021118	3293694	12/12/2016 7:18 am	12/15/2016 7:36 am	Main Floor Custodian's Office	1.3
2021119	3293691	12/12/2016 7:17 am	12/15/2016 7:37 am	Main Floor Custodian's Office Duplicate	1.4

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chueland

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary 715 East 8th Street Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021120	3293674	12/12/2016 7:15 am	12/15/2016 7:32 am	Main Floor Room 23	0.9
2021121	3293662	12/12/2016 7:57 am	12/15/2016 7:45 am	Main Floor Cafeteria	1.1
2021122	3293683	12/12/2016 7:58 am	12/15/2016 7:46 am	Main Floor Cafeteria	1.3
2021123	3293664	12/12/2016 8:02 am	12/15/2016 7:48 am	Main Floor Cafeteria Room 119	1.9
2021124	3293676	12/12/2016 8:03 am	12/15/2016 7:49 am	Main Floor Music Room	1.2
2021125	3293660	12/12/2016 8:09 am	12/15/2016 7:52 am	Main Floor Portable WESD N Side	< 0.4
2021126	3293659	12/12/2016 8:10 am	12/15/2016 7:53 am	Main Floor Portable WESD N Side Duplicate	< 0.4
2021127	3293688	12/12/2016 8:11 am	12/15/2016 7:54 am	Main Floor Portable WESD S Side	< 0.4
2021128	3293672	12/12/2016 8:17 am	12/15/2016 7:57 am	Main Floor Portable COLA 1	< 0.4
2021129	3293661	12/12/2016 8:18 am	12/15/2016 7:58 am	Main Floor Portable COLA 2	< 0.4

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michal Chueland

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Edwards Elementary 715 East 8th Street Newberg OR 97132

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
2021130	3293684	12/12/2016 8:19 am	12/15/2016 8:01 am	Main Floor Portable COLA 3	< 0.4
2021131	3293687	12/12/2016 8:20 am	12/15/2016 8:00 am	Main Floor Portable COLA 4	< 0.4
2021132	3293685	12/12/2016 8:24 am	12/15/2016 8:00 am	Main Floor Portable COLA 4 Field Blank	< 0.4

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns and Scott Woods

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michel Cliveland

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Laboratory Report for:

Property Tested:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Aspen Village Unit 12
1220 Northwest Aspen Boulevard
Mollala OR 97206

Log Number	Device Number	Test Exposur	e Duration:	Area Tested	Result (pCi/L)
2021133	3275461	12/12/2016 10:40 am	12/14/2016 1:10 pm	Bldg. C Unit 12 Basement Family Room	16.4
2021134	3275460	12/12/2016 10:40 am	12/14/2016 1:10 pm	Bldg. C Unit 12 Main Living Room	18.2

Comment: Confidential: Results sent to Cascade Environmental only

Test Performed By: Bob Burns

Distributed by: Cascade Environmental

Date Received: 12/19/2016 Date Logged: 12/19/2016 Date Analyzed: 12/20/2016 Date Reported: 12/20/2016

Report Reviewed By: Michael Chweland

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.





Radon Measurements Lab

Dr. James F. Burkhart 1420 Austin Bluffs Parkway Colorado Springs, CO 80918 719.255.3584

Date: 12/15/16

These are the results of the spiking that we performed on the device(s) listed below:

Device Serial	# Start Date	Start Time	Stop Date	Stop Time	Chamber Value
3275461	12/12/16	10:40 (MST)	12/14/16	13:10 (MST)	16.4 pCi/L
3275458	12/12/16	10:40 (MST)	12/14/16	13:10 (MST)	16.4 pCi/L
3275460	12/12/16	10:40 (MST)	12/14/16	13:10 (MST)	16.4 pCi/L

These devices were spiked in our chamber at an average relative humidity of 38.0 %. These devices were spiked in our chamber at a chamber temperature of 75.3° F. This chamber is at an elevation of approximately 6479 feet.

The additional information below is provided as a service for our customers who have furnished Radon Measurements Lab with the customer's measured values for the above devices. This equation calculates the difference between our chamber value and the customer's measured value and is called the percent error. It is calculated as follows:

> % Error = Measured Value - Chamber Value * 100 Chamber Value

Measured Value Chamber Value % Error of Each of Your Devices

Thank you for your patronage. If we can be of further help, please call us at (719) 255-3584.

Sincerely,

Dr. James F. Burkhart

AccuStal Accustar Labs Nectus 11 Awi Street Nectus WA 02053 888-480-8812 fax 508-533

Start test before expiration date on device or result will be invalid.

Radon in Air Test Data Sheet

Т		Г		Т	Т	T	Г		(0			(S
								Lab Use Only	Start Date: 12 12 16	Contact: 000	4346	Cascach	888-480-8 Send Written Report To:
								Device Number	E-Mail Address: DDD (C CA) COCCO (C C C C C C C C C C C C C C C C	SUND Tel:	12 21 July 21 11 12 12 12 12 12 12 12 12 12 12 12	CAVITONIA	888-480-8812 fax 508-533-8831 ort To:
	¥			5			Sec o	Building #	Stop Date: 12 15 16	45+64.645+SAS	272	Le La	o :
			*				A Hache	Unit #.	1.15.16	7579			
							red	Floor		Pe	Ωŧ	Sit Ad	Pr
								Name of Room		Person Conducting Test: _	City State Zip	Site Name Address The state of the state o	Project Number:
			-				5	Start Time	Start and S mu	1506 B	ubers,	TE. 80	`
	-							Stop Time	Start and Stop Times and Dates must be entered	5/30	029	- Sto	
								Lab Use	Dates		7/50	En	,

Edwards Elementary Radon 2016 715 E. 8th Street Newberg, Oregon 97132

	 	-		<u> </u>		<u> </u>			<u> </u>				_	
												Lab Use Only		
12	11	10	09	08	07	06	05	04	03	02	01	Sample #	-	
3293 653	3293 666	3275 57 2	3275 462	3275 456	3275 57 3	3275 463	3275 459	3275 514	3275 5//	3275 509	3275 510	Device#		
Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Floor		
Room 39	Room 40	Work Room	Work Room	Conference Room	Staff Room	Office 02, Principal	Office 02, Principal	Office 01	Health Room	Main Office	Main Office	Room	Start Date: 12・12・16	
0732	0730		0716		6723	0720	0720	7	07/6	j	2140	Start Time	16	
297	1120	1570	0739	0738	7840	0755	0735		073/)	0730	Stop Time		Tester Nam
shed by Track	Shell	Duplicate	67 Str. P		L9912 L9	Duplicate	siel	Shif	Desk	Blank	Barl-160+	Comments	Stop Date: 1), 15-16	Tester Name: 1306 Burns/Scott Woods
												Lab Use		Huod
											v			8

Page ____ of ____

Edwards Elementary Radon 2016 715 E. 8th Street Newberg, Oregon 97132

							£21								Lab Use Only
27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	Sample #
3293 644	3293 65-8	3293 643	3293 655	3293 64 9	3293 65	3293 667	3293	3293 647	3293 645	3293 Gt 654	3293 668	3293 656	3293 65°C	3293 652	Device #
Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Floor
Library	Library	Room 37	Room 35	Room 33	Room 31	Room 31	Student Store	Room 28	Room 29	Room 30	Room 32	Room 34	Room 36	Room 38	Room
2804	0803	0751	0757	0755	0755	0753		0748	04/6075	0744	0742	2746	6738	0735	Start Time
6804	5080	1080	07570800	0758	0757	0757		0755	0453	0751	0750	0748	0746	1448	Stop Time
Shelt 67 66565	Librover 2,000 SFICSK	Shely knixal	703(25		Duplicate	PelC	open to Hallwa	Corre Jak	Tilm Car which	Tech 57	Held by Pool don		Filling Cabind	Sink Contr	Comments
							6				in				Lab Use



Edwards Elementary Radon 2016 715 E. 8th Street Newberg, Oregon 97132

	T		T	T	T-	T		*	Т	*		-			
															Only
42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	Sample #
3293 673	3293 681	3293 669	3293 680	3293 675	3293 692	3293 679	3293 693	3293663	3293 686	3293 690	3293 641	3293 640	3293642	3293657	Device #
Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Main	Floor
Room 19	Room 18	Room 17	Gym Office	Gymnasium	Gymnasium	Gymnasium	Room 16	Room 15	Room 14	Room 14	Room 13	Room 12	Room 11	Library Office	Room
07:34	07:37	07:38	07:43	(4:10	67:42	07:45	67:47	84:10	07:50	07:53		6814	1180	0805	Start Time
21:80	08:24	58180	8:80	21:80	08:14	81:80	08:17	08:19	١	08:2)	6812	0810	0809	7080	Start Time Stop Time
Top of Tall shelf	Shefby Tonder-desk	shafby Tercher Nesk	By Phone	Behind MIXEVORT	Behind Steve o	Blenchover 4,000 SF,	Top file cabinet	cabited by teacher	Blank	Top of light speed					Comments
										-					Lab Use



Edwards Elementary Radon 2016 715 E. 8th Street Newberg, Oregon 97132

	07:49 Apper Platform	64:40	50:20	Music Room	Main	3293 676	56		
	Shef by door	84:40	20:80	Cafeteria Room 119	Main	3293 664	55		\mathbf{I}
	Blue CIRD	07:46	67:58	Cafeteria	Main	3293 683	54		
	cabinet by door Over 2,000 SF	24:10	07:57	Cafeteria	Main	3293 662	53		
	on double file	07:32	67:15	Room 23	Main	3293 67 4	52		1
	Duplicate	07:37	07:17	Custodian's Office	Main	3293 691	51		T
		07:36	81:70	Custodian's Office	Main	3293 694	50		T
	By Ellow desk	(4:10	07:20	Room 25	Main	3293 665	49		T
×	07:40 File Cabinet Teaching	07:40	07:22	Room 27	Main	3293 689	48		
	Shelf by Teachers down	67:39	07:29	Room 26	Main	3293 678	47		1
	By Skull Bone	07:34	07:26	Room 24	Main	3293 677	46		T
	File Cabinet	89:80	07:29	Room 22	Main	3293 670	45		T
	Cabinet by hoor	08:09	07:31	Room 21	Main	3293 682	44		T
	File CabineT	08:11	07:32	Room 20	Main	3293 67/	43		T
Lab Use	Comments	Stop Time	Start Time	Room	Floor	Device #	Sample #	Lab Use Only	



Edwards Elementary Radon 2016 715 E. 8th Street Newberg, Oregon 97132

								Lab Use Only
64	63	62	61	60	59	58	57	Sample #
3293 685	3293 687	3293684	3293 661	3293 672	3293 688	3293 659	3293 660	Device #
Main	Main	Main	Main	Main	Main	Main	Main	Floor
Col A 4	Portable Col.A 4	Portable ColA#3	Portable COLAA	Portable Col A	Portable WESD 5 side	WESD Sile	WESD N sik	Room
08:24	08:30	68:19	68:18	08:17	(1:80	08:10	08:09	Start Time Stop Time
1	00:80	08:0)	07:58	75:70	45:40	07:53	07:52	
Blank	Shelf by 5151	tall Backshot		Bookshulf	top of speck	Duplicate	Shelf Shelf	Comments
								Lab Use

AccuStal Accustar Labs Medway MA 02053 888-480-8812 fax 508-533-8831

Start test before expiration date on device or result will be invalid.

Radon in Air Test Data Sheet

							 Ø			
							3		Lab Use Only	Send Written Report To: (AS(AA) 4346 4346 Contact: Contact: E-Mail Address: Bobbe Start Date: (A) (A) (A) (A) (A) (A) (A) (A
,						5	3275460	1945485	Device Number	
							C .	C	# Building	AS Tel: SES 984 9757 CASCACHINE ITO 10 11 OF 9718 OF 9718 OF 9757 AS Tel: SES 984 9757
	200		7				20	12	Unit #	757
			W 2 10	-	=	1 <u>4</u> 200	 Main	Tesperan	Floor	Pe Cit Ad
		÷				G.	Living Room	Femily Roon	Name of Room	Project Number: Site Name Address City State Zip Person Conducting Test:
			P			-	1040	1040	Start Time	Mellala, Start and s
							1310	1310	Stop Time	Williage Unit O Nim Aspen Direct Cala, BR 9720 Gob Brins Start and Stop Times and Dates must be entered
	2			9					Lab Use	Aspen Did. Aspen Did. R 97206 Times and Dates be entered

APPENDIX B SITE PLAN

