



Cascade Environmental LLC

4346 NE 73rd Avenue
Portland, OR 97218

Phone 503 984 9737

www.cascadenviro.com

March 18, 2021

Mr. Larry Hampton
Newberg School District 29J
703 South Blaine
Newberg, OR 97132

**Re: Radon Testing & Analysis Report
Newberg School District Administration Building
714 East 6th Street
Newberg, Oregon 97132
Cascade Environmental Project No. 05062020-01**

Dear Mr. Hampton:

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 fifteen rooms were tested from May 06, 2020 through May 8, 2020 and one room was tested from May 26, 2020 through May 28, 2020. Sampling was conducted by Mr. Robert Burns, Industrial Hygienist with Cascade Environmental and Mr. Larry Hampton, District Risk Management Supervisor with Newberg School District. In addition, two duplicate samples, one blank sample and one spike sample 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 twenty canisters (including duplicates, blanks and spikes) 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 the Kansas State University Radon Chamber, NRPP Certification ID Number SC-1006, 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 Newberg School District Administration Building 714 East 6th Street Newberg, Oregon 97132 Radon Survey Results 2020			
Sampler Number	Location	Floor	Results (pCi/L)
01	Basement 106	Basement	1.9
02	Basement 106 (Duplicate)	Basement	2.0
03	Basement 106 (Blank)	Basement	<0.4
04	Basement 107	Basement	1.8
05	Basement 112	Basement	1.4
06	Basement 113	Basement	1.5
07	Basement 115	Basement	1.5
08	Basement 116	Basement	1.7
09	Basement 117	Basement	2.1
10	Basement 103	Basement	1.6
11	Basement 101	Basement	2.0
12	Basement 102	Basement	2.0
13	Basement 104	Basement	0.7
14	Basement 105	Basement	0.7
15	1st Floor Reception	Main	0.8
16	1st Floor Break Room	Main	0.7
17	1st Floor Conference Rm 1	Main	1.0
18	1st Floor Office 1	Main	0.8
19	1st Floor Office 1 (Duplicate)	Main	0.9

Table 2 Newberg School District Administration Building 714 East 6th Street Newberg, Oregon 97132 Spike Results		
Device Number	Spike Value (pCi/L) (Kansas State University)	Results (pCi/L) (AccuStar Labs)
4435680	23.9	24.3

CONCLUSION

The short-term radon sample results for the Newberg School District Administration Building, 714 East 6th Street, 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

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Cascade Environmental
4346 Northeast 73rd Avenue
Portland OR 97218

Property Tested:

Newberg S.D. Administration Building
714 East 6th Street
Newberg OR 97132

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2683527	4442790	05/06/2020 8:57 am	05/08/2020 10:13 am	Basement 106	1.9
2683528	4442787	05/06/2020 8:57 am	05/08/2020 10:13 am	Basement 106 Duplicate	2.0
2683529	4442784	05/06/2020 8:57 am	05/08/2020 10:13 am	Basement 106 Field Blank	< 0.4
2683530	4442779	05/06/2020 8:58 am	05/08/2020 10:14 am	Basement 107	1.8
2683531	4442785	05/06/2020 9:00 am	05/08/2020 10:14 am	Basement 112	1.4
2683532	4442777	05/06/2020 9:00 am	05/08/2020 10:15 am	Basement 113	1.5
2683533	4442778	05/06/2020 9:01 am	05/08/2020 10:15 am	Basement 115	1.5
2683534	4442788	05/06/2020 9:02 am	05/08/2020 10:16 am	Basement 116	Invalid
2683535	4442781	05/06/2020 9:03 am	05/08/2020 10:16 am	Basement 117	2.1
2683536	4442786	05/06/2020 9:04 am	05/08/2020 10:17 am	Basement 103	1.6
2683537	4442783	05/06/2020 9:04 am	05/08/2020 10:17 am	Basement 101	2.0

Comment: Unable to report a result for 4442788. Device was not properly sealed. Confidential: Release results to client only. Cascade Environmental was e-mailed a copy of this report.

Test Performed By: Larry Hampton and Robert Burns

Distributed by: Cascade Environmental

Date Received: 05/11/2020 Date Logged: 05/11/2020 Date Analyzed: 05/12/2020 Date Reported: 05/12/2020

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Newberg S.D. Administration Building
714 East 6th Street
Newberg OR 97132

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2683538	4442789	05/06/2020 9:05 am 05/08/2020 10:17 am	Basement 102	2.0
2683539	4442782	05/06/2020 9:06 am 05/08/2020 10:18 am	Basement 104	0.7
2683540	4442791	05/06/2020 9:07 am 05/08/2020 10:18 am	Basement 105	0.7
2683541	4442776	05/06/2020 8:58 am 05/08/2020 10:14 am	First Floor Reception	0.8
2683542	4442772	05/06/2020 9:01 am 05/08/2020 10:15 am	First Floor Break Room	0.7
2683543	4442771	05/06/2020 9:03 am 05/08/2020 10:16 am	First Floor Conference Room 1	1.0
2683544	4442780	05/06/2020 9:02 am 05/08/2020 10:15 am	First Floor Office 1	0.8
2683545	4442773	05/06/2020 9:02 am 05/08/2020 10:15 am	First Floor Office 1 Duplicate	0.9

Comment: Unable to report a result for 4442788. Device was not properly sealed. Confidential: Release results to client only. Cascade Environmental was e-mailed a copy of this report.

Test Performed By: Larry Hampton and Robert Burns

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Date Received: 05/11/2020 Date Logged: 05/11/2020 Date Analyzed: 05/12/2020 Date Reported: 05/12/2020

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested:

Robert Burns
4346 Northeast 73rd Avenue
Portland OR 97218


Newberg S.D. Admin Retest
714 East 6th Street
Newberg OR 97132

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2696102	4447597	05/26/2020 1:58 pm 05/28/2020 2:35 pm	Bldg. Admin Basement Room 116	1.7

Comment: Confidential: Release results to client only. Cascade Environmental was e-mailed a copy of this report.

Distributed by: Cascade Environmental

Date Received: 06/02/2020 Date Logged: 06/02/2020 Date Analyzed: 06/03/2020 Date Reported: 06/03/2020

Report Reviewed By: 

Report Approved By: 

Disclaimer:

Shawn Price, Director of Laboratory Operations, 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.

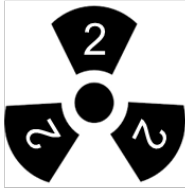
This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". 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.

Start Date: 5/6/2020 End Date: 5/8/2020

Administration Building
 714 E. 6th Street
 Newberg, Oregon 97132
 Radon Testing 2020

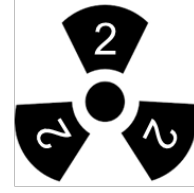
Tester Name(s): Larry Hampton

Lab Use	Sample #	Sample Order #	Device #	Room	Start Time	Stop Time	Comments	Lab Use
	1	1	44427 90	Basement 106	0857	1013		
		2	44427 87	Basement 106	0857	1013	Duplicate	
		3	44427 84	Basement 106	0857	1013	Blank	
		4	44427 79	Basement 107	0858	1014		
		5	44427 85	Basement 112	0900	1014		
		6	44427 77	Basement 113	0900	1015		
		7	44427 78	Basement 115	0901	1015		
		8	44427 88	Basement 116	0902	1016		
		9	44427 81	Basement 117	0903	1016		
		10	44427 86	Basement 103	0904	1017		
		11	44427 83	Basement 101	0904	1017		
		12	44427 89	Basement 102	0905	1017		
		13	44427 82	Basement 104	0906	1018		
		14	44427 91	Basement 105	0907	1018		



Radon Chamber

Kansas State University



KSU Radon Chamber

NRPP Certification ID Number SC-1006



Date: 4/22/2020

Robert Burns
 Cascade Environmental LLC
 4346 NE 73rd Ave
 Portland OR 97218
bob@cascadenviro.com
 503.984.9737

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 *
4435675	4/20/2020	0915	4/22/2020	10:15	23.9
4435679	4/20/2020	0915	4/22/2020	10:15	23.9
4435678	4/20/2020	0915	4/22/2020	10:15	23.9
4435674	4/20/2020	0915	4/22/2020	10:15	23.9
4435676	4/20/2020	0915	4/22/2020	10:15	23.9
4435677	4/20/2020	0915	4/22/2020	10:15	23.9
4435680	4/20/2020	0915	4/22/2020	10:15	23.9

These devices were spiked in our chamber at an average relative humidity of avg/rh 32.0 %.
These devices were spiked in our chamber at a chamber temperature of 73.5 ° f.
This chamber is at an elevation of approximately 1020 feet.

The additional information below is provided as a service for our customers who have furnished KSU Radon Chamber 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:

$$\% \text{ Error} = \frac{\text{Measured Value} - \text{Chamber Value}}{\text{Chamber Value}} * 100$$

Measured Value: pCi/L

Chamber Value: pCi/L

Error:

Thank you for your patronage. If we can be of further help, please email us at radonchamber@ksu.edu or call us at (785-532-4992).

Sincerely,

Bruce Snead

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # Admin Re-test

Robert Burns
4346 North East 73rd Avenue
Portland OR 97218

Newberg Admin Building
714 East 6th Street
Newberg OR 97132


Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2673306	4435680	04/20/2020 12:10 pm	04/22/2020 1:10 pm	Basement Room 112	24.3


Comment: Confidential: Release results to client only. Cascade Environmental was e-mailed a copy of this report.

Test Performed By: Robert Burns

Distributed by: Cascade Environmental

Date Received: 04/24/2020 Date Logged: 04/24/2020 Date Analyzed: 04/25/2020 Date Reported: 04/27/2020

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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