



Cascade Environmental LLC

4346 NE 73rd Avenue
Portland, OR 97218

Phone 503 984 9737

www.cascadenviro.com

June 11, 2018

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

**Re: Radon Testing & Analysis Report
Joan Austin Elementary
2200 N. Center Street
Newberg, Oregon 97132
Cascade Environmental Project No. 02052018-01**

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 thirty rooms were tested from February 5, 2018 through February 8, 2018 (Two samples in the Custodial Office, Sample #s 40 and 41 were compromised during the initial sampling and were resampled from February 8, 2018 through February 12, 2018). 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, three duplicate samples, two 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 43 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 Bowser Morner in Dayton, Ohio 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 Joan Austin Elementary 2200 N. Center Street Newberg, Oregon 97132 Radon Survey Results 2018			
Sampler Number	Location	Floor	Results (pCi/L)
01	Office	Main	<0.4
02	Office (Duplicate)	Main	0.6
03	Conference Room	Main	0.6
04	Principal's Office	Main	0.5
05	Principal's Office (Blank)	Main	<0.4
06	PTO	Main	0.6
07	Work Room	Main	0.5
08	Health Room	Main	0.5
09	Staff Room	Main	0.4
10	Staff Room (Duplicate)	Main	0.7
11	A101	Main	0.4
12	A102	Main	0.5
13	A103	Main	0.5
14	A104	Main	<0.4
15	A105	Main	<0.4
16	Library	Main	<0.4
17	Library	Main	0.6
18	Computer Lab	Main	<0.4
19	LRC Office	Main	0.5
20	Counselor Office	Main	0.5
21	Speech Room	Main	0.5
22	B105	Main	0.4



Table 1 Joan Austin Elementary 2200 N. Center Street Newberg, Oregon 97132 Radon Survey Results 2018			
Sampler Number	Location	Floor	Results (pCi/L)
23	B104	Main	0.5
24	B103	Main	0.4
25	B102	Main	0.7
26	B101	Main	<0.4
27	LRC	Main	<0.4
28	LRC Office	Main	0.5
29	LRC Office (Blank)	Main	<0.4
30	Music	Main	<0.4
31	Gym	Main	0.5
32	Gym	Main	0.6
33	Gym	Main	0.8
34	Gym	Main	0.5
35	Gym Office	Main	0.7
36	Cafeteria	Main	0.4
37	Cafeteria	Main	0.5
38	Cafeteria	Main	0.5
39	Cafeteria Office	Main	0.7
40	Custodial Office	Main	0.4
41	Custodial Office (Duplicate)	Main	0.6

Table 2 Joan Austin Elementary 203 Foothills Drive Newberg, Oregon 97132 Spike Results		
Device Number	Spike Value (pCi/L) (Bowser Morner)	Results (pCi/L) (AccuStar Labs)
3674734	26.8	25.9
3674771	26.8	25

CONCLUSION

The short-term radon sample results for Joan Austin Elementary School, located at 203 Foothills Drive 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

A handwritten signature in black ink, appearing to read "Robert Burns".

Robert Burns
Principal

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

NELAC NY 11769
NRPP 101193 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 North East 73rd Avenue
Portland OR 97218

Joan Austin Elementary School
2200 N Center Street
Newberg OR 97132


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
2237628	3674781	02/23/2018 8:07 am - 02/26/2018 8:07 am	Main Floor Room 4A	25.9
2237629	3674776	02/23/2018 8:07 am - 02/26/2018 8:07 am	Main Floor Room 5C	25


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

Test Performed By: Bob Burns

Distributed by: Cascade Environmental

Date Received: 02/28/2018 Date Logged: 02/28/2018 Date Analyzed: 03/01/2018 Date Reported: 03/01/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

The uncertainty of this radon measurement is $\sim\pm 10\%$. 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.

APPENDIX A

LABORATORY RESULTS &
CHAIN OF CUSTODY DOCUMENTATION

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Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result (pCi/L)
2229675	3674767	02/05/2018 7:14 am	02/08/2018 7:02 am	Main Floor Office	< 0.4
2229676	3674766	02/05/2018 7:14 am	02/08/2018 7:02 am	Main Floor Office Duplicate	0.6
2229677	3674760	02/05/2018 7:15 am	02/08/2018 7:03 am	Main Floor Conference Room	0.6
2229678	3674764	02/05/2018 7:16 am	02/08/2018 7:04 am	Main Floor Principals Office	0.5
2229679	3674751	02/05/2018 7:16 am	02/08/2018 7:04 am	Main Floor Principals Office Blank	< 0.4
2229680	3674762	02/05/2018 7:17 am	02/08/2018 7:05 am	Main Floor PTO	0.6
2229681	3674770	02/05/2018 7:18 am	02/08/2018 7:05 am	Main Floor Work Room	0.5
2229682	3674769	02/05/2018 7:19 am	02/08/2018 7:06 am	Main Floor Health Room	0.5
2229683	3674765	02/05/2018 7:20 am	02/08/2018 7:07 am	Main Floor Staff Room	0.4
2229684	3674754	02/05/2018 7:20 am	02/08/2018 7:07 am	Main Floor Staff Room Duplicate	0.7

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

Test Performed By: Robert B.

Distributed by: Cascade Environmental

Date Received: 02/12/2018 Date Logged: 02/12/2018 Date Analyzed: 02/13/2018 Date Reported: 02/13/2018

Report Reviewed By: 

Report Approved By: 

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Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
2229705	3674780	02/05/2018 7:40 am	02/08/2018 7:19 am	Main Floor Gym	0.5
2229706	3674774	02/05/2018 7:35 am	02/08/2018 7:18 am	Main Floor Gym	0.6
2229707	3674788	02/05/2018 7:33 am	02/08/2018 7:17 am	Main Floor Gym	0.8
2229708	3674775	02/05/2018 7:31 am	02/08/2018 7:16 am	Main Floor Gym	0.5
2229709	3674786	02/05/2018 7:29 am	02/08/2018 7:15 am	Main Floor Gym Office	0.7
2229710	3674783	02/05/2018 7:25 am	02/08/2018 7:14 am	Main Floor Cafeteria	0.4
2229711	3674739	02/05/2018 7:23 am	02/08/2018 7:12 am	Main Floor Cafeteria	0.5
2229712	3674784	02/05/2018 7:22 am	02/08/2018 7:11 am	Main Floor Cafeteria	0.5
2229713	3674778	02/05/2018 7:20 am	02/08/2018 7:10 am	Main Floor Cafeteria Office	0.7

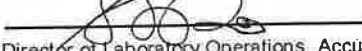
Comment: Confidential: Release results to client only. Cascade Environmental was e-mailed a copy of this report.

Test Performed By: Robert B.

Distributed by: Cascade Environmental

Date Received: 02/12/2018 Date Logged: 02/12/2018 Date Analyzed: 02/13/2018 Date Reported: 02/13/2018

Report Reviewed By: 

Report Approved By: 

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Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
2229695	3674747	02/05/2018 7:34 am 02/08/2018 7:25 am	Main Floor Speech Room	0.5
2229696	3674757	02/05/2018 7:29 am 02/08/2018 7:17 am	Main Floor Room B105	0.4
2229697	3674746	02/05/2018 7:30 am 02/08/2018 7:18 am	Main Floor Room B104	0.5
2229698	3674759	02/05/2018 7:31 am 02/08/2018 7:19 am	Main Floor Room B103	0.4
2229699	3674756	02/05/2018 7:32 am 02/08/2018 7:20 am	Main Floor Room B102	0.7
2229700	3674733	02/05/2018 7:33 am 02/08/2018 7:21 am	Main Floor Room B101	< 0.4
2229701	3674749	02/05/2018 7:36 am 02/08/2018 7:23 am	Main Floor LRC	< 0.4
2229702	3674745	02/05/2018 7:37 am 02/08/2018 7:24 am	Main Floor LRC Office	0.5
2229703	3674744	02/05/2018 7:37 am 02/08/2018 7:24 am	Main Floor LRC Office Blank	< 0.4
2229704	3674748	02/05/2018 7:39 am 02/08/2018 7:26 am	Main Floor Music	< 0.4

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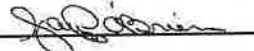
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
2229685	3674729	02/05/2018 7:21 am	02/08/2018 7:08 am	Main Floor Room A101	0.4
2229686	3674758	02/05/2018 7:22 am	02/08/2018 7:09 am	Main Floor Room A102	0.5
2229687	3674753	02/05/2018 7:23 am	02/08/2018 7:10 am	Main Floor Room A103	0.5
2229688	3674763	02/05/2018 7:24 am	02/08/2018 7:11 am	Main Floor Room A104	< 0.4
2229689	3674752	02/05/2018 7:25 am	02/08/2018 7:12 am	Main Floor Room A105	< 0.4
2229690	3674761	02/05/2018 7:27 am	02/08/2018 7:14 am	Main Floor Library	< 0.4
2229691	3674768	02/05/2018 7:27 am	02/08/2018 7:14 am	Main Floor Library	0.6
2229692	3674750	02/05/2018 7:26 am	02/08/2018 7:15 am	Main Floor Computer Lab	< 0.4
2229693	3674727	02/05/2018 7:38 am	02/08/2018 7:23 am	Main Floor LRC Office Left	0.5
2229694	3674755	02/05/2018 7:28 am	02/08/2018 7:16 am	Main Floor Counselor Office	0.5

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

Test Performed By: Robert B.

Distributed by: Cascade Environmental

Date Received: 02/12/2018 Date Logged: 02/12/2018 Date Analyzed: 02/13/2018 Date Reported: 02/13/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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Joan Austin Elementary
 2200 N. Center Street
 Newberg, Oregon 97132
 Radon Testing 2018

2/12/2018
 EXP 1/31/2021

50 - 1
 Cascade Environmental
 2229675 3674767 LSB

FEDEX
 2/12/18 *RR* INITIALS

Tester Name(s): Robert Buzick

Start Date: 2-5-18 Stop Date: 2-8-18

Lab Use Only	Sample #	Device #	Floor	Room	Start Time	Stop Time	Comments	Lab Use
2229675	1	3674 767	Main	Office	0714	0702	right - under cupboards	0.4
2229676	2	3674 766	Main	Office	0714	0702	Duplicate	0.6
2229677	3	3674 760	Main	Conference Room	0715	0703	by door	0.6
2229678	4	3674 764	Main	Principals Office	0716	0704	bookshelf	0.5
2229679	5	3674 751	Main	Principals Office	0716	0704	Blank	0.4
2229680	6	3674 762	Main	PTO	0717	0705	file cabinet	0.6
2229681	7	3674 770	Main	Work Room	0718	0705	counter	0.5
2229682	8	3674 769	Main	Health Room	0719	0706	straight ahead counter	0.5
2229683	9	3674 765	Main	Staff Room	0720	0707	counter above dishwasher	0.4
2229684	10	3674 754	Main	Staff Room	0720	0707	Duplicate	0.7
2229685	11	3674 729	Main	A101	0721	0708	top of paper towel disp	0.4
2229686	12	3674 758	Main	A102	0722	0709	shelf above sink	0.5

Lab Use Only	Sample #	Device #	Floor	Room	Start Time	Stop Time	Comments	Lab Use
2229687	113	3674 753	Main	A103	0723	0710	shelb above paper towels	0.5
2229688	214	3674 763	Main	A104	0724	0711	file cabinet	0.4
2229689	315	3674 752	Main	A105	0725	0712	file cabinet	0.4
2229690	416	3674 761	Main	Library	0727	0714	file cabinet Between 2000 and 4000 SF	0.4
2229691	517	3674 768	Main	Library	0727	0714	east bookcases	0.6
2229692	618	3674 750	Main	Computer Lab	0726	0715	table under screen	0.4
		3674 Not used for	Main					
2229693	719	3674 727	Main	LRC Office 6ft	0738	0723	shelf	0.5
		3674 Not used for	Main					
		3674 Not used for	Main					
		3674 Not used for	Main					
2229694	820	3674 755	Main	Counselor Office	0728	0716	file cabinet	0.5
2229695	921	3674 747	Main	Speech Room	0734	0725 / 0717	paper towel disp right desk	0.5
2229696	1022	3674 757	Main	B105	0729	0718	paper towel disp	0.4
2229697	1123	3674 746	Main	B104	0730	0718	file cabinet paper towel disp	0.5

Lab Use Only	Sample #	Device #	Floor	Room	Start Time	Stop Time	Comments	Lab Use
2229698	24	3674 759	Main	B103	0731	0719	File Cabinet	0.4
2229699	25	3674 756	Main	B102	0732	0720	Paper Towel Disp	0.7
2229700	26	3674 753	Main	B101	0733	0721	by sink Paper Towel	0.4
2229701	27	3674 749	Main	LRC	0736	0723	by the phone sink	0.4
2229702	28	3674 745	Main	LRC Office	0737	0724	by the phone	0.5
2229703	29	3674 744	Main	LRC Office	0737	0724	Blank	0.4
2229704	30	3674 748	Main	Music	0739	0726	counter by desk	0.4
2229705	31	3674 780	Main	Gym	0740	0719	SW Between 6000 & 8000 SF	0.5
2229706	32	3674 774	Main	Gym	0735	0718	NW	0.6
2229707	33	3674 782	Main	Gym	0733	0717	NE corner	0.8
2229708	34	3674 775	Main	Gym	0731	0716	SE corner	0.5
2229709	35	3674 786	Main	Gym Office	0729	0715	Desk	0.7
2229710	36	3674 783	Main	Cafeteria	0725	0714	Between 4600 & 6000 SF	0.4
2229711	37	3674 739	Main	Cafeteria	0723	0712	Sinks counter	0.5
2229712	38	3674 784	Main	Cafeteria	0722	0711	on cooler	0.5

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Lab Use Only	Sample #	Device #	Floor	Room	Start Time	Stop Time	Comments	Lab Use
2229713	39	3674 778	Main	Cafeteria Office	0720	0710	windows shelf	0.7
		3674 777 not used	Main	Custodial Office	0718	—	NS + Subm; Hf	
		3674 757 not used	Main	Custodial Office	0718	—	Duplicate, rd compar, rd	

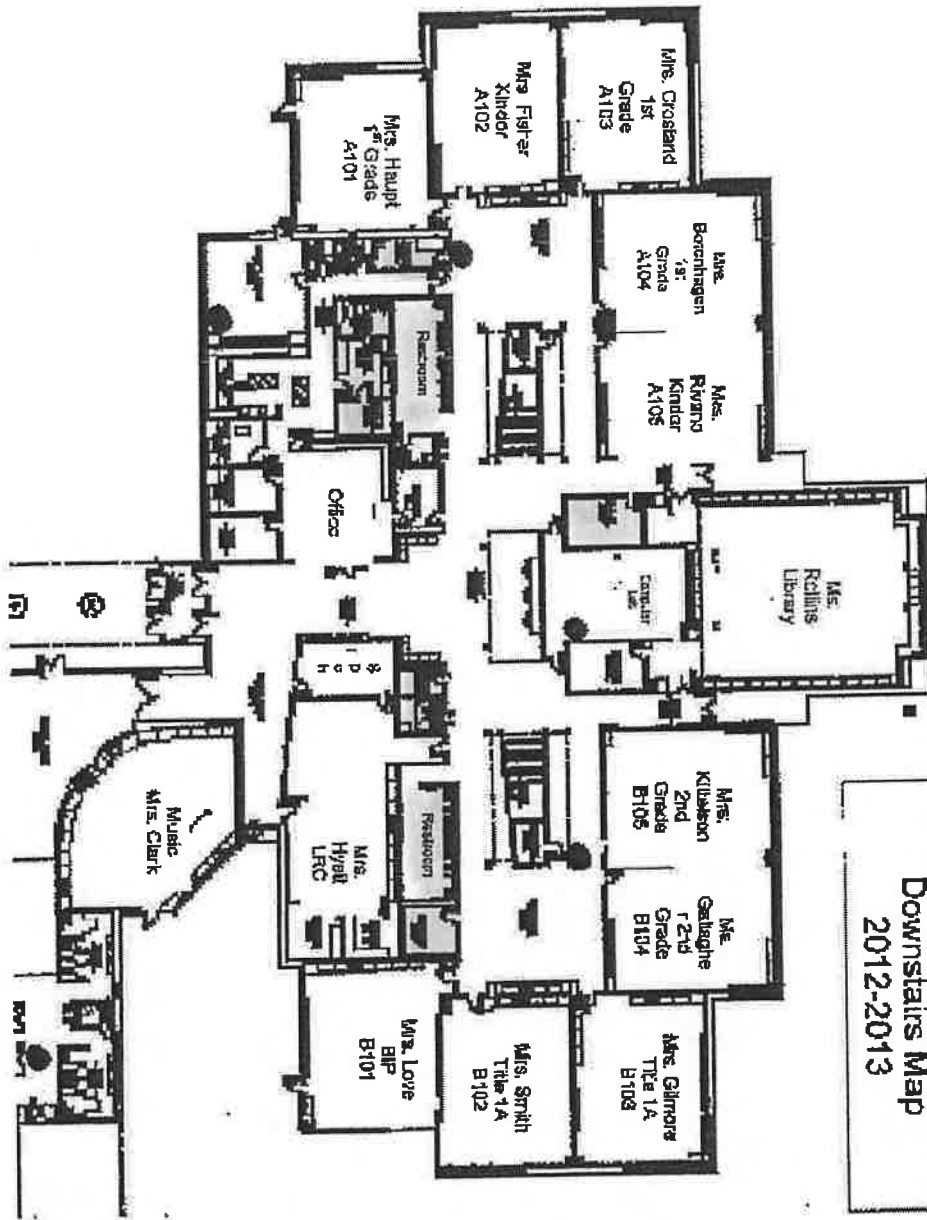
APPENDIX B

SITE PLAN

BUILDING MAP- PEOPLE

Rooms, Phone Extensions, Students (each level); • Teacher Names; • # of People Per Room ;
 • Lockdown and Lockout Details; • Evacuation Routes

• Fire Extinguisher



Joan Austin Elementary
 Downstairs Map
 2012-2013

JOAN AUSTIN

CRATER ELEMENTARY + AUSTIN = Similar plan
Gym & Cafeteria
Senior Center (shaded area)

