



Cascade Radon, Inc.  
Testing, Mitigation,  
Systems Design  
CCB 180537 / CASCARI927C1  
Fed ID 26-1809992

12839 NE Airport Way Bldg. 9  
Portland, Oregon 97230  
Phone: (503) 421-4813  
Fax: (503) 281-6170  
Office@CascadeRadon.com

# **Roseway Heights Elementary**

**(C-65492)**

**7334 NE Siskiyou Street, Portland, OR 97213**

**May 24, 2018**



Cascade Radon, Inc.  
Testing, Mitigation,  
Systems Design  
CCB 180537 / CASCARI927C1  
Fed ID 26-1809992

12839 NE Airport Way Bldg. 9  
Portland, Oregon 97230  
Phone: (503) 421-4813  
Fax: (503) 281-6170  
Office@CascadeRadon.com

## **Purpose**

**Initial testing was performed throughout the school on March 28, 2016 to March 31, 2016 by PBS Engineering and Environmental Inc. Testing indicated 7.9 pCi/L in the boiler room of the building. PBS performed additional testing starting in October 2016 to May 2017 as a confirmation long-term test to determine if mitigation was needed. The result of this 7 month test was 4.0 pCi/L in the boiler room. Cascade Radon was hired to diagnose boiler room and develop a mitigation strategy to reduce the radon levels.**

**The installation of a sub-slab depressurization system was used to reduce the radon below the EPA action level of 4 pCi/L. See attached pages for a description of the system components and post-mitigation testing.**



**The suction point is located on the western wall of the boiler room. Schedule 80 vent piping was used in the boiler room to protect against accidental impacts. The vent piping exits the southern exterior wall and then to fan location on the roof. The system includes a manometer (pressure gauge), which is a simple means of seeing the system is working mechanically. A manometer also shows how much negative pressure (depressurization) the system is creating. It is understood such a pressure gauge DOES NOT monitor radon levels.**



**Vent pipe routing to the southern exterior wall in the boiler room. Vent piping was transitioned back to schedule 40 piping when high enough and out of harms way.**



**Exterior vent pipe continues up the side of the building and over the parapet wall to the fan location on the roof. The vent pipe was shrouded to deter climbing.**



**This system required a Festa AMG Fury model fan, which is designed for the more porous rocky soil found beneath the concrete slab. If left to operate continuously the lifespan of this fan typically is 10 to 15 years.**

# Credentials

Cascade Radon, Inc.  
12839 NE Airport Way Bldg. 9  
Portland, OR 97230  
(503)421-4813  
office@cascaderadon.com  
CCB180537  
CASCARI977C1  
NEHA/NRPP# 104815RMT  
NRSB# 1G0008

Snyder Roofing of Oregon LLC  
12650 SW Hall Blvd.  
Tigard, OR 97223  
(503)620-5252  
Snyder-builds.com  
CCB135987

Christensen Electric, Inc.  
17201 NE Sacramento Street  
Portland, OR 97230  
(503)419-3300  
info@christenson.com  
CCB458

Accurate Concrete Cutting  
6816 NE 40th Ave.  
Vancouver, WA 98661  
lj@accurate-concrete-cut.com  
CCB191788  
W.A. Contr. License# ACCURCC153M2



**CASCADE RADON, INC.**

Testing, Mitigation,  
Systems Design  
CCB 180537 / CASCARI927C1

12839 NE Airport Way  
Portland, OR 97230  
Phone: (503) 421-4813  
Fax: (503) 281-6170  
[Office@CascadeRadon.com](mailto:Office@CascadeRadon.com)

May 24, 2018

C-65492

To: Portland Public Schools  
501 N. Dixon Street  
Portland, OR 97227

RE: Roseway Heights Elementary School  
7334 NE Siskiyou St.  
Portland, OR 97213

Effective: January 26, 2018

Cascade Radon, Inc. warrants that all work has been performed in a workmanlike manner and according to the best standard practices. All materials and equipment are new, unless otherwise specified, and of first quality.

Cascade Radon, Inc. guarantees that the installation will maintain average, long-term, indoor radon levels, based upon approved 9 month duration Alpha-Track testing at or below 4 pCi/L for a period of 10 years.

With the exception of the exhaust fan unit(s), Cascade Radon, Inc. warrants that all labor, work, materials and equipment will be free from faults in material or workmanship for period of ten (10) years from the date of substantial completion.

Includes 5-year manufactures replacement warranty on exhaust fan unit(s), beginning at time of initial activation, with any related work and materials provided at no cost to the Client.

All warranties and guarantees are transferable to future owners of the same property.

Warranty or service inquires, please call (503) 421-4813

Sincerely,  
Wade Gervais  
Division Manager  
Cascade Radon, Inc.





## TEST DETAILS:

Roseway Heights  
 7334 NE Siskiyou St  
 Portland, OR 97213  
 Multnomah

Portland Public Schools

**Test Start Date/Time:** Tuesday, January 16, 2018 // 2:46 PM

**Test End Date/Time:** Friday, January 19, 2018 // 12:02 PM

**Location of Instrument:** Boiler Room East Wall

**Notes:**

## TEST RESULTS:

**Average:** 1.9 pCi/L

**Test ID#** 80036



*Tamara C Linde*

1/26/18

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT



## INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
13				0.5	64	37	17
14				0.7	64	39	25
15				0.4	65	39	14
16				1.3	68	36	42
17				1.5	69	35	49
18				1.5	69	35	48
19				1.2	69	34	39
20				1.2	69	34	38
21				1.3	69	34	43
22				1.1	69	35	37
23				2.1	70	35	66
24				2.8	70	34	89
25				3.7	70	35	118
26				2.5	70	36	81
27				3.4	71	37	108
28				2.8	69	41	90
29				3.1	69	45	98
30				3.0	69	46	95
31				2.6	68	46	83
32				2.3	68	45	75
33				1.7	67	45	56
34				1.1	66	45	36
35				1.1	66	45	36
36				0.8	65	44	28
37				0.4	64	46	14
38				0.4	63	45	13
39				0.4	66	45	15
40				1.3	69	42	41
41				3.0	70	38	97
42				2.3	70	38	75
43				2.3	68	36	73
44				1.3	70	37	43
45				1.6	70	37	53
46				3.4	70	37	108
47				4.1	69	38	131
48				4.3	69	37	137
49				3.8	69	38	119
50				5.0	70	37	159
51				4.7	70	36	150
52				4.1	69	34	131
53				4.3	68	33	136
54				3.6	67	34	115
55				3.0	65	36	94
56				2.0	65	37	63
57				1.6	66	37	52
58				1.7	65	37	56
59				1.9	64	36	60
60				1.1	63	37	35
61				0.6	61	38	19
62				0.3	60	39	10
63				0.8	63	40	28
64				1.1	66	38	36
65				1.5	66	37	47
66				1.1	65	36	37
67				0.6	64	36	21
68				0.5	64	37	18
69				0.1	64	36	6

Tamara Linde  
Cascade Radon  
12839 NE Airport Way  
Portland, OR 97230  
Phone: 503-421-4813 Fax: 503-281-6170  
office@cascaderadon.com



---

**Minimum:** 0.1 pCi/L      **Maximum:** 5.0 pCi/L      **Average:** 1.9 pCi/L

Tamara C Linde      1/26/18  
Tamara Linde      Date  
Certification #:  
License 1:      CCB 180537/ CASCARI927C1  
License 2:      NRPP 108946RT, 108953RT



**CERTIFICATE OF CALIBRATION  
RadStar RS800 Continuous Monitor**

This instrument has been calibrated in accordance with the procedures set forth by the manufacturer.  
Please retain this certificate for your records

Cal Date: 5-5-17 Last Cal Date: \_\_\_\_\_ Next Cal Date: 5-5-18  
 Device Serial Number: 2368 Device Type: RS800  
 Device Status: Passed  Failed

NRPP Chamber#TC103	Radon Gas Concentration: <u>20.1 pCi/l</u>
Rad7 Serial Numbers: <u>0356 0352</u>	
Chamber Temperature: <u>70.6 °F</u>	Chamber Humidity: <u>48.1 %RH</u>
Start Chamber Exposure: <u>08/15/16 09:00</u>	Stop Chamber Exposure: <u>08/17/16 09:00</u>

Calibration Number (as found, if applicable) \_\_\_\_\_ *Calib#=(10240/(Hourly Counts/pCi/l))*  
 Calibration Number (Final) 327 Calibrated By: 

**RadonAway 3 Saber Way Ward Hill, Massachusetts 01835 978-521-3703**

This RadStar Continuous Radon Monitor has been calibrated by the Manufacturer using a standard operating procedure for the calibration of the RS800, TP010 Rev E. This procedure provides for the following performance checks:

- System Functional Checks
- Battery Check
- Back Ground Check in Nitrogen 0.0 pCi/l 6 cph
- Chamber Exposure in known Radon Gas Concentration
- Adjustment to Calibration Number, if necessary
- Adjustment to Background, if necessary
- Verification Chamber Exposure, if necessary

*(As Tested Background is Integrated into Instrument Calculation Program, Do Not Adjust Readings by Background)*

The manufacturer, RadonAway performs quarterly inter-comparisons with a Secondary Chamber

NRPP Device Code 476 Device group 18 USEPA Verified

Radon Measurement Specialist:

NRSB #6SS0002, NRPP #100842RT



*The RadStar RS800 is distributed by Accustar Labs 888-580-9596*