



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

# **Marysville Elementary School**

**(C-68606)**

**7733 SE Raymond St., Portland, OR 9706**

**March 6, 2020**



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

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**Office@CascadeRadon.com**

## **Purpose**

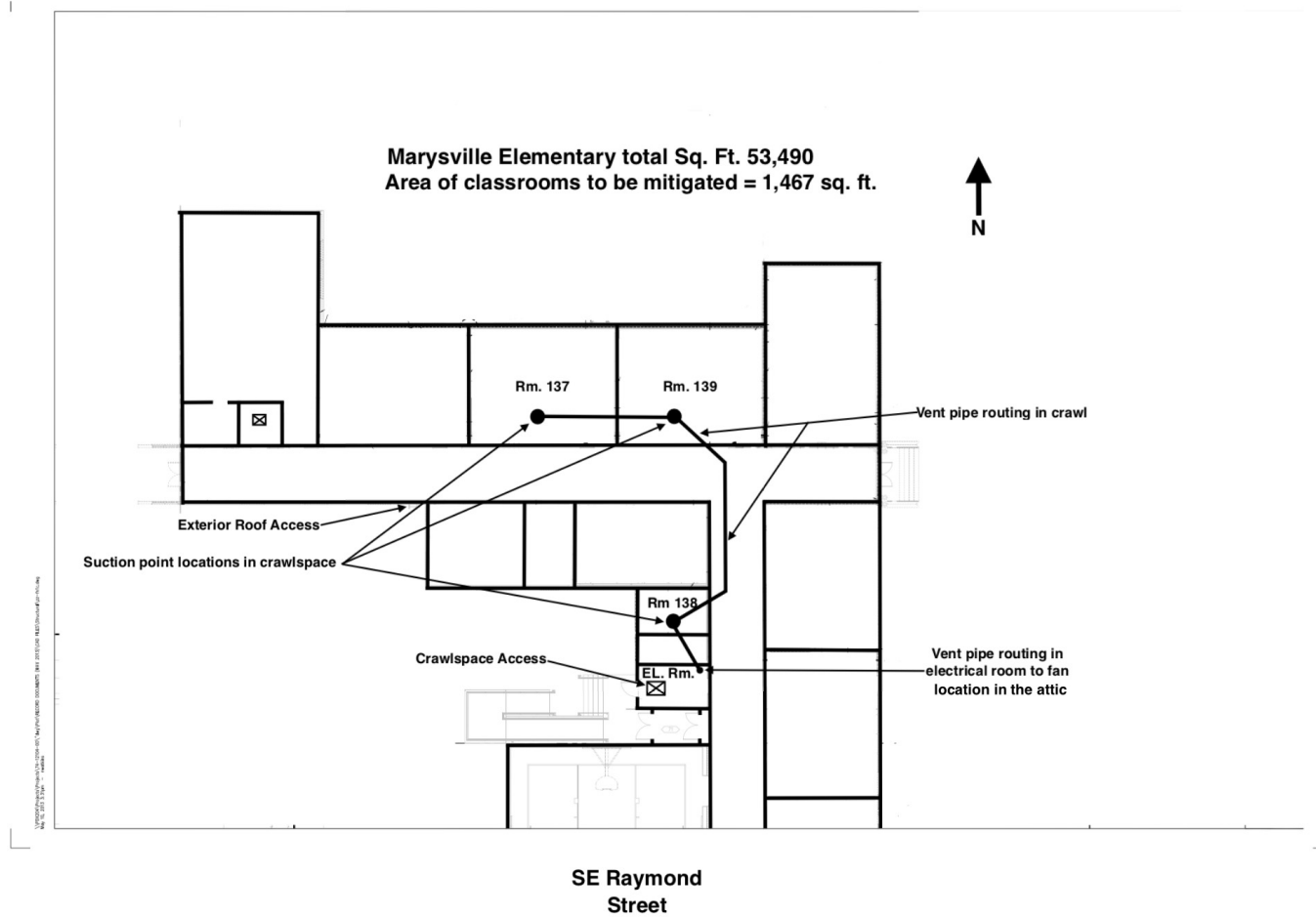
**Initial short-term testing was performed April 11, 2016 to April 14, 2016 by PBS Engineering and Environmental Inc. Testing indicated 5.6 pCi/L in room 137, 5.5 pCi/L in room 138 and 5.2 pCi/L in room 139 of the facility. PBS performed additional testing starting in October 2016 to June 2017 as confirmation long-term testing to determine if mitigation was needed. The results of the 6 month tests were 4.8 pCi/L in room 137, 4.8 pCi/L in room 138 and 5.4 pCi/L in room 139.**

**PBS Environmental continued to observe the radon levels in the rooms with elevated levels using electronic radon monitors until Cascade Radon was hired to diagnose the affected rooms and develop a mitigation strategy to reduce the radon levels.**

**The installation of a sub-soil 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.**



**This system required a single fan to create enough negative pressure beneath the soil of the crawlspace to reduce the radon levels in the affected rooms. The Festa AMG Eagle extreme model fan is utilized when a system is required to operate under high vacuum pressure. The mitigation fan is mounted in the attic of the facility and the suction points are located in the soil of the crawlspace below the rooms that contained elevated radon levels. Vent piping continues through the crawlspace and interior of the building then to above the roofline.**



This detail shows the suction point locations and system routing through the crawlspace. Vent piping is routed to the electrical room then to the fan location in the attic above.



**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 in the electrical room to the fan in the attic above.**

# **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**



**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)

March 06, 2018  
C-68606

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

RE: Marysville Elementary School  
7733 SE Raymond St.  
Portland, OR 97206

Effective: November 25, 2019

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.

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## Radon Inspection Report

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**Test Location:**

Marysville Elementary School  
7733 SE Raymond St.  
Portland, OR 97206

**Test For:**

Bldg. Type: Educational

**Inspected By:**

12839 NE Airport Way  
Portland, OR 97230  
503-421-4813

Type: Post-Mitigation

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### Test Result: Pass

**Overall Average:**

**1.2 pCi/l**

**EPA Average:**

**1.3 pCi/l**

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**Test Device Details:**

Serial Number: 238738021  
Model Number: 1028XP  
Last Calibration: 02/06/2019  
Next Calibration: 02/06/2020  
Cal-Factors: 2.92  
Motion Error: Yes

**Test Site Condition:**

Structure Type: Elementary School

Mitigation Sys: Installed and Active

**Test Summary:**CRM Location:

Room 137

Start:

10/28/2019  
08:59 AM

Stop:

10/31/2019  
09:59 AM

Interval:

1 hr

Duration:

73 hr

\*First 4 hrs of data excluded

Min:

0.0

Max:

3.8

Average:

1.3

Measurement Units:

pCi/l

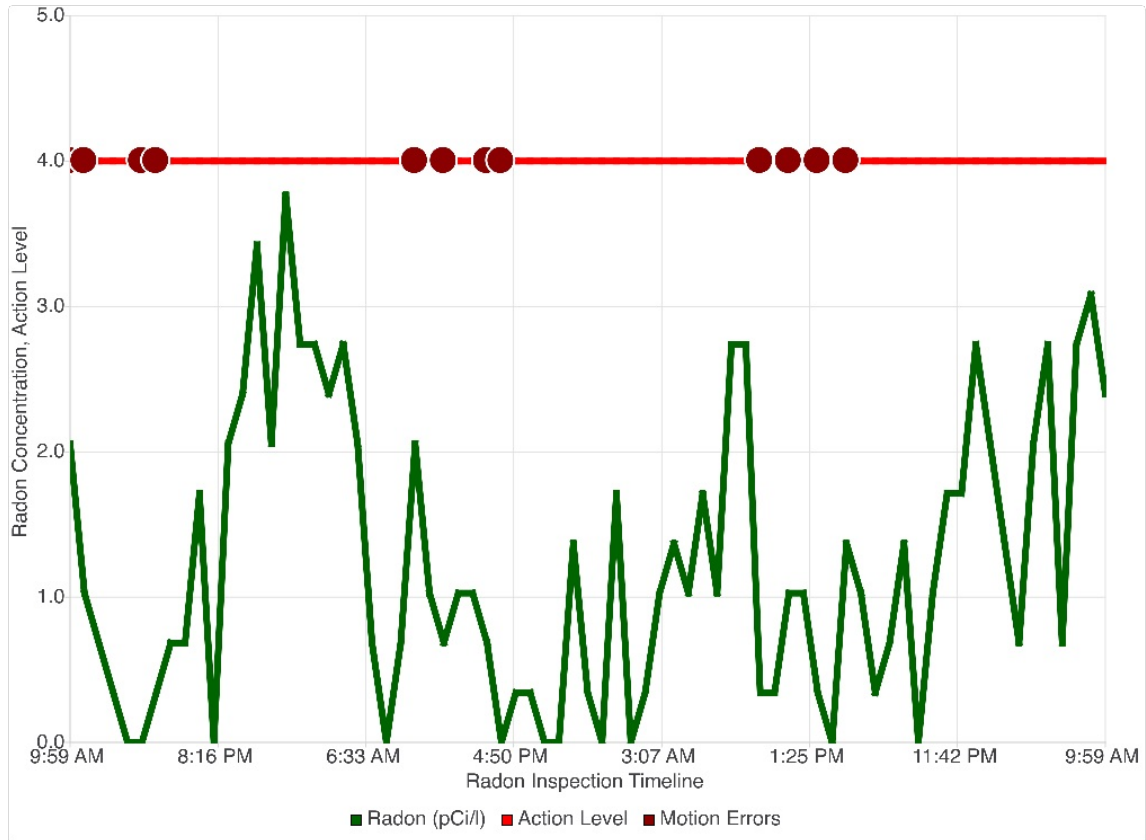
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**Comments:**

Lic/Cert Signature

Inspection Report Date: 10/31/2019

## Radon Inspection Chart



**Test Result: Pass**

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/28/19 09:59 AM | 2.1                 | M            |
| 10/28/19 10:59 AM | 1.0                 | M            |
| 10/28/19 11:59 AM | 0.7                 | -            |
| 10/28/19 12:59 PM | 0.3                 | -            |
| 10/28/19 01:59 PM | 0.0                 | -            |
| 10/28/19 02:59 PM | 0.0                 | M            |
| 10/28/19 03:59 PM | 0.3                 | M            |
| 10/28/19 04:59 PM | 0.7                 | -            |
| 10/28/19 05:59 PM | 0.7                 | -            |
| 10/28/19 06:59 PM | 1.7                 | -            |
| 10/28/19 07:59 PM | 0.0                 | -            |
| 10/28/19 08:59 PM | 2.1                 | -            |
| 10/28/19 09:59 PM | 2.4                 | -            |
| 10/28/19 10:59 PM | 3.4                 | -            |
| 10/28/19 11:59 PM | 2.1                 | -            |
| 10/29/19 12:59 AM | 3.8                 | -            |
| 10/29/19 01:59 AM | 2.7                 | -            |
| 10/29/19 02:59 AM | 2.7                 | -            |
| 10/29/19 03:59 AM | 2.4                 | -            |
| 10/29/19 04:59 AM | 2.7                 | -            |
| 10/29/19 05:59 AM | 2.1                 | -            |
| 10/29/19 06:59 AM | 0.7                 | -            |
| 10/29/19 07:59 AM | 0.0                 | -            |
| 10/29/19 08:59 AM | 0.7                 | -            |
| 10/29/19 09:59 AM | 2.1                 | M            |
| 10/29/19 10:59 AM | 1.0                 | -            |
| 10/29/19 11:59 AM | 0.7                 | M            |
| 10/29/19 12:59 PM | 1.0                 | -            |
| 10/29/19 01:59 PM | 1.0                 | -            |
| 10/29/19 02:59 PM | 0.7                 | M            |
| 10/29/19 03:59 PM | 0.0                 | M            |
| 10/29/19 04:59 PM | 0.3                 | -            |
| 10/29/19 05:59 PM | 0.3                 | -            |
| 10/29/19 06:59 PM | 0.0                 | -            |
| 10/29/19 07:59 PM | 0.0                 | -            |
| 10/29/19 08:59 PM | 1.4                 | -            |
| 10/29/19 09:59 PM | 0.3                 | -            |
| 10/29/19 10:59 PM | 0.0                 | -            |
| 10/29/19 11:59 PM | 1.7                 | -            |
| 10/30/19 12:59 AM | 0.0                 | -            |
| 10/30/19 01:59 AM | 0.3                 | -            |
| 10/30/19 02:59 AM | 1.0                 | -            |
| 10/30/19 03:59 AM | 1.4                 | -            |
| 10/30/19 04:59 AM | 1.0                 | -            |

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### Test Result: Pass

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/30/19 05:59 AM | 1.7                 | -            |
| 10/30/19 06:59 AM | 1.0                 | -            |
| 10/30/19 07:59 AM | 2.7                 | -            |
| 10/30/19 08:59 AM | 2.7                 | -            |
| 10/30/19 09:59 AM | 0.3                 | M            |
| 10/30/19 10:59 AM | 0.3                 | -            |
| 10/30/19 11:59 AM | 1.0                 | M            |
| 10/30/19 12:59 PM | 1.0                 | -            |
| 10/30/19 01:59 PM | 0.3                 | M            |
| 10/30/19 02:59 PM | 0.0                 | -            |
| 10/30/19 03:59 PM | 1.4                 | M            |
| 10/30/19 04:59 PM | 1.0                 | -            |
| 10/30/19 05:59 PM | 0.3                 | -            |
| 10/30/19 06:59 PM | 0.7                 | -            |
| 10/30/19 07:59 PM | 1.4                 | -            |
| 10/30/19 08:59 PM | 0.0                 | -            |
| 10/30/19 09:59 PM | 1.0                 | -            |
| 10/30/19 10:59 PM | 1.7                 | -            |
| 10/30/19 11:59 PM | 1.7                 | -            |
| 10/31/19 12:59 AM | 2.7                 | -            |
| 10/31/19 01:59 AM | 2.1                 | -            |
| 10/31/19 02:59 AM | 1.4                 | -            |
| 10/31/19 03:59 AM | 0.7                 | -            |
| 10/31/19 04:59 AM | 2.1                 | -            |
| 10/31/19 05:59 AM | 2.7                 | -            |
| 10/31/19 06:59 AM | 0.7                 | -            |
| 10/31/19 07:59 AM | 2.7                 | -            |
| 10/31/19 08:59 AM | 3.1                 | -            |
| 10/31/19 09:59 AM | 2.4                 | -            |

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## Test Result: Pass

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Certification of Calibration

### Device Information

Serial Number: **238738021**  
Model Number: 1028-XP - Continuous Radon Monitor  
Calibration Date: 2/6/2019  
Device Firmware: 01.0.8  
Device NRPP Code: CR2282

### Calibration Chamber Information

Certification #: NRSB TRC600001  
Certification Expiration Date: 05/31/2019  
NIST Traceability Standard: SRM 4973  
Last Inter-comparison: 03/2018  
Inter-Comparison Error: 4.1

### Device Calibration Test Details

Chamber #: 9  
Operator: 594  
Test Start: 2/4/2019 1:46 PM  
Test Stop: 2/6/2019 11:56 AM

| Test Details        | Units              | Value | Limits    | Results |
|---------------------|--------------------|-------|-----------|---------|
| Radon Concentration | pCi/l              | 147.2 | 40 - 200  | Pass    |
| Background Level    | pCi/l              | 0.2   | <= 0.5    | Pass    |
| Calibration Factor  | (count/hr)/(pCi/l) | 2.9   | 2.3 - 3.2 | Pass    |

This instrument has been calibrated in accordance with the specifications set forth by the manufacturer.

Calibration Result: **Pass**  
Next Calibration Due Date: **2/6/2020**

### Reviewed and Certified by:

David Rayburn  
Radon Measurement Specialist  
NRSB Certification #9SS057  
Date: 2/6/2019

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## Radon Inspection Report

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**Test Location:**

Marysville Elementary School  
7733 SE Raymond St.  
Portland , OR 97206

**Test For:**

Bldg. Type: Educational

Type: Post-Mitigation

**Inspected By:**

12839 NE Airport Way  
Portland, OR 97230  
503-421-4813

---

### Test Result: Pass

**Overall Average:**

**1.9 pCi/l**

**EPA Average:**

**1.9 pCi/l**

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**Test Device Details:**

Serial Number: 240235012  
Model Number: 1028XP  
Last Calibration: 03/13/2019  
Next Calibration: 03/13/2020  
Cal-Factors: 2.99  
Motion Error: Yes

**Test Site Condition:**

Structure Type: Elementary School

Mitigation Sys: Installed and Active

**Test Summary:**CRM Location:

Room 138

Start:

10/28/2019  
08:59 AM

Stop:

10/31/2019  
09:59 AM

Interval:

1 hr

Duration:

73 hr

\*First 4 hrs of data excluded

Min:

0.0

Max:

5.0

Average:

1.9

Measurement Units:

pCi/l

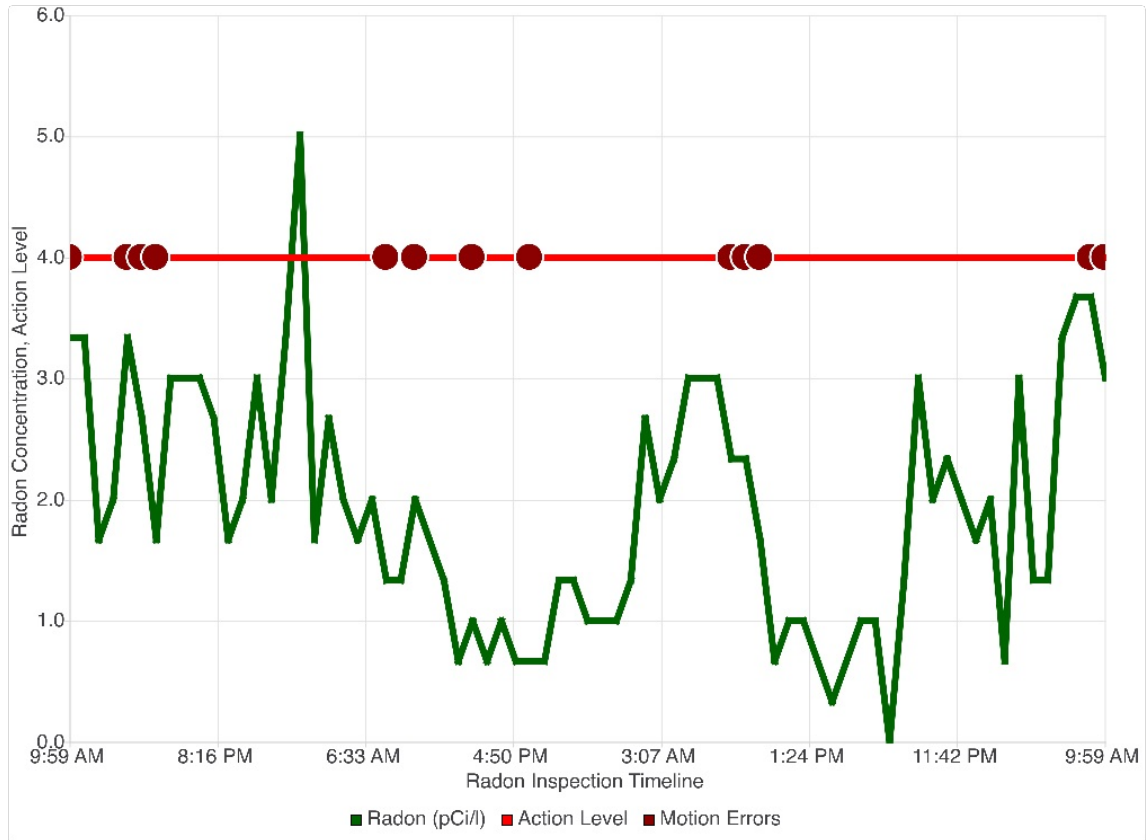
---

**Comments:**

Lic/Cert Signature

Inspection Report Date: 10/31/2019

## Radon Inspection Chart



**Test Result: Pass**

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/28/19 09:59 AM | 3.3                 | M            |
| 10/28/19 10:59 AM | 3.3                 | -            |
| 10/28/19 11:59 AM | 1.7                 | -            |
| 10/28/19 12:59 PM | 2.0                 | -            |
| 10/28/19 01:59 PM | 3.3                 | M            |
| 10/28/19 02:59 PM | 2.7                 | M            |
| 10/28/19 03:59 PM | 1.7                 | M            |
| 10/28/19 04:59 PM | 3.0                 | -            |
| 10/28/19 05:59 PM | 3.0                 | -            |
| 10/28/19 06:59 PM | 3.0                 | -            |
| 10/28/19 07:59 PM | 2.7                 | -            |
| 10/28/19 08:59 PM | 1.7                 | -            |
| 10/28/19 09:59 PM | 2.0                 | -            |
| 10/28/19 10:59 PM | 3.0                 | -            |
| 10/28/19 11:59 PM | 2.0                 | -            |
| 10/29/19 12:59 AM | 3.3                 | -            |
| 10/29/19 01:59 AM | 5.0                 | -            |
| 10/29/19 02:59 AM | 1.7                 | -            |
| 10/29/19 03:59 AM | 2.7                 | -            |
| 10/29/19 04:59 AM | 2.0                 | -            |
| 10/29/19 05:59 AM | 1.7                 | -            |
| 10/29/19 06:59 AM | 2.0                 | -            |
| 10/29/19 07:59 AM | 1.3                 | M            |
| 10/29/19 08:59 AM | 1.3                 | -            |
| 10/29/19 09:59 AM | 2.0                 | M            |
| 10/29/19 10:59 AM | 1.7                 | -            |
| 10/29/19 11:59 AM | 1.3                 | -            |
| 10/29/19 12:59 PM | 0.7                 | -            |
| 10/29/19 01:59 PM | 1.0                 | M            |
| 10/29/19 02:59 PM | 0.7                 | -            |
| 10/29/19 03:59 PM | 1.0                 | -            |
| 10/29/19 04:59 PM | 0.7                 | -            |
| 10/29/19 05:59 PM | 0.7                 | M            |
| 10/29/19 06:59 PM | 0.7                 | -            |
| 10/29/19 07:59 PM | 1.3                 | -            |
| 10/29/19 08:59 PM | 1.3                 | -            |
| 10/29/19 09:59 PM | 1.0                 | -            |
| 10/29/19 10:59 PM | 1.0                 | -            |
| 10/29/19 11:59 PM | 1.0                 | -            |
| 10/30/19 12:59 AM | 1.3                 | -            |
| 10/30/19 01:59 AM | 2.7                 | -            |
| 10/30/19 02:59 AM | 2.0                 | -            |
| 10/30/19 03:59 AM | 2.3                 | -            |
| 10/30/19 04:59 AM | 3.0                 | -            |

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### Test Result: Pass

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/30/19 05:59 AM | 3.0                 | -            |
| 10/30/19 06:59 AM | 3.0                 | -            |
| 10/30/19 07:59 AM | 2.3                 | M            |
| 10/30/19 08:59 AM | 2.3                 | M            |
| 10/30/19 09:59 AM | 1.7                 | M            |
| 10/30/19 10:59 AM | 0.7                 | -            |
| 10/30/19 11:59 AM | 1.0                 | -            |
| 10/30/19 12:59 PM | 1.0                 | -            |
| 10/30/19 01:59 PM | 0.7                 | -            |
| 10/30/19 02:59 PM | 0.3                 | -            |
| 10/30/19 03:59 PM | 0.7                 | -            |
| 10/30/19 04:59 PM | 1.0                 | -            |
| 10/30/19 05:59 PM | 1.0                 | -            |
| 10/30/19 06:59 PM | 0.0                 | -            |
| 10/30/19 07:59 PM | 1.3                 | -            |
| 10/30/19 08:59 PM | 3.0                 | -            |
| 10/30/19 09:59 PM | 2.0                 | -            |
| 10/30/19 10:59 PM | 2.3                 | -            |
| 10/30/19 11:59 PM | 2.0                 | -            |
| 10/31/19 12:59 AM | 1.7                 | -            |
| 10/31/19 01:59 AM | 2.0                 | -            |
| 10/31/19 02:59 AM | 0.7                 | -            |
| 10/31/19 03:59 AM | 3.0                 | -            |
| 10/31/19 04:59 AM | 1.3                 | -            |
| 10/31/19 05:59 AM | 1.3                 | -            |
| 10/31/19 06:59 AM | 3.3                 | -            |
| 10/31/19 07:59 AM | 3.7                 | -            |
| 10/31/19 08:59 AM | 3.7                 | M            |
| 10/31/19 09:59 AM | 3.0                 | M            |

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## Test Result: Pass

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Certification of Calibration

### Device Information

Serial Number: 240235012  
Model Number: 1028-XP - Continuous Radon Monitor  
Calibration Date: 3/13/2019  
Device Firmware: 01.0.8  
Device NRPP Code: CR2282

### Calibration Chamber Information

Certification #: NRSB TRC600001  
Certification Expiration Date: 05/31/2019  
NIST Traceability Standard: SRM 4973  
Last Inter-comparison: 03/2018  
Inter-Comparison Error: 4.1

### Device Calibration Test Details

Chamber #: 9  
Operator: 594  
Test Start: 3/11/2019 2:09 PM  
Test Stop: 3/13/2019 12:26 PM

| Test Details        | Units              | Value | Limits    | Results |
|---------------------|--------------------|-------|-----------|---------|
| Radon Concentration | pCi/l              | 136.4 | 40 - 200  | Pass    |
| Background Level    | pCi/l              | 0.2   | <= 0.5    | Pass    |
| Calibration Factor  | (count/hr)/(pCi/l) | 3.0   | 2.3 - 3.2 | Pass    |

This instrument has been calibrated in accordance with the specifications set forth by the manufacturer.

Calibration Result: Pass  
Next Calibration Due Date: 3/13/2020

### Reviewed and Certified by:

David Rayburn  
Radon Measurement Specialist  
NRSB Certification #9SS057  
Date: 3/13/2019

Sun Nuclear Corporation  
3275 Suntree Blvd.  
Melbourne, Florida 32940 U.S.A.

Tel: +1 321 255-7011  
Email: radon@sunnuclear.com  
Web: www.sunnuclear.com

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## Radon Inspection Report

---

**Test Location:**

Marysville Elementary School  
7733 SE Raymond St.  
Portland , OR 97206

**Test For:**

Bldg. Type: Educational

**Inspected By:**

12839 NE Airport Way  
Portland, OR 97230  
5034214813

Type: Post-Mitigation

---

### Test Result: Pass

**Overall Average:**

**0.9 pCi/l**

**EPA Average:**

**0.9 pCi/l**

---

**Test Device Details:**

Serial Number: 239145025  
Model Number: 1028XP  
Last Calibration: 03/13/2019  
Next Calibration: 03/13/2020  
Cal-Factors: 3.05  
Motion Error: Yes

**Test Site Condition:**

Structure Type: Elementary School

Mitigation Sys: Installed and Active

**Test Summary:**CRM Location:

Room 139

Start:

10/28/2019  
09:04 AM

Stop:

10/31/2019  
09:04 AM

Interval:

1 hr

Duration:

72 hr

\*First 4 hrs of data excluded

Min:

0.0

Max:

3.9

Average:

0.9

Measurement Units:

pCi/l

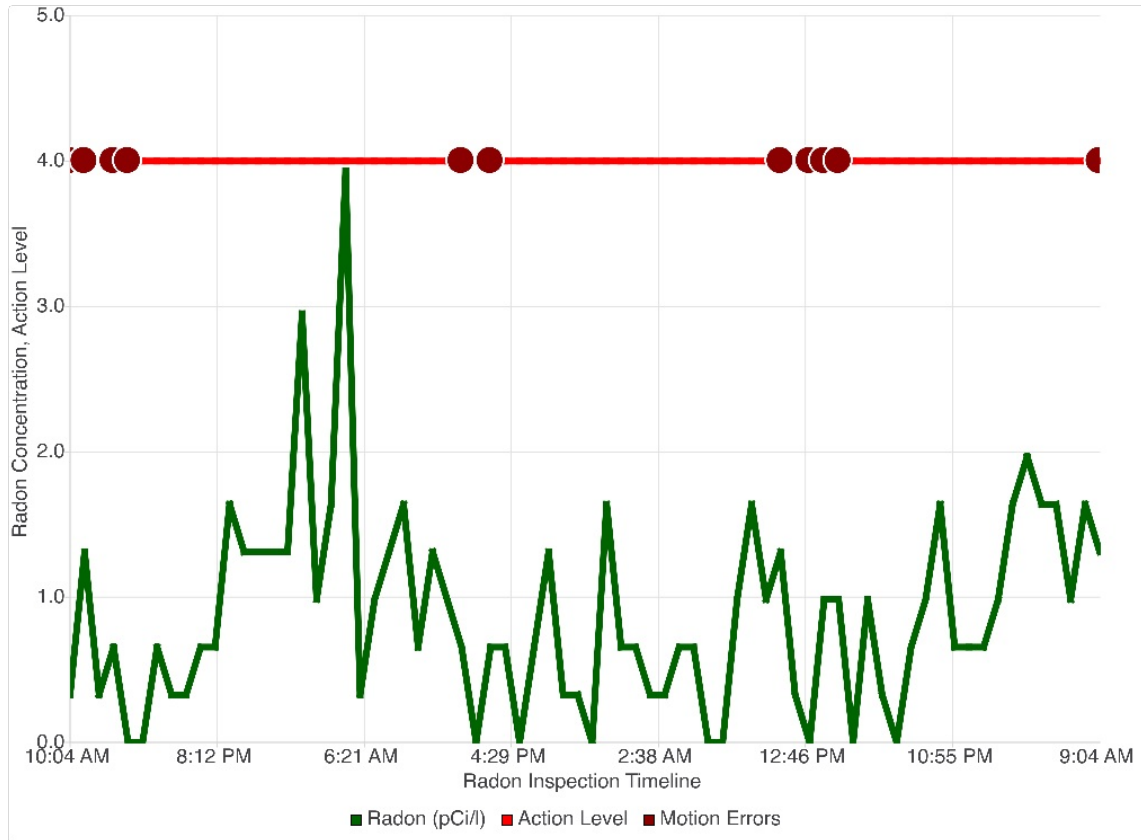
---

**Comments:**

Lic/Cert Signature

Inspection Report Date: 10/31/2019

## Radon Inspection Chart



**Test Result: Pass**

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/28/19 10:04 AM | 0.3                 | M            |
| 10/28/19 11:04 AM | 1.3                 | M            |
| 10/28/19 12:04 PM | 0.3                 | -            |
| 10/28/19 01:04 PM | 0.7                 | M            |
| 10/28/19 02:04 PM | 0.0                 | M            |
| 10/28/19 03:04 PM | 0.0                 | -            |
| 10/28/19 04:04 PM | 0.7                 | -            |
| 10/28/19 05:04 PM | 0.3                 | -            |
| 10/28/19 06:04 PM | 0.3                 | -            |
| 10/28/19 07:04 PM | 0.7                 | -            |
| 10/28/19 08:04 PM | 0.7                 | -            |
| 10/28/19 09:04 PM | 1.6                 | -            |
| 10/28/19 10:04 PM | 1.3                 | -            |
| 10/28/19 11:04 PM | 1.3                 | -            |
| 10/29/19 12:04 AM | 1.3                 | -            |
| 10/29/19 01:04 AM | 1.3                 | -            |
| 10/29/19 02:04 AM | 3.0                 | -            |
| 10/29/19 03:04 AM | 1.0                 | -            |
| 10/29/19 04:04 AM | 1.6                 | -            |
| 10/29/19 05:04 AM | 3.9                 | -            |
| 10/29/19 06:04 AM | 0.3                 | -            |
| 10/29/19 07:04 AM | 1.0                 | -            |
| 10/29/19 08:04 AM | 1.3                 | -            |
| 10/29/19 09:04 AM | 1.6                 | -            |
| 10/29/19 10:04 AM | 0.7                 | -            |
| 10/29/19 11:04 AM | 1.3                 | -            |
| 10/29/19 12:04 PM | 1.0                 | -            |
| 10/29/19 01:04 PM | 0.7                 | M            |
| 10/29/19 02:04 PM | 0.0                 | -            |
| 10/29/19 03:04 PM | 0.7                 | M            |
| 10/29/19 04:04 PM | 0.7                 | -            |
| 10/29/19 05:04 PM | 0.0                 | -            |
| 10/29/19 06:04 PM | 0.7                 | -            |
| 10/29/19 07:04 PM | 1.3                 | -            |
| 10/29/19 08:04 PM | 0.3                 | -            |
| 10/29/19 09:04 PM | 0.3                 | -            |
| 10/29/19 10:04 PM | 0.0                 | -            |
| 10/29/19 11:04 PM | 1.6                 | -            |
| 10/30/19 12:04 AM | 0.7                 | -            |
| 10/30/19 01:04 AM | 0.7                 | -            |
| 10/30/19 02:04 AM | 0.3                 | -            |
| 10/30/19 03:04 AM | 0.3                 | -            |
| 10/30/19 04:04 AM | 0.7                 | -            |
| 10/30/19 05:04 AM | 0.7                 | -            |

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### Test Result: Pass

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Test Table

\* Data from first 4 hours excluded from EPA calculations

| <u>Date/Time</u>  | <u>Radon(pCi/l)</u> | <u>Flags</u> |
|-------------------|---------------------|--------------|
| 10/30/19 06:04 AM | 0.0                 | -            |
| 10/30/19 07:04 AM | 0.0                 | -            |
| 10/30/19 08:04 AM | 1.0                 | -            |
| 10/30/19 09:04 AM | 1.6                 | -            |
| 10/30/19 10:04 AM | 1.0                 | -            |
| 10/30/19 11:04 AM | 1.3                 | M            |
| 10/30/19 12:04 PM | 0.3                 | -            |
| 10/30/19 01:04 PM | 0.0                 | M            |
| 10/30/19 02:04 PM | 1.0                 | M            |
| 10/30/19 03:04 PM | 1.0                 | M            |
| 10/30/19 04:04 PM | 0.0                 | -            |
| 10/30/19 05:04 PM | 1.0                 | -            |
| 10/30/19 06:04 PM | 0.3                 | -            |
| 10/30/19 07:04 PM | 0.0                 | -            |
| 10/30/19 08:04 PM | 0.7                 | -            |
| 10/30/19 09:04 PM | 1.0                 | -            |
| 10/30/19 10:04 PM | 1.6                 | -            |
| 10/30/19 11:04 PM | 0.7                 | -            |
| 10/31/19 12:04 AM | 0.7                 | -            |
| 10/31/19 01:04 AM | 0.7                 | -            |
| 10/31/19 02:04 AM | 1.0                 | -            |
| 10/31/19 03:04 AM | 1.6                 | -            |
| 10/31/19 04:04 AM | 2.0                 | -            |
| 10/31/19 05:04 AM | 1.6                 | -            |
| 10/31/19 06:04 AM | 1.6                 | -            |
| 10/31/19 07:04 AM | 1.0                 | -            |
| 10/31/19 08:04 AM | 1.6                 | -            |
| 10/31/19 09:04 AM | 1.3                 | M            |

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**Test Result: Pass**

**Test Location:** 7733 SE Raymond St. Portland , OR 97206

**Inspection Report Date:** 10/31/2019

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## Certification of Calibration

### Device Information

Serial Number: **239145025**  
Model Number: 1028-XP - Continuous Radon Monitor  
Calibration Date: 3/13/2019  
Device Firmware: 01.0.8  
Device NRPP Code: CR2282

### Calibration Chamber Information

Certification #: NRSB TRC600001  
Certification Expiration Date: 05/31/2019  
NIST Traceability Standard: SRM 4973  
Last Inter-comparison: 03/2018  
Inter-Comparison Error: 4.1

### Device Calibration Test Details

Chamber #: 9  
Operator: 594  
Test Start: 3/11/2019 2:09 PM  
Test Stop: 3/13/2019 12:26 PM

| Test Details        | Units              | Value | Limits    | Results |
|---------------------|--------------------|-------|-----------|---------|
| Radon Concentration | pCi/l              | 136.4 | 40 - 200  | Pass    |
| Background Level    | pCi/l              | 0.1   | <= 0.5    | Pass    |
| Calibration Factor  | (count/hr)/(pCi/l) | 3.1   | 2.3 - 3.2 | Pass    |

This instrument has been calibrated in accordance with the specifications set forth by the manufacturer.

Calibration Result: **Pass**  
Next Calibration Due Date: **3/13/2020**

### Reviewed and Certified by:

David Rayburn  
Radon Measurement Specialist  
NRSB Certification #9SS057  
Date: 3/13/2019

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