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| ***RADON SCREENING SURVEY*****City View Elementary School 80 Prospect Street Worcester, MA** **City View Elementary School****80 Prospect Street****Worcester, MA**Prepared by:Massachusetts Department of Public HealthBureau of Environmental HealthIndoor Air Quality ProgramRadon Assessment UnitApril, 2019 |

# Background

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| Dates of Assessment: | 3/11/2019 through 3/13/2019 |
| Building Name: | City View Elementary School |
| Address: | 80 Prospect Street, Worcester, MA |
| Assessment Requested by: | Worcester School Dept. |
| Massachusetts Department of Public Health Bureau of Environmental Health (MDPH/BEH) Staff Conducting Assessment: | Lisa A. Hébert, Technical Radon Specialist, Indoor Air Quality (IAQ) Program, Radon Unit |

# Methods

Radon samples were collected for the purpose of this annual radon survey using the United States Environmental Protection Agency (US EPA) Method #402-R-92-004 Liquid Scintillation (LS). Sampling devices were obtained through AccuStar Labs, a certified radon laboratory. Twenty four devices were deployed throughout the building for a minimum 48-hour time period. Devices were deployed on 3/11/2019 and collected on 3/13/2019.

# Results

Tests were taken during normal operations at City View Elementary School. Of the 24 areas where test devices were deployed, devices from 23 areas were collected and submitted to AccuStar Labs. The lab results from the survey appear in Appendix A.

# Discussion

Radon Unit staff reviewed the lab results from AccuStar Labs and found all quality assurance parameters within acceptable limits. Appendix A shows that radon levels in the building ranged from less than 0.4pCi/L to 0.9pCi/L. All areas screened had radon levels below the US EPA action guideline of 4 picocuries per liter of air pCi/L. Please note that one vial could not be submitted due to being disturbed/ tampered. One area could not be tested due to elevated temperatures. These areas were:

• Room 103 - (Vial # 3229303 - tampered)

• Gym – (above 80 degrees F)

## Radon Gas

According to the National Research Council (NRC, 2009), “low levels of radon are present in all the air we breathe.” Radon is a naturally occurring, radioactive gas that is produced by the natural decay of uranium in the soil. The average outdoor radon level is about 0.4 pCi/L (US EPA, 2009). Once radon is formed, it migrates through various pathways in the soil and can enter a building through cracks, holes, and joints in a building’s foundation (US EPA, 2009). The EPA recommends mitigation for indoor radon levels at or above 4 pCi/L.

According to the US EPA (2009), radon gas “decays into radioactive particles that can get trapped in your lungs when you breathe. As they break down further, these particles release small bursts of energy.” This activity can damage your lung tissue and increase a person’s risk of developing lung cancer (US EPA, 2009). Radon is the leading cause of lung cancer in non-smokers. In 2005, the U.S. Surgeon General issued a health advisory stating that indoor radon is the second leading cause of lung cancer (US EPA, 2013).

# Recommendations

Based on the measurements and observations made during the visit, the following recommendations are made.

It would be prudent to test the following areas in the future:

Room 103

Gym

Refer to resource manual and other related IAQ documents located on the MDPH’s website for further building-wide evaluations and advice on maintaining public buildings. These documents are available at: <http://mass.gov/dph/iaq> .

If you have any questions or concerns, please call the Massachusetts Department of Public Health Radon Assessment Unit at (413) 586-7525.

**References**

National Research Council (MRC). 1999. *Risk Assessment of Radon in Drinking Water,* National Academy Press.

United States Environmental Protection Agency (US EPA). 2009. “A Citizen’s Guide to Radon. The Guide To Protecting Yourself and Your Family From Radon”. US Environmental Protection Agency. EPA402/K-09/001. January 2009.

United States Environmental Protection Agency (US EPA). 2013. “Home Buyers and Seller’s Guide to Radon”. US Environmental Protection Agency. EPA402/K-13/002. September 2013.

**Appendix A**

**Radon Survey Results**

NELAC NY 11769

NRPP 103216 AL NRSB ARL0017

Laboratory Report for: Property Tested:

EPA Method #402-R-92-004

Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Principal Greg Tremba-City View Elementary School City View School 80 Prospect Street 80 Prospect Street

Worcester MA 01601 Worcester MA 01601

Log Number

Device Number

Test Exposure Duration:

Area Tested

Result

pCi/L

2451465 3228301

2451466 3228302

2451467 3228304

2451468 3228305

2451469 3228306

2451470 3228307

2451471 3228308

2451472 3228309

2451473 3228310

2451474 3228311

2451475 3228312

03/11/2019

03/11/2019

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03/13/2019 4:40 pm

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03/13/2019 4:50 pm

03/13/2019 4:55 pm

03/13/2019 4:55 pm

03/13/2019 4:55 pm

03/13/2019 5:00 pm

03/13/2019 5:00 pm

03/13/2019 5:05 pm

Room 101

Room 102

Room 104

Room 105

Room 106

Room 107

Room 107 M Custodian's Office Room 101 S

Room 105 S3

Room 105 S2

Room 105 S1

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

0.9

0.9

0.6

**Comment:**

Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met (Kitchen). Your test is for

informational purposes only. A copy of this report was emailed to lisa.hebert@state.ma.us.

Distributed by: Massachusetts Dept of Public Health-Radon Program

Date Received: 03/15/2019

Date Logged:

03/15/2019

Date Analyzed: 03/16/2019

Date Reported:

03/18/2019

**Disclaimer:**

Report Reviewed By: \_ \_\_\_\_ \_\_\_ \_\_\_

Report Approved By: \_\_\_ \_\_\_ \_\_\_ \_\_\_\_ \_\_

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.

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NRPP 103216 AL NRSB ARL0017

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EPA Method #402-R-92-004

Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Principal Greg Tremba-City View Elementary School City View School 80 Prospect Street 80 Prospect Street

Worcester MA 01601 Worcester MA 01601

Log Number

Device Number

Test Exposure Duration:

Area Tested

Result

pCi/L

2451476 3228313

2451477 3228314

2451478 3228315

2451479 3228316

2451480 3228317

2451481 3228318

2451482 3228319

2451483 3228323

2451484 3228321

2451485 3228322

2451486 3228325

03/11/2019

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03/13/2019 5:20 pm

03/13/2019 5:20 pm

03/13/2019 5:25 pm

03/13/2019 5:25 pm

03/13/2019 5:25 pm

03/13/2019 4:40 pm

03/13/2019 4:55 pm

03/13/2019 5:25 pm

03/13/2019 5:35 pm

03/13/2019 5:40 pm

03/13/2019 5:50 pm

Room 201 S

Room Cafeteria South End Room Cafeteria North End Room Cafeteria Kitchen

Room Cafeteria Manager's Office

QA-1 QA-2 QA-3

Electrical Room Room 214 S

Room 209 Guidance

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

0.4

< 0.4

< 0.4

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Principal Greg Tremba-City View Elementary School City View School 80 Prospect Street 80 Prospect Street

Worcester MA 01601 Worcester MA 01601

Log Number

Device Number

Test Exposure Duration:

Area Tested

Result

pCi/L

2451487 3228326

2451488 3228327

2451489 3228329

2451490 3228330

2451491 3228331

2451492 3228332

2451493 3228334

03/11/2019

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03/13/2019 5:35 pm

03/13/2019 5:55 pm

03/13/2019 6:00 pm

Room 210 Principal

Room 211 Assistant Principal 212 Office Conference Room Room Main Office

QA-4

QA-5 QA-6

< 0.4

< 0.4

< 0.4

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< 0.4

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