



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Wayside Elementary School
Date of Test Report	4/6/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	60
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.7 pCi/L

Project Status:  
Initial testing completed; no further action needed.



April 6, 2022

Brian T. Croyle, PG, CHMM  
Environmental Specialist  
Montgomery County Public Schools  
Gaithersburg, MD 20879

Re: **Radon Testing Services**  
KCI Job # 122108316

Location: Wayside ES  
10011 Glen Rd.  
Potomac, MD 20854

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Wayside ES, located at 10011 Glen Rd. Potomac, MD 20854 (subject site).

**Scope of Services:**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Specialist (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from <https://www.montgomeryschoolsmd.org> or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on February 8, 2022 and deployed sixty nine (69) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI also included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on February 11, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

**Evaluation of Testing Conditions:**

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility’s HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room during the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the mid 30s to the mid 50s Fahrenheit. Maximum sustained winds ranged from 3-12 miles per hour. Average humidity was around 23% with 0.1 inches of precipitation (rain) was recorded during testing period.

**Results:**

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Sampling locations and associated test kit identification numbers and relevant field observations are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
≥4.0 pCi/L	None	N/A
<4.0 pCi/L	See Attachment B	

Quality Control Samples	
Results of Blank Canisters:	The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L.
Adequate Laboratory Precision?	Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved.
Spike Sample Analysis:	The Spike Sample analysis results indicate the laboratory is operating within statistical control limits.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 891-1769.

Sincerely,



Tyler P. McCleaf  
Radon Measurement Provider  
#111004 RT  
KCI Technologies, Inc.

Attachments:     A- Floor Plan with Test Locations  
                      B- Table 1-3, Radon Test Summary Spreadsheets  
                      C- Laboratory Analytical Results

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Wayside ES		
Test Period: 02/8/2022 - 02/11/2022		
Kit Number	Room / Area	Result
11107018	100	< 0.3
11107041	102	< 0.3
11113472	103	< 0.3
11107067	104	< 0.3
11107078	104	< 0.3
11113471	105	< 0.3
11107040	106	< 0.3
11107045	106	0.6
11107077	106	< 0.3
11113470	107	0.5
11107051	112	< 0.3
11107052	112	0.6
11107075	115	0.5
11107072	119	< 0.3
11107055	120	< 0.3
11107038	124	0.5
11107097	127	< 0.3
11107098	127	< 0.3
11107099	127	< 0.3
11107071	128	< 0.3
11107074	128	< 0.3
11107096	129	< 0.3
11107095	131	< 0.3
11107094	133	< 0.3
11107023	134	0.6
11107029	135	0.6
11107024	136	< 0.3
11107093	137	< 0.3
11107092	139	< 0.3
11107076	140	< 0.3
11107088	141	< 0.3
11107081	146	0.5
11107037	150	0.5
11107082	150	< 0.3
11107084	150	< 0.3
11107030	152	< 0.3
11107091	155	0.5
11107050	156	0.7
11107090	161	1.7
11107087	163	< 0.3
11107089	163	< 0.3
11107026	164	< 0.3



Table 1- Radon Testing Results		
Wayside ES		
Test Period: 02/8/2022 - 02/11/2022		
Kit Number	Room / Area	Result
11107044	164	1.0
11107054	166	< 0.3
11107086	167	< 0.3
11107056	170	< 0.3
11107062	172	< 0.3
11107061	178	0.6
11107063	178	0.5
11107083	180	1.5
11113473	209	< 0.3
11113474	222	< 0.3
11113475	230	< 0.3
11113476	239	< 0.3
11107058	100A	0.5
11107025	100B	0.7
11107049	100C	0.5
11107015	100E	< 0.3
11107059	102B	< 0.3
11107057	102C	< 0.3
11107079	104B	< 0.3
11107046	104D	< 0.3
11107069	122B	0.6
11107070	122D	< 0.3
11107043	164A	< 0.3
11107100	169A	< 0.3
11107080	169B	< 0.3
11107085	169C	0.6
11107068	STAGE	< 0.3

Table 2- Radon Testing Results			
Wayside ES			
Test Period: 02/8/2022 - 02/11/2022			
Kit Number	QC Type	Room / Area	Result
11107061	D	178	0.6
11107084	D	150	< 0.3
11107082	FB	150	< 0.3
11107074	D	128	< 0.3
11107040	D	106	< 0.3
11107077	FB	106	< 0.3
11107089	D	163	< 0.3
11107098	D	127	< 0.3
11107099	FB	127	< 0.3
11113481	OB	OFFICE BLANK	< 0.3
11113483	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:  
**WAYSIDE ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11107018	100	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107058	100A	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107025	100B	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.7 ± 0.3	2022-02-14
11107049	100C	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-15
11107015	100E	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107041	102	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107059	102B	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107057	102C	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11113472	103	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107067	104	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107078	104	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107079	104B	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107046	104D	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11113471	105	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107045	106	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-14
11107040	106	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107077	106	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11113470	107	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107051	112	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107052	112	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-15
11107075	115	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107072	119	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107055	120	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107069	122B	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-14
11107070	122D	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107038	124	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-15
11107097	127	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107098	127	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107099	127	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107071	128	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107074	128	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107096	129	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107095	131	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107094	133	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107023	134	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-14
11107029	135	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-15
11107024	136	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14

Radon test result report for:  
**WAYSIDE ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11107093	137	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107092	139	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107076	140	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107088	141	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107081	146	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107037	150	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107084	150	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107082	150	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107030	152	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107091	155	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-14
11107050	156	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.7 ± 0.3	2022-02-14
11107090	161	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	1.7 ± 0.3	2022-02-14
11107089	163	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107087	163	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107026	164	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107044	164	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	1.0 ± 0.3	2022-02-15
11107043	164A	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107054	166	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107086	167	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107100	169A	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107080	169B	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11107085	169C	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-14
11107056	170	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107062	172	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107061	178	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.6 ± 0.3	2022-02-14
11107063	178	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	0.5 ± 0.3	2022-02-15
11107083	180	2022-02-08 @ 10:00 am	2022-02-11 @ 2:00 pm	1.5 ± 0.3	2022-02-15
11113473	209	2022-02-08 @ 12:00 pm	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11113474	222	2022-02-08 @ 12:00 pm	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11113475	230	2022-02-08 @ 12:00 pm	2022-02-11 @ 2:00 pm	< 0.3	2022-02-14
11113476	239	2022-02-08 @ 12:00 pm	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15
11107068	STAGE	2022-02-08 @ 11:00 am	2022-02-11 @ 2:00 pm	< 0.3	2022-02-15

**EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCI Technologies, Inc. Job Number 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 50.1 % Temp. 70.9 F

Date Start: 2/18/22 Date Stop: 2/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0911 Time Stop: 0911 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) Char Bags -  
11113484, 1112998, 20107126 Device No.'s: \_\_\_\_\_

23 Right

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

**Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)  
Background = 7  $\mu$ R/h Elevation = 820 ft**

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (25.7 pCi/L).

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11113484	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK1		1	27.9
11122998	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK2		1	26.0
20107126	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK3		1	27.6

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Earle. B Wood MS
2. Flower Valley ES
3. Parkland MS
4. Herbert Hoover MS
5. Ritchie Park ES
6. Wayside ES
7. Potomac ES
8. Redland MS
9. Sequoyah ES
10. Sherwood ES
11. Rock Terrace School

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	Date	Initials
Radon Test Kits Deployed	02/08/2022	PM
Radon Test Kits Collected	02/11/2022	PM
Radon Test Kits Shipped to Lab*	02/11/2022	PM
Radon Test Kits Received by Lab*	02/15/2022	PM

\*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759