



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Rosemont Elementary School
Date of Test Report	1/25/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	1
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

Project Status:

1. Post mitigation testing completed.



January 25, 2023

Mr. Brian Croyle
Environmental Specialist
Montgomery County Public Schools
Gaithersburg, MD 20879

Re: **Radon Testing Services**
KCI Job # 122210551

Location: Rosemont Elementary School
16400 Alden Avenue
Gaithersburg, MD 20877

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 Rosemont Elementary School located at 16400 Alden Ave. Gaithersburg, MD 20877 (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.

KCI visited the site on December 19, 2022 and deployed three (3) 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 December 22, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA for analysis by gamma-ray spectroscopy.

Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

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 temperatures ranged from 23°F to 55°F. Maximum sustained winds ranged from 0-18 miles per hour. Average humidity was around 75% with 0.0 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:

Radon Concentration	Room	Result
≥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		
Rosemont ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11633327	109	< 0.3
11633333	109	< 0.3
11633337	109	< 0.3

Table 2- Radon Testing Results			
Rosemont ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11633333	D	109	< 0.3
11633337	FB	109	< 0.3
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Rosemont ES		
Test Period: 12/19/22 - 12/22/22		
Kit Number	Room/Area	Result
	N/A	

Summary of Missing, Compromised and \geq 4 pC/L Tests		
Rosemont ES		
Test Period: 12/19/22 - 12/22/22		
Kit Number	Room/Area	Result
	N/A	

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 28, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633327	109	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11633333	109	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11633337	109	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KC1 TECHNOLOGIES, INC Job Number 208343

NOMINAL Conditions: Radon Conc 34.7 pCi/L Rel. Hum 49.4 % Temp. 69.6 F

Date Start: 12/24/22 Date Stop: 12/27/22 Date Start: _____ Date Stop: _____

Time Start: 0810 Time Stop: 0810 Time Start: _____ Time Stop: _____

Device No.'s: (5) CHAR BAGS - Device No.'s: _____

11285109, 11285110, 11285101

THRU 11285103

BY LEFT

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 μ R/h Elevation = 820 ft**

December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285110	SK1	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	31.7 ± 2.5	2022-12-29
11285101	SK2	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.1 ± 2.4	2022-12-29
11285103	SK3	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	34.0 ± 2.7	2022-12-29
11285102	SK4	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.9 ± 2.5	2022-12-29
11285109	SK5	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	32.0 ± 2.6	2022-12-29

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Week 3 December Schools

Name of Schools:

1. Clopper Mill ES
2. Cold Spring ES
3. Fox Chapel ES
4. Gaithersburg HS
5. Longview School
6. North Lake Center
7. Ronald McNair ES
8. Rosemont ES
9. S. Christa McAuliffe ES
10. Spark M. Matsunaga ES
11. William B. Gibbs, JR. ES

	Date	Initials
Radon Test Kits Deployed	12/19/2022	BMM
Radon Test Kits Collected	12/22/2022	BMM
Radon Test Kits Shipped to Lab*	12/22/2022	BMM
Radon Test Kits Received by Lab*	12/28/2022	BMM

*All samples sent to Air Check, Inc., 2 Saber Way, Ward Hill, MA 01835



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Rosemont Elementary School
Date of Test Report	05/27/2022
Round of Testing	<p>Initial</p> <p><u>Follow-up</u></p> <p>Post Remediation</p> <p>2 Year Testing</p> <p>5 Year Testing</p> <p>HVAC Upgrade</p> <p>Window Replacement</p> <p>New Addition</p> <p>New Facility</p>
# Rooms Tested	1
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.1 pCi/L

Project Status

Current Project Status at this time: Testing completed; no further action needed;

Mitigation needed - Room 109



May 27, 2022

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

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

Location: Rosemont Elementary School
16400 Alden Ave.
Gaithersburg, MD 20877

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 Rosemont Elementary School, located at 16400 Alden Ave. Gaithersburg, MD 20877 (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.

KCI visited the site on March 28, 2022 and deployed three (3) 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.

KCI sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e. ≥ 3.5 pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

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 March 31, 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 initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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 mid 20°Fs and high temperatures ranged from the low 50°Fs to the mid 70°Fs. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 47% with 0.23 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:

Radon Concentration	Room	Result
≥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		
Rosemont ES RT		
Test Period: 03/28/2022 - 03/31/2022		
Kit Number	Room / Area	Result
11139923	110D	< 0.3
11139931	110D	1.1
11139932	110D	0.9

Table 2- Radon Testing Results			
Rosemont ES RT			
Test Period: 03/28/2022 - 03/31/2022			
Kit Number	QC Type	Room / Area	Result
11139931	D	110D	1.1
11139923	FB	110D	< 0.3
11139883	OB	OFFICE BLANK	< 0.3
11139841	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Rosemont ES RT		
Test Period: 03/28/22 - 03/31/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Rosemont ES RT		
Test Period: 03/28/22 - 03/31/22		
Kit Number	Room/Area	Result
	NA	

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

April 4, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139923	110D	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	< 0.3	2022-04-04
11139931	110D	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	1.1 ± 0.3	2022-04-04
11139932	110D	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	0.9 ± 0.3	2022-04-04

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: _____ Date Stop: _____

Time Start: 0705 Time Stop: 0705 Time Start: _____ Time Stop: _____

Device No.'s: (5) Char Bags - Device No.'s: _____

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 light

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 μ R/h Elevation = 820 ft

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139367	SK1	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.9 \pm 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 \pm 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 \pm 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 \pm 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 \pm 2.0	2022-03-30

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Rock Terrace School
2. S. Christa McAuliffe ES
3. Cedar Grove ES
4. DuFief ES
5. Emory Grove Center
6. Gaithersburg ES
7. Gaithersburg MS
8. Jones Lane ES
9. Rachel Carson ES
10. Rosemont ES
11. Shady Grove MS
12. Summit Hall ES
13. Albert Einstein HS
14. Eastern MS
15. Montgomery Blair HS
16. Newport Mill MS
17. Strawberry Knoll ES

	Date	Initials
Radon Test Kits Deployed	03/28/2022	BMM
Radon Test Kits Collected	03/31/2022	BMM
Radon Test Kits Shipped to Lab*	04/01/2022	BMM
Radon Test Kits Received by Lab*	04/04/2022	BMM

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Rosemont Elementary School
Date of Test Report	4/7/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	56
# Rooms \geq 4.0 pCi/L	1
Lowest Value	<0.3 pCi/L
Highest Value	4.3 pCi/L

Project Status:

Initial testing completed; Missing, Elevated, or compromised samples need re-sampling



April 7, 2022

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

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

Location: Rosemont ES
16400 Alden Ave.
Gaithersburg, MD 20877

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 Rosemont ES, located at 16400 Alden Ave. Gaithersburg, MD 20878 (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.

KCI visited the site on February 22, 2022 and deployed sixty five (65) 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.

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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 initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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 20s and high temperatures ranged from the high 30s to the high 40s Fahrenheit. Maximum sustained winds ranged from 5-18 miles per hour. Average humidity was around 15% with 1.5 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:

Radon Concentration	Room	Result
≥4.0 pCi/L	109	4.3
<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		
Rosemont ES		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11114166	101	0.8
11114146	102	< 0.3
11114147	103	1.3
11114122	104	1.6
11114128	105	1.2
11114113	106	1.7
11114120	107	< 0.3
11114114	108	2.5
11114137	109	4.3
11114139	109	4.3
11114104	110	2.3
11114106	110	2.0
11131075	111	1.3
11114129	112	1.4
11131023	113	2.0
11114112	114	1.5
11114130	115	1.9
11114119	116	1.3
11114125	117	2.2
11114132	117	2.4
11114124	118	0.9
11114148	120	0.7
11114163	121	< 0.3
11114172	121	< 0.3
11114159	122	< 0.3
11114110	123	< 0.3
11114149	124	< 0.3
11114141	125	< 0.3
11114140	126	< 0.3
11114133	127	0.9
11114134	128	< 0.3
11114155	212	1.2
11114143	220	< 0.3
11114152	225	< 0.3
11114117	100 MAIN	< 0.3
11114118	100A	< 0.3
11114108	100B	< 0.3
11114115	100C	0.9
11114107	100D	1.3
11114123	100E	< 0.3
11114153	100F PRINCIPAL	< 0.3
11114111	101B	< 0.3
11114144	103A	< 0.3
11114135	103A1	0.9
11114151	103A2	< 0.3

Table 1- Radon Testing Results		
Rosemont ES		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11114142	103A3	1.2
11114127	103A4	0.7
11114116	104B	1.2
11114103	110A	1.4
11114131	110B	1.7
11114101	110C	1.6
11131082	110D	NA
11114102	111A	2.3
11114105	111A	< 0.3
11114138	111A	1.9
11114156	ALL PURPOSE	1.0
11114157	ALL PURPOSE	1.2
11114121	ASSISTANT PRINCIPAL	< 0.3
11114109	GYM	< 0.3
11114145	GYM	< 0.3
11114126	GYM OFFICE	1.1
11114165	GYM OFFICE	< 0.3
11114158	KITCHEN OFFICE	< 0.3
11114136	STAGE	0.6
11114150	STAGE	1.0

Table 2- Radon Testing Results			
Rosemont ES			
Test Period: 02/22/2022 - 02/25/2022			
Kit Number	QC Type	Room / Area	Result
11114139	D	109	4.3
11114102	D	111A	2.3
11114105	FB	111A	< 0.3
11114132	D	117	2.4
11114150	D	Stage	0.6
11114136	FB	Stage	1.0
11114172	D	121	< 0.3
11114126	D	Gym Office	1.1
11114165	FB	Gym Office	< 0.3
11139384	OB	OFFICE BLANK	< 0.3
11131222	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Rosemont ES		
Test Period: 02/22/22 - 02/25/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and ≥ 4 pIC/L Tests		
Rosemont ES		
Test Period: 02/22/22 - 02/25/22		
Kit Number	Room/Area	Result
11114107	110D	Missing

Table Note:
 * Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114117	100 MAIN	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114118	100A	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114108	100B	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114115	100C	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11114107	100D	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	1.3 ± 0.5	2022-03-03
11114123	100E	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114153	100F PRINCIPAL	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114166	101	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	0.8 ± 0.5	2022-03-03
11114111	101B	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114146	102	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114147	103	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.3 ± 0.5	2022-03-03
11114144	103A	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114135	103A1	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11114151	103A2	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114142	103A3	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11114127	103A4	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	0.7 ± 0.5	2022-03-03
11114122	104	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.6 ± 0.5	2022-03-03
11114116	104B	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11114128	105	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11114113	106	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.7 ± 0.5	2022-03-03
11114120	107	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114114	108	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.5 ± 0.6	2022-03-03
11114137	109	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	4.3 ± 0.7	2022-03-03
11114139	109	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	4.3 ± 0.7	2022-03-03
11114104	110	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.3 ± 0.6	2022-03-03
11114106	110	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.0 ± 0.6	2022-03-03
11114103	110A	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.4 ± 0.5	2022-03-03
11114131	110B	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.7 ± 0.5	2022-03-03
11114101	110C	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.6 ± 0.5	2022-03-03
11131075	111	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.3 ± 0.5	2022-03-03
11114102	111A	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.3 ± 0.6	2022-03-03
11114105	111A	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114138	111A	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.9 ± 0.5	2022-03-03
11114129	112	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.4 ± 0.5	2022-03-03
11131023	113	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.0 ± 0.5	2022-03-03
11114112	114	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.5 ± 0.5	2022-03-03
11114130	115	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.9 ± 0.5	2022-03-03

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114119	116	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	1.3 ± 0.5	2022-03-03
11114125	117	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.2 ± 0.5	2022-03-03
11114132	117	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	2.4 ± 0.5	2022-03-03
11114124	118	2022-02-22 @ 1:00 pm	2022-02-25 @ 11:00 am	0.9 ± 0.5	2022-03-03
11114148	120	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	0.7 ± 0.4	2022-03-03
11114172	121	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114163	121	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114159	122	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114110	123	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114149	124	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114141	125	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114140	126	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114133	127	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	0.9 ± 0.5	2022-03-03
11114134	128	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114155	212	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	1.2 ± 0.5	2022-03-03
11114143	220	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114152	225	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114156	ALL PURPOSE	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11114157	ALL PURPOSE	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11114121	ASSISTANT PRINCIPAL	2022-02-22 @ 12:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114145	GYM	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114109	GYM	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114165	GYM OFFICE	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11114126	GYM OFFICE	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	1.1 ± 0.5	2022-03-03
11114158	KITCHEN OFFICE	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11114136	STAGE	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	0.6 ± 0.5	2022-03-03
11114150	STAGE	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03

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 - Device No.'s: _____

11113484, 1112998, 20107126 _____

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 μ 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).

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Dufief ES
2. Emory Grove Center
3. Fields Road ES
4. Forest Oak MS
5. Gaithersburg ES
6. Gaithersburg MS
7. Jones Lane ES
8. Rachel Carson ES
9. Rosemont ES
10. Shady Grove MS
11. Summit Hall ES
12. Washington Grove ES

	Date	Initials
Radon Test Kits Deployed	02/22/2022	PM
Radon Test Kits Collected	02/25/2022	PM
Radon Test Kits Shipped to Lab*	02/25/2022	JM
Radon Test Kits Received by Lab*	02/28/2022	PM

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