



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Kemp Mill Elementary School
Date of Test Report	2/17/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	43
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.2 pCi/L

Project Status:

1. 5-Year retesting completed.



February 17, 2023

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

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

Location: Kemp Mill Elementary School  
411 Sisson Street  
Silver Spring, MD 20902

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 Kemp Mill Elementary School, located at 411 Sisson St. Silver Spring, MD 20902 (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 January 23, 2023 and deployed forty-nine (49) 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 January 26, 2023 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 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 temperatures ranged from the 31°F to 52°F. Maximum sustained winds ranged from 5-25 miles per hour. Average humidity was around 60% with .32 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		
Kemp Mill ES		
Test Period: 01/23/2023 - 01/26/2023		
Kit Number	Room / Area	Result
11634927	100	1.0
11634928	101	< 0.3
11634933	102	0.8
11634934	103	0.7
11634931	104	< 0.3
11634935	104	< 0.3
11634945	105	< 0.3
11634940	106	0.7
11634937	107	1.0
11634946	108	< 0.3
11634913	109	2.2
11634920	110	1.1
11634919	111	1.1
11634914	112	0.8
11634925	113	< 0.3
11634915	114	0.6
11634921	114	0.7
11634916	115	1.1
11634923	116	1.1
11634924	117	1.1
11634938	118	1.3
11634970	201	0.9
11634969	206	< 0.3
11634936	309	2.2
11634932	104A	0.5
11634911	AMAYA/CLARY	0.7
11634961	AP	0.7
11634926	APR	< 0.3
11634948	APR	1.3
11634954	APR	1.2
11634955	APR	1.1
11634963	BSM	0.7
11634964	CONFERENCE	1.6
11634909	GYM	1.4
11634953	GYM	1.7
11634917	GYM OFFICE	1.7
11634922	HEALTH ROOM	< 0.3
11634930	HEALTH ROOM OFFICE	1.0
11634903	HERRAN	2.1
11634905	HERRAN	1.7
11634947	KITCHEN OFFICE	0.7
11634929	MAIN OFFICE	0.8



Table 1- Radon Testing Results		
Kemp Mill ES		
Test Period: 01/23/2023 - 01/26/2023		
Kit Number	Room / Area	Result
11634904	MC	1.6
11634939	MC	1.9
11634912	PRINCIPAL	1.8
11634906	SMOOT	< 0.3
11634908	SMOOT	1.4
11634907	SPECIAL ED	1.3
11634910	STAFF LOUNGE	2.0

Table 2- Radon Testing Results			
Kemp Mill ES			
Test Period: 01/23/23 - 01/26/23			
Kit Number	QC Type	Room / Area	Result
11634931	D	104	< 0.3
11634915	D	114	0.6
11634926	FB	APR	< 0.3
11634955	D	APR	1.1
11634905	D	Herran	1.7
11634906	FB	Smoot	< 0.3
11633990	OB	OFFICE BLANK	< 0.3
11633992	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:**KEMP MILL ES****1**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634927	100	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.0 ± 0.3	2023-01-30
11634928	101	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634933	102	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.8 ± 0.3	2023-01-30
11634934	103	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634935	104	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634931	104	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634932	104A	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.5 ± 0.3	2023-01-30
11634945	105	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634940	106	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634937	107	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.0 ± 0.3	2023-01-30
11634946	108	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634913	109	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	2.2 ± 0.4	2023-01-30
11634920	110	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634919	111	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634914	112	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	0.8 ± 0.3	2023-01-30
11634925	113	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634915	114	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	0.6 ± 0.3	2023-01-30
11634921	114	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634916	115	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634923	116	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634924	117	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634938	118	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.3 ± 0.3	2023-01-30
11634970	201	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.9 ± 0.3	2023-01-30
11634969	206	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634936	309	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	2.2 ± 0.4	2023-01-30
11634911	AMAYA/CLARY	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634961	AP	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634926	APR	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634955	APR	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.1 ± 0.3	2023-01-30
11634954	APR	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.2 ± 0.3	2023-01-30
11634948	APR	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.3 ± 0.3	2023-01-30
11634963	BSM	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634964	CONFERENCE	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.6 ± 0.3	2023-01-30
11634909	GYM	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.4 ± 0.3	2023-01-30
11634953	GYM	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.7 ± 0.4	2023-01-30
11634917	GYM OFFICE	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.7 ± 0.4	2023-01-30
11634922	HEALTH ROOM	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30

Radon test result report for:

**KEMP MILL ES**

**1**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634930	HEALTH ROOM OFFICE	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.0 ± 0.3	2023-01-30
11634903	HERRAN	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	2.1 ± 0.4	2023-01-30
11634905	HERRAN	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.7 ± 0.4	2023-01-30
11634947	KITCHEN OFFICE	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	0.7 ± 0.3	2023-01-30
11634929	MAIN OFFICE	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	0.8 ± 0.3	2023-01-30
11634904	MC	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.6 ± 0.4	2023-01-30
11634939	MC	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.9 ± 0.4	2023-01-30
11634912	PRINCIPAL	2023-01-23 @ 1:00 pm	2023-01-26 @ 3:00 pm	1.8 ± 0.4	2023-01-30
11634906	SMOOT	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	< 0.3	2023-01-30
11634908	SMOOT	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.4 ± 0.3	2023-01-30
11634907	SPECIAL ED	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	1.3 ± 0.3	2023-01-30
11634910	STAFF LOUNGE	2023-01-23 @ 2:00 pm	2023-01-26 @ 3:00 pm	2.0 ± 0.4	2023-01-30

# 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  $\mu$ R/h Elevation = 820 ft

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December 29, 2022

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**OFFICE**

**MAIN**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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

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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 2 January Schools

Name of Schools:

1. Glen Haven ES
2. Kemp Mill ES
3. John F. Kennedy HS
4. Oakland Terrace ES
5. Odessa Shannon MS
6. JoAnn Leleck ES @ Broad Acres
7. New Hampshire Estates ES
8. Cannon Road ES
9. Galway ES
- 10.A. Mario Loiederman MS

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	Date	Initials
Radon Test Kits Deployed	01/23/2023	BMM
Radon Test Kits Collected	01/26/2023	BMM
Radon Test Kits Shipped to Lab*	01/26/2023	BMM
Radon Test Kits Received by Lab*	01/31/2023	BMM

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Kemp Mill Elementary School**  
411 Sisson Street  
Silver Spring, MD 20902

Date of Test Report:	12/18/2018
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing <b>5 Year Testing</b> HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	54
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	3.8

### Project Status

**Initial testing complete:** No further action at this time



December 18, 2018

Mr. Richard Cox  
Indoor Air Quality Team Leader  
Montgomery County Public Schools  
850 Hungerford Drive  
Rockville, MD 20850

Re: Radon Testing Services

Location: Kemp Mill Elementary School  
411 Sisson Street  
Silver Spring, MD 20902

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Kemp Mill Elementary School, located at 411 Sisson Street, Silver Spring, MD 20902 (subject site).

**Scope of Services:**

PSI 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. PSI 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 Safety Board (NRSB) Radon Measurement Specialist (certification #14SS007) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on November 13, 2018 and deployed sixty-eight (68) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on November 16, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, PSI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, PSI submitted ten (10) test kits to Bowser-Morner Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner Inc. prior to being returned to the laboratory for analysis.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARL0007) and 2 Saber Way, Haverhill, Massachusetts (certification # ARL0017).



### **Evaluation of Testing Conditions:**

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages  $\leq 65^{\circ}\text{F}$ .

PSI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

PSI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. PSI recorded observations of the following conditions in each room at 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.

### **Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	None	NA
$\leq 4.0$ pCi/L	See Attachment B	

Notes:

D -Duplicate Sample

The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C).

Laboratory results and exposure data for the spike samples are also included in Attachment C. 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 (703) 698-9300.



Respectfully Submitted,

**INTERTEK-PSI**

A handwritten signature in black ink that reads "Nand Kaushik". The signature is written in a cursive, flowing style.

Nand Kaushik, P.E.  
Department Manager, Environmental Services  
[Nand.Kaushik@intertek.com](mailto:Nand.Kaushik@intertek.com)

Attachments:           A – Floor Plan with Test Locations  
                              B – Table 1 – Radon Test Summary Spreadsheet  
                              C – Laboratory Analytical Results

# **ATTACHMENT B**

Radon Test Summary Spreadsheet

<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Testing period: 11/13/18 - 11/16/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3917186	100	1.2
3917127	101	0.4
3917189	102	0.9
3917190	102	1.0
3916382	103	0.7
3916381	104	0.6
3917187	104A	0.9
3916948	105	0.4
3917064	106	1.0
3916398	107	1.1
3916399	108	< 0.4
3916438	109	2.1
3916439	110	1.2
3916437	112	< 0.4
3916436	113	0.5
3916435	114	2.2
3916434	115	1.4
3916433	116	0.7
3916390	117	0.8
3916432	118	1.0
3917007	200	1.9
3917191	201	1.2
3917195	202	0.8
3917126	203	1.0
3917130	204	0.8
3917183	205	< 0.4
3917128	206	0.6
3917125	207	< 0.4
3917133	208	< 0.4
3917199	209	< 0.4
3917185	210	0.6
3917200	211	0.4
3917181	212	0.6
3917194	213	0.4
3917198	214	0.4
3917193	215	< 0.4
3917196	216	0.5
3917197	217	0.5
3917192	218	0.8
3916942	300	3.8
3916384	309	1.7
3916385	309	1.8
3916949	APR	1.1

<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Testing period: 11/13/18 - 11/16/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3916950	APR	1.2
3916392	Conference	1.5
3881258	Gym	2.4
3881261	Gym	2.4
3917006	Gym Office	3.0
3916396	Health	0.8
3916397	Health Office	0.9
3916386	IMC	2.5
3916387	IMC	2.2
3916388	IMC Workroom	2.3
3916389	IMC Office	2.3
3917121	Kitchen	0.6
3916395	Main Office	0.9
3916394	Main Office Workroom	1.4
3916391	Principal	2.1
3916393	Vice Principal	0.5



<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Testing period: 11/13/18 - 11/16/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result (pCi/L)</b>
3917188	100 (D)	1.2
3916383	103 (D)	0.7
3916440	110 (D)	1.5
3916431	117 (D)	0.9
3916944	210 (D)	0.6
3917134	Field Blank	< 0.4
3916517	Field Blank	< 0.4
3917819	Office Blank	< 0.4
3918818	Transit Blank	< 0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

# **ATTACHMENT C**

Laboratory Analytical Results

NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195855	3917197	11/13/2018 4:40 pm	11/16/2018 11:20 am	Floor Second Room 217	0.5
3195856	3917192	11/13/2018 4:41 pm	11/16/2018 11:21 am	Floor Second Room 218	0.8
3195857	3917193	11/13/2018 4:43 pm	11/16/2018 11:22 am	Floor Second Room 215	< 0.4
3195858	3917196	11/13/2018 4:44 pm	11/16/2018 11:23 am	Floor Second Room 216	0.5
3195859	3917194	11/13/2018 4:46 pm	11/16/2018 11:24 am	Floor Second Room 213	0.4
3195860	3917198	11/13/2018 4:46 pm	11/16/2018 11:25 am	Floor Second Room 214	0.4
3195861	3917200	11/13/2018 4:47 pm	11/16/2018 11:26 am	Floor Second Room 211	0.4
3195862	3917181	11/13/2018 4:48 pm	11/16/2018 11:27 am	Floor Second Room 212	0.6
3195863	3917185	11/13/2018 4:49 pm	11/16/2018 11:29 am	Floor Second Room 210	0.6
3195864	3916944	11/13/2018 4:49 pm	11/16/2018 11:29 am	Floor Second Room 210 Duplicate	0.6

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195865	3917199	11/13/2018 4:50 pm	11/16/2018 11:30 am	Floor Second Room 209	< 0.4
3195866	3917125	11/13/2018 4:51 pm	11/16/2018 11:31 am	Floor Second Room 207	< 0.4
3195867	3917133	11/13/2018 4:52 pm	11/16/2018 11:32 am	Floor Second Room 208	< 0.4
3195868	3917183	11/13/2018 4:53 pm	11/16/2018 11:33 am	Floor Second Room 205	< 0.4
3195869	3917134	11/13/2018 6:00 am	11/16/2018 12:23 pm	Floor N/A Field Blank	< 0.4
3195870	3917128	11/13/2018 4:55 pm	11/16/2018 11:34 am	Floor Second Room 206	0.6
3195871	3917130	11/13/2018 4:56 pm	11/16/2018 11:35 am	Floor Second Room 204	0.8
3195872	3917126	11/13/2018 4:58 pm	11/16/2018 11:36 am	Floor Second Room 203	1.0
3195873	3917195	11/13/2018 4:59 pm	11/16/2018 11:37 am	Floor Second Room 202	0.8
3195874	3917191	11/13/2018 5:00 pm	11/16/2018 11:38 am	Floor Second Room 201	1.2

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195875	3917007	11/13/2018 5:05 pm	11/16/2018 11:39 am	Floor Second Room 200	1.9
3195876	3917121	11/13/2018 5:14 pm	11/16/2018 11:40 am	First Floor Room Kitchen	0.6
3195877	3916949	11/13/2018 5:16 pm	11/16/2018 11:41 am	First Floor All Purpose Room	1.1
3195878	3916950	11/13/2018 5:19 pm	11/16/2018 11:42 am	First Floor All Purpose Room	1.2
3195879	3917006	11/13/2018 5:22 pm	11/16/2018 11:43 am	First Floor Room PE Office	3.0
3195880	3916942	11/13/2018 5:26 pm	11/16/2018 11:46 am	First Floor Room 300	3.8
3195881	3917186	11/13/2018 5:31 pm	11/16/2018 11:47 am	First Floor Room 100	1.2
3195882	3917188	11/13/2018 5:31 pm	11/16/2018 11:47 am	First Floor Room 100 Duplicate	1.2
3195883	3917127	11/13/2018 5:32 pm	11/16/2018 11:49 am	First Floor Room 100	0.4
3195884	3917189	11/13/2018 5:34 pm	11/16/2018 11:50 am	First Floor Room 102	0.9

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195885	3917190	11/13/2018 5:34 pm	11/16/2018 11:50 am	First Floor Room 102	1.0
3195886	3917187	11/13/2018 5:37 pm	11/16/2018 11:52 am	First Floor Room 104A	0.9
3195887	3916948	11/13/2018 5:39 pm	11/16/2018 11:53 am	First Floor Room 105	0.4
3195888	3917064	11/13/2018 5:41 pm	11/16/2018 11:54 am	First Floor Room 106	1.0
3195889	3916381	11/13/2018 5:42 pm	11/16/2018 11:55 am	First Floor Room 104	0.6
3195890	3916382	11/13/2018 5:43 pm	11/16/2018 11:56 am	First Floor Room 103	0.7
3195891	3916383	11/13/2018 5:43 pm	11/16/2018 11:56 am	First Floor Room 103 Duplicate	0.7
3195892	3916384	11/13/2018 5:48 pm	11/16/2018 11:58 am	First Floor Room 309	1.7
3195893	3916385	11/13/2018 5:49 pm	11/16/2018 11:59 am	First Floor Room 309	1.8
3195894	3916386	11/13/2018 5:51 pm	11/16/2018 12:00 pm	First Floor Room Media Center (MC)	2.5

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

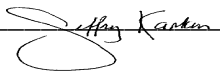
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195895	3916387	11/13/2018 5:52 pm	11/16/2018 12:01 pm	First Floor Room Media Center	2.2
3195896	3916388	11/13/2018 5:54 pm	11/16/2018 12:02 pm	First Floor MC Work Room	2.3
3195897	3916389	11/13/2018 5:55 pm	11/16/2018 12:03 pm	First Floor MC Work Room	2.3
3195898	3916390	11/13/2018 5:59 pm	11/16/2018 12:04 pm	First Floor Room 117	0.8
3195899	3916431	11/13/2018 5:59 pm	11/16/2018 12:04 pm	First Floor Room 117 Duplicate	0.9
3195900	3916432	11/13/2018 6:00 pm	11/16/2018 12:06 pm	First Floor Room 118	1.0
3195901	3916433	11/13/2018 6:01 pm	11/16/2018 12:07 pm	First Floor Room 116	0.7
3195902	3916434	11/13/2018 6:02 pm	11/16/2018 12:08 pm	First Floor Room 115	1.4
3195903	3916435	11/13/2018 6:03 pm	11/16/2018 12:09 pm	First Floor Room 114	2.2
3195904	3916436	11/13/2018 6:05 pm	11/16/2018 12:10 pm	First Floor Room 113	0.5

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195905	3916437	11/13/2018 6:06 pm	11/16/2018 12:11 pm	First Floor Room 112	< 0.4
3195906	3916438	11/13/2018 6:07 pm	11/16/2018 12:12 pm	First Floor Room 109	2.1
3195907	3916439	11/13/2018 6:09 pm	11/16/2018 12:14 pm	First Floor Room 110	1.2
3195908	3916440	11/13/2018 6:09 pm	11/16/2018 12:14 pm	First Floor Room 110 Duplicate	1.5
3195909	3916391	11/13/2018 6:12 pm	11/16/2018 12:15 pm	First Floor Room Principal Office	2.1
3195910	3916392	11/13/2018 6:13 pm	11/16/2018 12:16 pm	First Floor Conference Room	1.5
3195911	3916393	11/13/2018 6:14 pm	11/16/2018 12:17 pm	First Floor Room V Principal Office	0.5
3195912	3916394	11/13/2018 6:15 pm	11/16/2018 12:18 pm	First Floor Work Room	1.4
3195913	3916395	11/13/2018 6:15 pm	11/16/2018 12:19 pm	First Floor Main Office	0.9
3195914	3916396	11/13/2018 6:16 pm	11/16/2018 12:20 pm	First Floor Health Room	0.8

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested: Project # 04481387.-

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey Kemp Mill ES  
411 Sisson St  
Silver Spring MD 20902

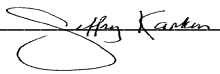
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3195915	3916397	11/13/2018 6:18 pm	11/16/2018 12:21 pm	First Floor Room Health Office	0.9
3195916	3916398	11/13/2018 6:19 pm	11/16/2018 12:22 pm	First Floor Room 107	1.1
3195917	3916399	11/13/2018 6:20 pm	11/16/2018 12:23 pm	First Floor Room 108	< 0.4
3195918	3916517	11/13/2018 6:00 pm	11/16/2018 12:23 pm	Floor N/A Field Blank	< 0.4
3195919	3917819	11/13/2018 4:40 pm	11/16/2018 4:00 pm	Not Indicated	< 0.4
3195920	3918818	11/13/2018 4:40 pm	11/16/2018 4:00 pm	Not Indicated	< 0.4

**Comment:** A copy of this report was e-mailed to PSI - VA.

Test Performed By: Not Indicated

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 11/28/2018

Report Reviewed By: 

Report Approved By: 

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

EPA Method #402-R-92-004  
Liquid Scintillation  
NRPP Device Code 8088  
NRSB Device Code 12193

Laboratory Report for:

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

Property Tested: Project # 04481387-1


MCPS Radon Survey  
411 Sisson St.  
Kemp Mill  
Silver Spring MD 20902


Log Number	Device Number	Test Date	Exposure Duration	Area Tested	Result pCi/L
2393048	3881258	11/13/2018	5:23 pm - 11:16/2018 11:44 am	Floor First Room Gym	2.4
2393049	3881261	11/13/2018	5:24 pm - 11/16/2018 11:45 am	Floor First Room Gym	2.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/19/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL  
NRSB ARL0007  
Ohio RL41

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey  
4514 Taylorsville Road  
Dayton OH 45424

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.8
3204129	3926835	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.0
3204130	3926836	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.5
3204131	3926837	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.6
3204132	3926838	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.3
3204133	3926839	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.2
3204134	3926840	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.0

**Comment:** A copy of this report was e-mailed to Intertek-PSI (VA)

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

Date Received: 12/12/2018    Date Logged: 12/12/2018    Date Analyzed: 12/12/2018    Date Reported: 12/13/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI Job Number 187732

NOMINAL Conditions: Radon Conc 32.6 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/7/18 Date Stop: 12/10/18 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0947 Time Stop: 0947 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (10) Char. Cans- Device No.'s: \_\_\_\_\_

3926831 thru 3926840 \_\_\_\_\_

G2 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  $\mu$ R/h Elevation = 820 ft**



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

- |                     |                      |                    |
|---------------------|----------------------|--------------------|
| 1. Highland View ES | 6. EB Lee MS         | 11. Cannon Rd ES   |
| 2. Kemp Mill ES     | 7. Forest Knolls ES  | 12. Cloverly ES    |
| 3. Sligo Creek ES   | 8. Galway ES         | 13. Springbrook HS |
| 4. Highland ES      | 9. Wheaton HS        |                    |
| 5. Kennedy HS       | 10. Briggs Chaney MS |                    |

---

	Date	Initials
Radon Test Kits Deployed	11/13/2018	NL
Radon Test Kits Sampled	11/16/2018	NL
Radon Test Kits Shipped to Lab*	11/16/2018	NL
Radon Test Kits Received by Lab*	11/17/2018; 11/18/2018; 11/20/2018	NL

\*All samples sent to AccuStar Laboratories, 929 Mount Zion Road, Lebanon, PA 17046 and 2 Saber Way, Haverhill, MA 01835



### MCPS RADON TESTING

Executive Summary: Kemp Mill Elementary School

Date of Test Report:	2/16/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	51
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.8

Project Status:

Initial testing completed; missing or compromised samples need re-test.



February 16, 2016

Mr. Richard Cox  
Indoor Air Quality Team Leader  
Montgomery County Public Schools  
850 Hungerford Drive  
Rockville, MD 20850

Re: **Radon Testing Services**  
KCI Job # 12146341.25

Location: Kemp Mill Elementary School  
411 Sisson Street  
Silver Spring, MD 20902

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Kemp Mill Elementary School, located at 411 Sisson Street in Silver Spring, Maryland 20902 (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 Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on January 19, 2016 and deployed sixty-three (63) activated charcoal (AC) radon test kits. KCI deployed radon test kits in 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 included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) 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 January 22, 2016 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:**

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages  $\leq 65^{\circ}$  F.

KCI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. KCI recorded observations of the following conditions in each room at 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.

**Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	none	n/a
$< 4.0$ pCi/L	See Attachment B	

Notes:  
D- Duplicate sample

All field blanks, office blank, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

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) 316-7800.

Sincerely,



James M. Mouldale  
Radon Measurement Specialist  
KCI Technologies, Inc.

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7727282	100	< 0.3
7727280	101	0.8
7727284	102	0.8
7727285	103	0.7
7727286	104	0.5
7727288	105	0.7
7727290	106	< 0.3
7727291	107	0.5
7727292	108	0.7
7726905	109	1.9
7726906	110	0.6
7726907	111	0.6
7727297	112	< 0.3
7727298	113	0.9
7727299	114	1.3
7727300	115	1.2
7726901	116	0.8
7726904	117	1.2
7726902	118	1.1
7727275	200	1.9
7727274	201	1
7727270	202	< 0.3
7727269	203	< 0.3
7727268	205	< 0.3
7727267	207	0.6
7727258	208	< 0.3
7727265	209	< 0.3
7727264	211	< 0.3
7727263	213	< 0.3
7727262	215	< 0.3
7727259	217	< 0.3
7727256	218	< 0.3
7727283	309	1.2
7727287	104A	0.9
7727281	309A	1.7
7727277	ALL PRPS ROOM	0.9
7727276	ALL PRPS ROOM-STG	0.7
7726908	AP OFFICE	< 0.3
7726909	CONF ROOM	1
7727271	GYM OFFICE	1.1
7727272	GYM-EAST	1.4
7727273	GYM-WEST	1.8
7726912	HEALTH ROOM	< 0.3
7726914	MAIN OFFICE	< 0.3
7727295	MEDIA CENTER-BK	1.8
7727296	MEDIA CENTER-DR	1.7

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7727293	MEDIA CNT OFF2	1.2
7727294	MEDIA CNTR OFF	1.7
7726911	NURSE OFFICE	< 0.3
7727261	* PORT 1 (missing)	0
7727260	PORT 2	< 0.3
7727257	PORT 3	< 0.3
7726910	PRINCIPLES OFF	1.5
7727278	STAFF LOUNGE	2.8

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Kemp Mill Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7727279	* D (100:tampered)	< 0.3
7727289	D (106)	0.6
7726903	D (117)	1.6
7727266	D (207)	< 0.3
7727255	D (208)	< 0.3
7726915	D (MAIN OFFICE)	< 0.3
7727254	FB (208)	< 0.3
7726913	FB (MAIN OFFICE)	< 0.3
7727253	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample



# ATTACHMENT C

## Laboratory Analytical Results

February 11, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**KEMP MILL ELEMENTARY SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7727253	0	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7727279	100	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727282	100	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727280	101	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-26
7727284	102	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-27
7727285	103	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.7 ± 0.3	2016-01-26
7727286	104	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.5 ± 0.3	2016-01-26
7727287	104A	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.9 ± 0.3	2016-01-26
7727288	105	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.7 ± 0.3	2016-01-26
7727289	106	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-27
7727290	106	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727291	107	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.5 ± 0.3	2016-01-26
7727292	108	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.7 ± 0.3	2016-01-27
7726905	109	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	1.9 ± 0.4	2016-01-26
7726906	110	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7726907	111	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7727297	112	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727298	113	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.9 ± 0.3	2016-01-26
7727299	114	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.3 ± 0.3	2016-01-26
7727300	115	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.2 ± 0.3	2016-01-26
7726901	116	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-26
7726903	117	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.6 ± 0.3	2016-01-26
7726904	117	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.2 ± 0.3	2016-01-26
7726902	118	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.1 ± 0.3	2016-01-26
7727275	200	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	1.9 ± 0.4	2016-01-27
7727274	201	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	1.0 ± 0.3	2016-01-26
7727270	202	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727269	203	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727268	205	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727267	207	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7727266	207	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727255	208	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727258	208	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727254	208	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727265	209	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727264	211	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727263	213	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27

February 11, 2016  
**LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:  
**KEMP MILL ELEMENTARY SCHOOL  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7727262	215	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727259	217	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727256	218	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727283	309	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.2 ± 0.4	2016-01-27
7727281	309A	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.7 ± 0.4	2016-01-27
7727276	ALL PRPS RM STG	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	0.7 ± 0.3	2016-01-26
7727277	ALL PRPS ROOM	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	0.9 ± 0.3	2016-01-26
7726908	AP OFFICE	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7726909	CONF ROOM	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	1.0 ± 0.4	2016-01-27
7727272	GYM EAST	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	1.4 ± 0.4	2016-01-26
7727271	GYM OFFICE	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	1.1 ± 0.3	2016-01-26
7727273	GYM WEST	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	1.8 ± 0.4	2016-01-26
7726912	HEALTH ROOM	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7726914	MAIN OFFICE	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7726913	MAIN OFFICE	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7726915	MAIN OFFICE	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727295	MEDIA CENTER BK	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.8 ± 0.4	2016-01-27
7727296	MEDIA CENTER DR	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.7 ± 0.4	2016-01-26
7727293	MEDIA CNT OFF2	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.2 ± 0.4	2016-01-27
7727294	MEDIA CNTR OFF	2016-01-19 @ 1:00 pm	2016-01-22 @ 9:00 am	1.7 ± 0.4	2016-01-27
7726911	NURSE OFFICE	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7727261	PORT 1	@	@		
7727260	PORT 2	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7727257	PORT 3	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7726910	PRINCIPLES OFF	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	1.5 ± 0.3	2016-01-26
7727278	STAFF LOUNGE	2016-01-19 @ 2:00 pm	2016-01-22 @ 9:00 am	2.8 ± 0.5	2016-01-27

February  
2,  
2016

**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**MCPS PHASE 5 & 6  
TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722194	1	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718494	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718475	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718495	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718496	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718497	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718498	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718499	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718500	17	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718296	18	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718295	19	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722195	2	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716789	20	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716785	21	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7716791	22	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716786	23	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716793	24	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718274	25	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716792	26	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718294	27	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718293	28	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718292	29	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722197	3	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718290	30	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722198	4	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722199	5	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722211	6	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718491	7	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718476	8	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718479	9	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27

February  
15,  
2016

**\*\* LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7718273	101A	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04
7718281	102B	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.4 ± 0.6	2016-02-04
7718282	103C	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.3 ± 0.6	2016-02-04
7718288	104D	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.7 ± 0.6	2016-02-04
7718289	105E	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.6 ± 0.6	2016-02-04
7718291	106F	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04

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

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

**EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCF Technologies Inc. Job Number 173704

NOMINAL Conditions: Radon Conc 5.9 pCi/L Rel. Hum 45.9 % Temp. 79.0 F

Date Start: 1/30/16 Date Stop: 2/1/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0926 Time Stop: 0926 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (6) Char. Bags - Device No.'s: \_\_\_\_\_

7718281, 7718282, 7718291, \_\_\_\_\_

7718288, 7718289, 7718273 \_\_\_\_\_

ε3 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 μR/h Elevation = 820 ft**



### Chain of Custody

Project Name: MCPS Radon Phase VI

Name of Schools:

- |                          |                              |                           |
|--------------------------|------------------------------|---------------------------|
| 1. Francis Scott Key MS  | 12. Little Bennett ES        | 23. Rolling Terrace ES    |
| 2. Gaithersburg ES       | 13. Loiderman MS             | 24. Roscoe Nix ES         |
| 3. Gaithersburg MS       | 14. Longview ES              | 25. Sally K. Ride ES      |
| 4. Galway ES             | 15. Meadow Hall ES           | 26. Spark Matsunaga ES    |
| 5. Great Seneca Creek ES | 16. Neelsville MS            | 27. Tacoma Park ES        |
| 6. Harmony Hills ES      | 17. New Hampshire Estates ES | 28. Thomas Pyle MS        |
| 7. John Poole MS         | 18. North Bethesda MS        | 29. Wayside ES            |
| 8. Judith A. Resnik ES   | 19. Northwest HS             | 30. Westbrook ES (retest) |
| 9. Kemp Mill ES          | 20. Pine Crest ES            | 31. Westland MS (retest)  |
| 10. Kingsview MS         | 21. Radnor Center            | 32. William B. Gibbs ES   |
| 11. Lakelands Park MS    | 22. Ritchie Park ES          | 33. William Tyler Page ES |

	Date	Initials
Radon Test Kits Deployed	1/19/16	JM
Radon Test Kits Sampled	1/22/16	JM
Radon Test Kits Shipped to Lab*	1/22/16	JM
Radon Test Kits Received by Lab*	1/26/16	JM

\*All samples sent to Air Check, Inc., 1936 Butler Bridge Road, Mills River, NC 28758

M. A. CECIL & ASSOCIATES, INC.

4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710  
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

August 12, 2013

Mr. Sean Yarup  
Montgomery County Public Schools  
16651 Crabbs Branch Way  
Rockville, Maryland 20855

Re: Radon Evaluation- Kemp Mill Elementary School

Dear Mr. Yarup:

Environmental radon testing has been completed at Kemp Mill Elementary School.

Eighteen charcoal canisters were placed in various rooms throughout the school. The canisters were placed on July 17, 2013 and retrieved on July 19, 2013. The detected radon concentrations were below the EPA recommended level of 4.0 pico curies per liter (pCi/l) of air. The test locations and results are summarized in the attached table.

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,



Michael A. Cecil, CIH



**Kemp Mill Elementary School  
Environmental Radon Results  
July 17 to 19, 2013**

Location	Detected Radon Concentration (pCi/l)
Computer Lab	2.7
Room 112	1.1
Room 101	<0.5
Staff Lounge	3.4
Room 116	1.2
Room 100	<0.5
Room 103	<0.5
Room 114	1.2
Main Office	1.0
Room 104	<0.5
Gym	<0.5
Room 102	1.2
Room 117	1.5
APR	0.7
Room 113	0.6
IMC	0.9
IMC-(QC duplicate)	<0.5
Linkages	0.7