



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Stephen Knolls School
Date of Test Report	2/16/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	48
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.4 pCi/L

Project Status:

1. 5-Year retesting completed.



February 16, 2023

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

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

Location: Stephen Knolls School
10731 St. Margaret's Way
Kensington, MD 20895

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 Stephen Knolls School, located at 10731 St. Margaret's Way Kensington, MD 20895 (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 January 10, 2023 and deployed fifty-three (53) 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 13, 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 26°F to the mid 56°F. Maximum sustained winds ranged from 0-21 miles per hour. Average humidity was around 68% with .09 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		
Stephen Knolls School		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11288584	A2	0.8
11287804	A5	0.9
11287890	A7	0.6
11287688	A8	0.6
11287879	A8	< 0.3
11288698	A9	0.6
11288565	APR	0.7
11287684	B1	1.2
11288583	B2	0.7
11287668	B3	< 0.3
11287693	B3	0.7
11288577	B4	1.6
11288579	B5	0.8
11288580	B6	< 0.3
11288585	B7	< 0.3
11288586	B8	< 0.3
11287831	BUILDING SERVICES	1.6
11288552	C1	0.7
11287894	C2	0.7
11288572	C2	< 0.3
11288578	C3	< 0.3
11288569	C4	0.9
11288550	CONFERENCE ROOM	< 0.3
11287677	D1	< 0.3
11288570	D10	1.4
11288571	D11	1.3
11288546	D2	1.6
11287884	D3	2.0
11288564	D4	1.5
11287803	D5	< 0.3
11288563	D5	1.3
11287886	D6	2.0
11288532	D6	2.4
11288551	D9	1.0
11287891	GYM OFFICE	< 0.3
11288531	GYM OFFICE	0.8
11288545	HEALTH	< 0.3
11288562	IMC	0.7
11288561	IMC WORKROOM	0.8
11287689	KITCHEN OFFICE	1.4
11288699	MAIN OFFICE	0.6
11287681	NURSE	< 0.3

Table 1- Radon Testing Results		
Stephen Knolls School		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11287892	OFFICE 1	< 0.3
11288680	OFFICE 1	< 0.3
11287893	OFFICE 2	< 0.3
11288555	OFFICE 3	< 0.3
11288557	OFFICE 4	0.7
11288558	OFFICE 5	< 0.3
11288556	OFFICE3	< 0.3
11287889	PRINCIPAL	< 0.3
11288554	SR	< 0.3
11287880	VISION OFF	< 0.3
11288688	WORKROOM	< 0.3

Table 2- Radon Testing Results			
Stephen Knolls School			
Test Period: 01/10/23 - 01/13/23			
Kit Number	QC Type	Room / Area	Result
11287879	D	A8	< 0.3
11287668	FB	B3	< 0.3
11288572	D	C2	< 0.3
11287803	FB	D5	< 0.3
11288532	D	D6	2.4
11285162	OB	OFFICE BLANK	< 0.3
11284899	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Stephen Knolls School		
Test Period: 01/10/23 - 01/13/23		
Kit Number	Room/Area	Result
	N/A	

Summary of Missing, Compromised and >= 4 piC/L Tests		
Stephen Knolls School		
Test Period: 01/10/23 - 01/13/23		
Kit Number	Room/Area	Result
	N/A	

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
STEPHEN KNOLLS SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288584	A2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11287804	A5	2023-01-10 @ 9:00 am	2023-01-13 @ 12:00 pm	0.9 ± 0.3	2023-01-16
11287890	A7	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	0.6 ± 0.3	2023-01-16
11287879	A8	2023-01-10 @ 9:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11287688	A8	2023-01-10 @ 9:00 am	2023-01-13 @ 12:00 pm	0.6 ± 0.3	2023-01-16
11288698	A9	2023-01-10 @ 9:00 am	2023-01-13 @ 12:00 pm	0.6 ± 0.3	2023-01-16
11288565	APR	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11287684	B1	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.2 ± 0.3	2023-01-16
11288583	B2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11287693	B3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11287668	B3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288577	B4	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.6 ± 0.3	2023-01-16
11288579	B5	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11288580	B6	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288585	B7	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288586	B8	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11287831	BUILDING SERVICES	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.6 ± 0.3	2023-01-16
11288552	C1	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11287894	C2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11288572	C2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288578	C3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288569	C4	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.9 ± 0.3	2023-01-16
11288550	CONFERENCE ROOM	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16
11287677	D1	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288570	D10	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.4 ± 0.3	2023-01-16
11288571	D11	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.3 ± 0.3	2023-01-16
11288546	D2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.6 ± 0.3	2023-01-16
11287884	D3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	2.0 ± 0.4	2023-01-16
11288564	D4	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.5 ± 0.3	2023-01-16
11288563	D5	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.3 ± 0.3	2023-01-16
11287803	D5	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288532	D6	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	2.4 ± 0.3	2023-01-16
11287886	D6	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	2.0 ± 0.3	2023-01-16
11288551	D9	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.0 ± 0.3	2023-01-16
11288531	GYM OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11287891	GYM OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288545	HEALTH	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16

Radon test result report for:
STEPHEN KNOLLS SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288562	IMC	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11288561	IMC WORKROOM	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11287689	KITCHEN OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	1.4 ± 0.3	2023-01-16
11288699	MAIN OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	0.6 ± 0.3	2023-01-16
11287681	NURSE	2023-01-10 @ 9:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11287892	OFFICE 1	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288680	OFFICE 1	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16
11287893	OFFICE 2	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288555	OFFICE 3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288557	OFFICE 4	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	0.7 ± 0.3	2023-01-16
11288558	OFFICE 5	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288556	OFFICE3	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11287889	PRINCIPAL	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16
11288554	SR	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16
11287880	VISION OFF	2023-01-10 @ 10:00 am	2023-01-13 @ 12:00 pm	< 0.3	2023-01-16
11288688	WORKROOM	2023-01-10 @ 9:00 am	2023-01-13 @ 11:00 am	< 0.3	2023-01-16

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 1 January Schools

Name of Schools:

1. Woodfield ES
2. Montgomery Village MS
3. Albert Einstein HS
4. Garrett Park Annex
5. Garrett Park ES
6. Kensington-Parkwood ES
7. Silver Creek MS
8. Stephen Knolls School
9. Highland View ES
10. MacDonald Knolls ECC
11. Montgomery Knolls ES
12. Rock Terrace HS

	Date	Initials
Radon Test Kits Deployed	01/10/2023	BMM
Radon Test Kits Collected	01/13/2023	BMM
Radon Test Kits Shipped to Lab*	01/13/2023	BMM
Radon Test Kits Received by Lab*	01/17/2023	BMM

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Stephen Knolls School
Date of Report	March 14, 2018
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	11
# Rooms \geq 4.0 pCi/L	0
Lowest Value	0.7 pCi/L
Highest Value	1.7 pCi/L

Project Status

Current Project Status at this time: Retesting completed; no further action at this time.



March 14, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #1214694188

Location: Stephen Knolls School

10731 St. Margarets Way
Kensington, Maryland 20895

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Stephen Knolls School, located at 10731 St. Margarets Way in Kensington, Maryland 20895 (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 or www.epa.gov/radon.

KCI visited the site on February 12, 2018 and deployed thirteen (13) 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.

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

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e. ≥ 3.5 pCi/L).

A floor plan map of the building with the test locations is included as Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on February 15, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, 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 HVAC upgrade testing.

These tests were conducted to:

- Evaluate radon concentrations following the installation of a new HVAC system.

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 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.

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 ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-15 miles per hour. Average humidity was around 69%. 0.05 Inches of precipitation was recorded during the 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). 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	See Attachment B

Quality Control Samples	
Results of Blank Canisters:	The field blank, 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 410-316-7800.

Sincerely,



Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Radon Test Summary Spreadsheets

C - Laboratory Analytical Results

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

Table 1 - Radon Testing Results		
Stephen Knolls		
Test Period: 02/12/18-02/15/18		
Kit Number	Room / Area	Result
7986705	A1	1.4
7986708	A6	1.2
7986752	C1	1.0
7986702	GH	1.7
7986714	KITCHEN	1.1
7986715	KITCHEN OFFICE	0.7
7986712	MWR	1.1
7986701	PEV	0.9
7986711	PRC	1.0
7986756	SD	0.9
7986760	VW	1.5

Table Note:

* Missing or Compromised Sample

Table 2 - Radon Testing Results		
Stephen Knolls		
Test Period: 02/12/18-02/15/18		
Kit Number	QC Type	Result
7986709	D (A6)	1.4
7986754	FB (PRC)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
STEPHEN KNOLLS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7986705	A1	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.4 ± 0.3	2018-02-19
7986708	A6	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.2 ± 0.3	2018-02-19
7986709	A6	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.4 ± 0.3	2018-02-19
7986752	C1	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.0 ± 0.3	2018-02-19
7986702	GH	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.7 ± 0.4	2018-02-19
7986714	KITCHEN	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.1 ± 0.3	2018-02-19
7986715	KITCHEN OFFICE	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	0.7 ± 0.3	2018-02-19
7986712	MWR	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.1 ± 0.3	2018-02-19
7986701	PEV	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	0.9 ± 0.3	2018-02-19
7986754	PRC	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7986711	PRC	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.0 ± 0.3	2018-02-19
7986756	SD	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	0.9 ± 0.3	2018-02-19
7986760	VW	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.5 ± 0.3	2018-02-19



Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

1. Highland Elementary School
2. Stephen Knolls Elementary School
3. Silver Creek Middle School
4. Woodlin Elementary School
5. Sligo Creek Elementary School
6. Francis Scott Key Middle School
7. John T. Baker Middle School
8. Cedar Grove Elementary School
9. Clarksburg Elementary School
10. Clarksburg Elementary School Annex
11. Fields Road Elementary School
12. Dufief Elementary School
13. Brown Station Elementary School
14. Diamond Elementary School
15. Fallsmeade Elementary School
16. Thomas Whootton High School
17. Lake Seneca Elementary School
18. Redland Middle School
19. Newport Mill Middle School
20. Bethesda Trans. and Maint. Depot
21. Sequoyah Elementary School
22. Gaithersburg Middle School
23. Wayside Elementary School
24. Travilah Elementary School
25. Damascus High School
26. Jones Lane Elementary School
27. Greencastle Elementary School
28. Spring Brook High School
29. Montgomery Blair High School
30. Watkins Mill High School

	Date	Initials
Radon Test Kits Deployed	2/12/18	JM
Radon Test Kits Collected	2/15/18	JM
Radon Test Kits Shipped to Lab*	2/15/18	JM
Radon Test Kits Received by Lab*	2/19/15	JM

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

Radon test result report for:
OFFICE BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7979482	1	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986991	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985684	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986987	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986993	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986990	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7979485	2	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985686	3	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986995	4	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986989	5	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986998	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986986	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986985	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986997	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

Radon test result report for:
TRANSIT BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984188	1	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984044	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986582	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986999	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7987000	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984196	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986996	2	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986994	3	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986992	4	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985680	5	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985698	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985699	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985700	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985872	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

February 28, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (20.9 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984181	1	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.7 \pm 0.8	2018-02-21
7986621	2	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.4 \pm 0.8	2018-02-21
7985683	3	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.5 \pm 0.8	2018-02-21
7984168	4	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.5 \pm 0.8	2018-02-21
7986618	5	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.9 \pm 0.8	2018-02-21
7984169	6	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.4 \pm 0.8	2018-02-21

Air Chek, Inc. 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 183530

NOMINAL Conditions: Radon Conc 20.9 pCi/L Rel. Hum 49.8 % Temp. 79.1 F

Date Start: 2/16/18 Date Stop: 2/19/18 Date Start: _____ Date Stop: _____
 Time Start: 1052 Time Stop: 1052 Time Start: _____ Time Stop: _____
 Device No.'s: (6) Char. Bags Device No.'s: _____
7984181, 7986621, 7985683 _____
7984168, 7986618, 7984169 _____
G3 Middle

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Stephen Knolls School
Date of Report	January 31, 2018
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	48
# Rooms \geq 4.0 pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	2.6 pCi/L

Current Project Status at this time: Results satisfactory to date; missed locations to be sampled.



January 31, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214694182

Location: Stephen Knolls School

10731 St. Margarets Way
Kensington, Maryland 20895

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Stephen Knolls School , located at 10731 St. Margarets Way in Kensington, Maryland 20895 (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 or www.epa.gov/radon.

KCI visited the site on November 28, 2017 and deployed fifty-nine (59) 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 Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 1, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, 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:

- HVAC upgrade testing.

These tests were conducted to:

- Evaluate radon concentrations following the installation of a new HVAC system.

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 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.

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 low-50s to mid-60s. Maximum sustained winds ranged from 8-15 miles per hour. Average humidity was around 65%. 0.02 Inches of precipitation was recorded during the testing period.

A magnitude 4.1 earthquake was reported on Thursday, November 30 near Dover, Delaware approximately 95 miles east of Gaithersburg, Maryland. The earthquake occurred during or just after the radon testing period for this facility. In general, enhanced radon emissions have been observed prior to earthquakes and this has been recorded all over the world, according to the research article entitled *Radon-222: A Potential Short-Term Earthquake Precursor*, published June 30, 2015 in the Journal of Earth Science and Climate

Change. The nearby earthquake, which occurred during or prior to the testing period, may have resulted in higher-than-normal radon test results for this facility.

RESULTS

The sampling locations, field observations, 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). Missing/compromised tests, missed rooms, and locked rooms 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.

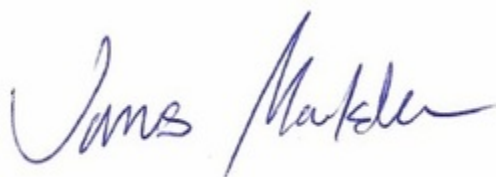
The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	None	N/A
≤ 4.0 pCi/L	See Attachment B	See Attachment B

Quality Control Samples	
Results of Blank Canisters:	The field blanks, office blank, 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 410-316-7800.

Sincerely,



James Moulds, CHMM
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

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

Radon Testing Results		
Stephen Knolls School		
Test Period: 11/28/17-12/01/17		
Kit Number	Room / Area	Result
7978823	A2	0.8
7978836	A2	< 0.3
7978838	A4	0.7
7978839	A4 OFFICE 1	0.6
7978843	A4 OFFICE 2	0.7
7978844	A4 OFFICE 3	0.7
7978846	A4 OFFICE 4	1.3
7978845	A4 OFFICE 5	1.4
7978802	A5	0.7
7978827	A7	0.7
7978818	A8	0.8
7978811	A9	1.0
7978804	ADMIN CONFERANCE	1.5
7978829	B1	0.6
7978824	B2	< 0.3
7978831	B3	< 0.3
7978830	B4	0.8
7978832	B5	0.7
7978833	B6	< 0.3
7978835	B7	0.6
7978834	B8	< 0.3
7978819	BUILDING SERVICE	1.6
7978854	C2	0.5
7978855	C3	0.8
7978856	C4	0.8
7978826	D1	0.7
7978858	D10	1.9
7978857	D11	0.7
7978809	D2	1.4
7978813	D3	2.5
7978814	D4	0.8
7978847	D5	0.6
7978850	D6	1.0
7978853	D7	1.0
7978849	D8	1.0
7978848	D9	0.9
7978810	GH2	1.8
7978822	HE NEXT TO A9	0.8
7978803	HEALTH ROOM	0.9
7978807	MAIN OFFICE	1.3
7978851	MEDIA ROOM	0.9
7978859	MULTIPURPOSE ROO	0.8
7978860	MULTIPURPOSE ROO	0.6
7978817	NURSES OFFICE	0.7
7978852	PAC	0.9
7978805	PRINCIPLE OFFICE	1.0

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knolls School		
Test Period: 11/28/17-12/01/17		
Kit Number	Room / Area	Result
7978820	SENSORY ROOM	1.5
7978812	SR NEXT TO A5	0.7
7978821	WORK ROOM	1.9
7978806	WORK ROOM A	2.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knolls School		
Test Period: 11/28/17-12/01/17		
Kit Number	QC Type	Result
7978862	D (A2)	0.8
7978840	D (A4)	0.5
7978801	D (A5)	0.6
7978825	D (D1)	0.6
7978808	D (D2)	0.9
7978861	FB (A2)	< 0.3
7978837	FB (A4)	< 0.3
7978828	FB (A5)	< 0.3
7978099	OB (OB)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

**STEPHEN KNOLLS SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978836	A2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978861	A2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978823	A2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-05
7978862	A2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-05
7978840	A4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.5 ± 0.3	2017-12-04
7978837	A4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978838	A4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978839	A4 OFFICE 1	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978843	A4 OFFICE 2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978844	A4 OFFICE 3	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978846	A4 OFFICE 4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.3 ± 0.3	2017-12-04
7978845	A4 OFFICE 5	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.4 ± 0.3	2017-12-04
7978801	A5	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.6 ± 0.3	2017-12-04
7978802	A5	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.7 ± 0.3	2017-12-04
7978828	A5	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	< 0.3	2017-12-04
7978827	A7	2017-11-28 @ 11:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-05
7978818	A8	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.8 ± 0.3	2017-12-04
7978811	A9	2017-11-28 @ 11:00 am	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7978804	ADMIN CONFERENCE	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	1.5 ± 0.3	2017-12-04
7978829	B1	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978824	B2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978831	B3	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978830	B4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978832	B5	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978833	B6	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978835	B7	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978834	B8	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978819	BUILDING SERVICE	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.6 ± 0.3	2017-12-04
7978854	C2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.5 ± 0.3	2017-12-04
7978855	C3	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978856	C4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978825	D1	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978826	D1	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978858	D10	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.9 ± 0.3	2017-12-04
7978857	D11	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978808	D2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7978813	D3	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	2.5 ± 0.3	2017-12-05

Radon test result report for:

**STEPHEN KNOLLS SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978814	D4	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-05
7978847	D5	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978850	D6	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7978853	D7	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7978849	D8	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7978848	D9	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-05
7978809	D2	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.4 ± 0.3	2017-12-04
7978810	GH2	2017-11-28 @ 11:00 am	2017-12-01 @ 11:00 am	1.8 ± 0.3	2017-12-04
7978822	HE NEXT TO A9	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978803	HEALTH ROOM	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.9 ± 0.3	2017-12-04
7978807	MAIN OFFICE	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.3 ± 0.3	2017-12-04
7978851	MEDIA ROOM	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7978859	MULTIPURPOSE ROO	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978860	MULTIPURPOSE ROO	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978817	NURSES OFFICE	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.7 ± 0.3	2017-12-04
7978099	OB	2017-11-28 @ 12:00 pm	2017-12-01 @ 12:00 pm	< 0.3	2017-12-04
7978852	PAC	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7978805	PRINCIPLE OFFICE	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	1.0 ± 0.3	2017-12-04
7978820	SENSORY ROOM	2017-11-28 @ 10:00 am	2017-12-01 @ 11:00 am	1.5 ± 0.3	2017-12-04
7978812	SR NEXT TO A5	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	0.7 ± 0.3	2017-12-04
7978806	WORK ROOM A	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	2.6 ± 0.3	2017-12-04
7978821	WORK ROOM	2017-11-28 @ 11:00 am	2017-12-01 @ 11:00 am	1.9 ± 0.3	2017-12-04



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

1. Chevy Chase Elementary School
2. Greencastle Elementary School
3. English Manor
4. Rock View Elementary School
5. Wheaton Woods Elementary School
6. Sequoyah Elementary School
7. Fallsmead Elementary School
8. Beall Elementary School
9. Stephen Knolls School
10. Maryvale Elementary School
11. Redland Middle School
12. Walt Whitman High School
13. Springbrook High School
14. Blair G. Ewing Center
15. Viers Mill Elementary School
16. Albert Einstein High School
17. Wayside Elementary School
18. Thomas S. Wootton High School
19. Highland Elementary School
20. Bethesda Transportation Depot
21. Bethesda Maintenance Depot
22. Travilah Elementary School
23. Lathrop E. Smith Center

	Date	Initials
Radon Test Kits Deployed	11/28/17	JM
Radon Test Kits Collected	12/01/17	JM
Radon Test Kits Shipped to Lab*	12/01/17	JM
Radon Test Kits Received by Lab*	12/05/17	JM

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

Radon test result report for:**TRANSIT 1****NONE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978062	TRANSIT 1	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975804	TRANSIT 10	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7977990	TRANSIT 11	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978201	TRANSIT 12	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978203	TRANSIT 13	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978206	TRANSIT 14	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978246	TRANSIT 15	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978239	TRANSIT 16	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978226	TRANSIT 17	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975078	TRANSIT 18	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975077	TRANSIT 19	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978074	TRANSIT 2	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975076	TRANSIT 20	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975684	TRANSIT 21	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975683	TRANSIT 22	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975601	TRANSIT 23	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978011	TRANSIT 24	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978012	TRANSIT 25	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978094	TRANSIT 26	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975624	TRANSIT 27	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7834562	TRANSIT 28	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7977995	TRANSIT 29	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978098	TRANSIT 3	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7977992	TRANSIT 30	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978719	TRANSIT 4	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978732	TRANSIT 5	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978731	TRANSIT 6	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975806	TRANSIT 7	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975815	TRANSIT 8	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975805	TRANSIT 9	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04

December 19, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (27.7 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7975075	S1	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	25.6 \pm 0.7	2017-12-07
7975064	S2	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	27.4 \pm 0.8	2017-12-07
7975063	S3	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	26.3 \pm 0.7	2017-12-07
7975065	S4	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	23.0 \pm 0.7	2017-12-07
7975069	S5	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	25.6 \pm 0.7	2017-12-07
7975070	S6	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	23.0 \pm 0.7	2017-12-07

Air Chek, Inc. 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 182393

NOMINAL Conditions: Radon Conc 27.7 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/1/17 Date Stop: 12/4/17 Date Start: _____ Date Stop: _____

Time Start: 1049 Time Stop: 1049 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Bags. Device No.'s: _____

7975075, 7975064, 7975063, _____

7975065, 7975069, 7975070 _____

F4 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 RADON TESTING

Executive Summary: Stephens Knolls School

Date of Test Report:	10/20/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	49
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.2

Project Status:

Follow-up testing after HVAC update completed; no further action at this time.



October 20, 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 # 12146341.54

Location: Stephens Knolls School
10731 St. Margaret's Way
Kensington, Maryland 20895

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 Stephens Knolls School, located at 10731 St. Margaret's Way in Kensington, Maryland 20895 (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 or www.epa.gov/radon.

KCI visited the site on September 26, 2016 and deployed fifty-five (55) 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 September 29, 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:

These tests represent:

- Follow-up sampling of a school that had HVAC modifications over the summer.

To expedite the testing, tests were conducted in September as soon as students and staff returned to:

- Determine if the HVAC project changed previously detected radon levels.

Future periodic testing should be conducted during the heating season in ideal conditions as described below. 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 cooling mode; therefore, KCI concludes that this test was not conducted during ideal testing conditions.

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.

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 50s and high temperatures in the mid-60s to mid-70s. Maximum sustained winds ranged from 3-15 miles per hour. Average humidity ranged from 71 to 89 percent. Rain (1.83 inches in Gaithersburg, MD) was recorded on 9/29/16. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

Results:

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	

Notes:

D- Duplicate sample

The office blanks 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

Radon Testing Results		
Stephen Knolls School		
Test Period: 09/26/16-09/29/16		
Kit Number	Room / Area	Result
7802151	2	< 0.3
7802176	* A1 (Tampered)	< 0.3
7802156	A3	0.5
7802114	A3 NEW	0.6
7802154	A4 MAIN	< 0.3
7802150	A4 OFF 1	0.6
7802161	A4 OFF 2	< 0.3
7802160	A4 OFF 3	< 0.3
7802157	A4 OFF 4	< 0.3
7802142	* A4 OFF 5 (Tampered)	< 0.3
7802148	A5	< 0.3
7802146	A6	< 0.3
7802155	* A6 OFF (Tampered)	< 0.3
7802145	A7	0.6
7802163	* A8 (Tampered)	< 0.3
7802112	A9	0.7
7802162	A9 OFF	0.6
7802125	B2	0.8
7802140	B3	< 0.3
7802128	B4	1.0
7802186	B5	< 0.3
7802129	B6	< 0.3
7802185	B7	0.7
7802127	B8	< 0.3
7802182	C2	0.7
7802139	C3	0.7
7802122	* C4 (Tampered)	0.9
7802109	CAF C1	1.1
7802126	CAF C1	0.9
7802144	D1	0.6
7802131	D10	1.6
7802105	D11	1.3
7802113	D2	1.2
7802133	D3	2.2
7802130	D4	1.6
7802178	D5	0.7
7802132	D6	1.2
7802107	* D7 (Tampered)	1.3
7802104	D9	1.0
7802115	GHSE OFF 1	1.3
7802137	GHSE OFF2	1.1
7802108	GHSE OFF3	1.4
7802123	GYM A2	0.5
7802141	GYM A2	0.5
7802120	IMC	1.1
7802183	KIT OFF	0.9

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knolls School		
Test Period: 09/26/16-09/29/16		
Kit Number	Room / Area	Result
7802135	OFF B1	0.6
7802110	PE	< 0.3
7802121	PRC	< 0.3
7802143	SR	< 0.3
7802106	SR D8	1.1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knolls School		
Test Period: 09/26/16-09/29/16		
Kit Number	QC Type	Result
7802177	D (A7)	0.6
7802184	D (B5)	0.8
7802136	D (GHSE OFF3)	1.3
7802124	* D (IMC:Tampered)	1.1

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

**STEPHEN KNOLLS SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802151	2	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802176	A1	2016-09-26 @ 7:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802156	A3	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.5 ± 0.3	2016-10-03
7802114	A3 NEW	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	0.6 ± 0.3	2016-10-03
7802154	A4 MAIN	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802150	A4 OFF 1	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.6 ± 0.3	2016-10-03
7802161	A4 OFF 2	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802160	A4 OFF 3	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802157	A4 OFF 4	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802142	A4 OFF 5	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802148	A5	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802146	A6	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802155	A6 OFF	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802177	A7	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.6 ± 0.3	2016-10-03
7802145	A7	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.6 ± 0.3	2016-10-03
7802163	A8	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802112	A9	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.7 ± 0.3	2016-10-03
7802162	A9 OFF	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.6 ± 0.3	2016-10-03
7802125	B2	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.8 ± 0.3	2016-10-03
7802140	B3	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802128	B4	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.0 ± 0.3	2016-10-03
7802184	B5	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.8 ± 0.3	2016-10-03
7802186	B5	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802129	B6	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802185	B7	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.7 ± 0.3	2016-10-03
7802127	B8	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802182	C2	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.7 ± 0.3	2016-10-03
7802139	C3	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.7 ± 0.3	2016-10-03
7802122	C4	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.9 ± 0.3	2016-10-03
7802109	CAF C1	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.1 ± 0.3	2016-10-03
7802126	CAF C1	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.9 ± 0.3	2016-10-03
7802144	D1	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	0.6 ± 0.3	2016-10-03
7802131	D10	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.6 ± 0.3	2016-10-03
7802105	D11	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.3 ± 0.3	2016-10-03
7802113	D2	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.2 ± 0.3	2016-10-03
7802133	D3	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	2.2 ± 0.3	2016-10-03
7802130	D4	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.6 ± 0.3	2016-10-03

Radon test result report for:**STEPHEN KNOLLS SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802178	D5	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	0.7 ± 0.3	2016-10-03
7802132	D6	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.2 ± 0.3	2016-10-03
7802107	D7	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.3 ± 0.3	2016-10-03
7802104	D9	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.0 ± 0.3	2016-10-03
7802115	GHSE OFF 1	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	1.3 ± 0.3	2016-10-03
7802137	GHSE OFF2	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	1.1 ± 0.3	2016-10-03
7802108	GHSE OFF3	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	1.4 ± 0.3	2016-10-03
7802136	GHSE OFF3	2016-09-26 @ 9:00 am	2016-09-29 @ 8:00 am	1.3 ± 0.3	2016-10-03
7802141	GYM A2	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	0.5 ± 0.3	2016-10-03
7802123	GYM A2	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	0.5 ± 0.3	2016-10-03
7802124	IMC	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.1 ± 0.3	2016-10-03
7802120	IMC	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.1 ± 0.3	2016-10-03
7802183	KIT OFF	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.9 ± 0.3	2016-10-03
7802135	OFF B1	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	0.6 ± 0.3	2016-10-03
7802110	PE	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802121	PRC	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7802143	SR	2016-09-26 @ 8:00 am	2016-09-29 @ 8:00 am	< 0.3	2016-10-03
7802106	SR D8	2016-09-26 @ 9:00 am	2016-09-29 @ 9:00 am	1.1 ± 0.3	2016-10-03

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon

Phase 18 Office Blanks

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802697	1	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7801899	10	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802932	11	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802935	12	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802915	13	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802941	2	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802942	3	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802919	4	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802918	5	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802917	6	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802916	7	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802952	8	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802928	9	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03

Radon test result report for:**MCPS Radon****Phase 18 Transit Blanks**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7714274	1	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802962	10	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714295	11	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714299	12	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714273	13	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714270	14	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802965	2	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802696	3	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802690	4	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714275	5	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714298	6	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802990	7	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802974	8	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802694	9	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03

October 12, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**MCPS Radon
Spike Sample Results**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7769880	101	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.9 ± 1.0	2016-09-28
7769884	102	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.4 ± 1.0	2016-09-28
7769885	103	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	23.0 ± 1.0	2016-09-28
7769890	104	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.3 ± 1.0	2016-09-28
7769891	105	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	26.8 ± 1.2	2016-09-28
7769899	106	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	24.1 ± 1.1	2016-09-28

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 KCI Technologies Inc. Job Number 176788

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 49.6 % Temp. 70.0 F

Date Start: 9/24/16 Date Stop: 9/26/16 Date Start: _____ Date Stop: _____

Time Start: 0758 Time Stop: 0758 Time Start: _____ Time Stop: _____

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

7769899, 7769884, 7769885, _____

7769889, 7769890, 7769891 _____

F3 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**



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

1. Wood Acres Elementary School
2. Walt Whitman High School
3. Burning Tree Elementary School
4. Ashburton Elementary School
5. Bethesda Maintenance
6. Bethesda Transportation
7. Herbert Hoover Middle School
8. Cold Spring Elementary School
9. Garret Park Elementary School
10. Rock View Elementary School
11. Francis Scott Key Middle School
12. Montgomery Blair High School
13. Stephen Knolls School
14. Lourie Center
15. Shriver Elementary School
16. Viers Mill Elementary School
17. Highland Elementary School
18. Newport Middle School
19. Albert Einstein High School
20. Sligo Middle School
21. East Silver Spring Elementary School
22. Oak View Elementary School
23. Roscoe Nix Elementary School
24. Northwood High School
25. Springbrook High School
26. John F. Kennedy High School

	Date	Initials
Radon Test Kits Deployed	9/26/16	JM
Radon Test Kits Collected	9/29/16	JM
Radon Test Kits Shipped to Lab*	9/30/16	JM
Radon Test Kits Received by Lab*	10/03/16	JM

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

- | | |
|------------------------------------------|-----------------------------------|
| 1. Damascus High School | 17. Watkins Mills High School |
| 2. Cedar Grove Elementary School | 18. Forest Oak Middle School |
| 3. Hallie Wells Middle School | 19. Gaithersburg Middle School |
| 4. Clarksburg Elementary School | 20. Emory Grove |
| 5. Clarksburg High School | 21. Fields Road Elementary School |
| 6. Woodlin Elementary School | 22. Beall Elementary School |
| 7. Flora Singer Elementary School | 23. Julius West Middle School |
| 8. Spring Mill Center | 24. Thomas Wootton High School |
| 9. Dr. Charles Drew Elementary School | 25. Robert Frost High School |
| 10. William Farquah Middle School | 26. Travilah Elementary School |
| 11. Rosa Parks Middle School | 27. Jones Lane Elementary School |
| 12. Blair Ewing Center | 28. Longview School |
| 13. Lathrop Smith Environmental Center | 29. Rock Terrace High School |
| 14. Sequoyah Elementary School | 30. Germantown Elementary School |
| 15. Shady Grove Middle School | 31. Lake Seneca Elementary School |
| 16. Captain James Daly Elementary School | |

	Date	Initials
Radon Test Kits Deployed	9/27/16	JM
Radon Test Kits Collected	9/30/16	JM
Radon Test Kits Shipped to Lab*	9/30/16	JM
Radon Test Kits Received by Lab*	10/03/16	JM

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

RADON SCREENING SURVEY – FOLLOW-UP STEPHEN KNOLLS SCHOOL

10731 St. Margaret’s Way, Kensington, Maryland 20895

EXECUTIVE SUMMARY

Date of Test Report:	3/24/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	1
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.4
High Value:	0.5
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/1/16 Initial	Result (pCi/L) 3/24/16 Follow-Up	Average Result (pCi/L)
C1	0.6 Tampered	0.5	0.6



MCPS RADON TESTING

Executive Summary: Stephen Knolls School

Date of Test Report:	3/24/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	1
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.4
High Value:	0.5

Project Status:

Retesting completed; no further action at this time.



March 24, 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 # 12146341.30

Location: Stephens Knolls School
10731 St. Margaret's Way
Kensington, Maryland 20895

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 Stephens Knolls School, located at 10731 St. Margaret's Way in Kensington, Maryland 20895 (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 or www.epa.gov/radon.

KCI visited the site on February 29, 2016 and deployed three (3) 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 March 3, 2016 to retrieve the radon sampling test kits. KCI 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 (certification # ARL0007) located at 929 Mount

Zion Road, Lebanon, Pennsylvania.

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:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	none	n/a
< 4.0 pCi/L	See Attachment B	

Notes:

D- Duplicate sample

The field blank, office blanks, 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 (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

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 10 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Stephen Knolls School		
Test Period: 02/29/16-03/03/16		
Kit Number	Room / Area	Result
3028853	C1	0.5

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knolls School		
Test Period: 02/29/16-03/03/16		
Kit Number	QC Type	Result
3028852	D (C1)	0.4
3028771	FB (C1)	<0.4

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152


Stephen Knolls School
10731 Saint Margaret's Way
Kensington MD 20895

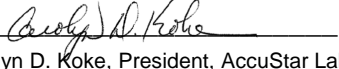
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3015295	3028853	02/29/2016 12:53 pm 03/03/2016 8:57 am	Unit C1	0.5
3015296	3028852	02/29/2016 12:53 pm 03/03/2016 8:57 am	Unit C1	0.4
3015297	3028771	02/29/2016 12:53 pm 03/03/2016 8:57 am	Unit C1	<0.4

Comment: A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/07/2016 Date Logged: 03/07/2016 Date Analyzed: 03/08/2016 Date Reported: 03/08/2016

Report Reviewed By: 

Report Approved By: 
Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

Radon Device Type Open Face Canister

Send Written Report To:

Name KCI Technologies, Inc
Address 936 Ridgebrook Road
Address
City / Town Sparks
State/Province Postal Code MD 21152
Report Country Baltimore County
Email Address tehsin@kci.com

Site Tested:

Site Name Stephen Knolls School
Address 10731 SAINT MARGARET'S
Address WAY
City / Town KENSINGTON
State/Province Postal Code MD 20895
Test Country Montgomery County
Project Number 12146341

Contact Information:

Contact Tehsin Aurangabadwala
Telephone 410-891-1726
Technician Atm I.
Cert. Number
Signature

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3028853		C1		Temp	02/29/2016	12:53 pm	03/03/2016	8:57 AM	
	3028852		C1		75'	02/29/2016	12:53 pm	03/03/2016	↓	
	3028771		C1		75'	02/29/2016	12:53 pm	03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		
						02/29/2016		03/03/2016		

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

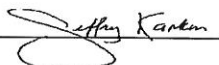
MCPS Radon Phase 10 Office Blank

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3015360	3028828	02/29/2016 9:30 am 03/03/2016 9:30 am	Office Blank	<0.4

Comment: A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/07/2016 Date Logged: 03/07/2016 Date Analyzed: 03/08/2016 Date Reported: 03/08/2016

Report Reviewed By: 

Report Approved By: 
Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Transit Blanks

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3010588	3028953	01/19/2016 1:00 pm	01/22/2016 9:30 am	1	< 0.4
3010589	3028955	01/19/2016 1:00 pm	01/22/2016 9:30 am	2	< 0.4
3010590	3028954	01/19/2016 1:00 pm	01/22/2016 9:30 am	3	< 0.4
3010591	3028997	01/19/2016 1:00 pm	01/22/2016 9:30 am	4	< 0.4

Comment: AMENDED REPORT for 3028953-8955, 3028997 on 2/22/16 to add all missing information from the blank datasheet. A copy of this report was emailed to james.mouldsdales@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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Return canisters for analysis to:
AccuStar Labs
 929 Mt. Zion Rd., Lebanon, PA 17046
 800-523-4964

RECEIVED JAN 27 2016
AccuStar Labs - Lebanon, PA
INFORMATION FORM - Large Buildings -
Projects - Apartments

Instructions on back of form
 Read instructions carefully
 Discrepancies will invalidate tests

Test Site Info

Name of Building/Project or Owner: Transit County: _____
 Site Address: Transit State: _____ Zip: _____
 City: _____ Phone: _____ Email: _____
 Projects Contact Name: Don Coale

Do not use this form in
 New Jersey or Florida
 Call for correct forms.

Multi-Page Report Y-N
 LAB USE ONLY

Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks)	Floor	Start Date	Start Time Include AM/PM	Stop Date	Stop Time Include AM/PM	Wgt. Gain	pCi/L
3028953	Transit	1	1/19/16	approx: 00pm 1/23/16	1/23/16	9:30am		<0.4
8955	Transit	1	1/19/16					<0.4
8954	Transit	1	1/19/16					<0.4
8997	Transit	1	1/19/16					<0.4

1/27/2016
 KCI Technologies, Inc.
 3010588 3028953 ACPC275B EXP12/31/2018

Structure Type: (circle one or more) Basement - Crawlspace - Slab on Grade - Other
 Test Purpose: (Circle all that apply) Initial Screening - Follow Up Test -
 Post Mitigation - Real Estate - Other
 Building Type: (Circle One) Residential - Non Residential
 Private Day Care - Private School
 Day Care in Public School - Public School

Both Placed by and Retrieved by signatures are required
 Canisters placed by _____ # _____
 Canisters retrieved by _____ # _____
 Owner waives confidentiality by signing here _____ Date 1/23/16
 Attention: James Mouldale

Send Results To:
 Company Name: KCI Tech
 Address: 936 Ridgebrook
 City: Sparks State: MD Zip: 21152
 Phone: 410-599-3826
 EMAIL Results to: James.Mouldale@kci.com
 Fax: _____

Were general operating conditions maintained?
 Yes - No explain if NO
 Were closed building conditions maintained?
 Yes - No explain if NO
 Normal Temp. Yes - No
 Normal Humidity Yes - No
 Windy Y-N Rainy Y-N

Make sure information is complete and correct.
 If a recalculation is requested there is a \$10.00 recalc fee PER Canister.

Mailing: PO Box 990 Jonestown, PA 17038
 Shipping: 929 Mt Zion Road, Lebanon, PA 17046
 800-523-4964 fax 717-274-5662
 NEHA 10511AL NRSB ARL 0007

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173618

NOMINAL Conditions: Radon Conc 25.2 pCi/L Rel. Hum 49.1 % Temp. 72.0 F

Date Start: 1/23/16 Date Stop: 1/25/16 Date Start: _____ Date Stop: _____

Time Start: 0821 Time Stop: 0821 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Cons. Device No.'s: _____

3028985 thru 3028990

E2 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

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Radon Spike Sample Laboratory Results

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3010551	3028985	01/23/2016 8:20 am	01/25/2016 8:20 am	1 First Floor	24.2
3010552	3028986	01/23/2016 8:20 am	01/25/2016 8:20 am	2 First Floor	25.7
3010553	3028987	01/23/2016 8:20 am	01/25/2016 8:20 am	3 First Floor	23.8
3010554	3028988	01/23/2016 8:20 am	01/25/2016 8:20 am	4 First Floor	23.3
3010555	3028989	01/23/2016 8:20 am	01/25/2016 8:20 am	5 First Floor	24.0
3010556	3028990	01/23/2016 8:20 am	01/25/2016 8:20 am	6 First Floor	24.4

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.

Comment: A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Disclaimer:

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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Return canisters for analysis to:
AccuStar Labs
 929 Mt. Zion Rd., Lebanon, PA 17046
 800-523-4964

AccuStar Labs - Lebanon, PA
INFORMATION FORM - Large Buildings -
Projects - Apartments

Instructions on back of form
 Read instructions carefully
 Discrepancies will invalidate tests

RECEIVED JAN 27 2016

Test Site Info

Name of Building/Project or Owner: MCPS State: MD Zip: 20850 County: Montgomery
 Site Address: 850 Hungerford Dr Phone: 410-891-1842 Email: James.Moulsdale@kci.com
 City: Rockville MD

Do not use this form in
 New Jersey or Florida
 Call for correct forms.

Multi-Page Report Y-N

Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks)	Floor	Start Date	Start Time Include AM/PM	Stop Date	Stop Time Include AM/PM	Wgt. Gain	pCi/L
3028985	1 3010551	1	1/23/16	08:20	1/25/16	08:20		21A
3028986	2 3010552	1						
3028987	3 3010553	1						
3028988	4 3010554	1						
3028989	5 3010555	1						
3028990	6 3010556	1						

LAB USE ONLY	
Wgt. Gain	pCi/L
	21A

Structure Type: (circle one or more) Basement - Crawlspace - Slab on Grade - Other
Test Purpose: (Circle all that apply) Initial Screening - Follow Up Test -
 Post Mitigation - Real Estate - Other
Building Type: (Circle One) Residential - Non Residential
 Private Day Care - Private School
 Day Care in Public School - Public School

Both Placed by and Retrieved by signatures are required
 Canisters placed by James Moulsdale
 Canisters retrieved by James Moulsdale

Certified Testers Provide # _____

Owner waives confidentiality by signing here _____ Date _____

Send Results To:

Company Name: KCI technologies Inc Attention: James Moulsdale
 Address: 936 Ridgebrook Rd
 City: Sparks MD 21152 State: 7in
 Phone: 410-891-1842 Fax: _____
 EMAIL Results to: James.Moulsdale@kci.com

Were general operating conditions maintained? Yes - No explain if NO
 Were closed building conditions maintained? Yes - No explain if NO
 Normal Temp. Yes - No
 Normal Humidity Yes - No
 Windy YN Rainy YN

Mailing: PO Box 990 Jonestown
 Shipping: 929 Mt Zion Road, Lehigh, PA 17046
 800-523-4964 fax 717-241-1111
 NEHA 10511AL NRSB ARL 0007

KCI Technologies, Inc.

3010551 **3028985** ACPC275B EXP12/31/2018



MCPS RADON TESTING

Executive Summary: Stephen Knolls School

Date of Test Report:	2/1/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	55
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.4

Project Status:

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



February 1, 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 # 12146341.22

Location: Stephen Knolls School
10731 St. Margaret's Way
Kensington, MD 20895

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 Stephen Knolls School, located at 10731 St. Margaret's Way in Kensington, Maryland 20895 (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 or www.epa.gov/radon.

KCI visited the site on January 4, 2016 and deployed sixty-four (64) 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 7, 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:

Radon Concentration	Room	Result
≥ 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 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

Radon Testing Results		
Stephen Knoll School		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7719527	A1	< 0.3
7719534	A4	< 0.3
7719535	A4A	< 0.3
7719593	A4B	< 0.3
7719570	A4C	< 0.3
7719594	A4D	0.5
7719595	A4E	< 0.3
7719573	A5	< 0.3
7719578	A6	< 0.3
7719592	A7	< 0.3
7719576	A8	0.7
7719591	A9	< 0.3
7719544	AP	< 0.3
7719550	AP	< 0.3
7719551	AP	< 0.3
7719575	B1	< 0.3
7719574	B2	< 0.3
7719549	B3	< 0.3
7719510	B4	0.7
7719507	B5	< 0.3
7719581	B6	< 0.3
7719582	B7	< 0.3
7719520	B8	< 0.3
7719587	BS	1.3
7719521	C1	< 0.3
7719522	* C1 (Tamered)	0.6
7719506	C2	< 0.3
7719503	C3	< 0.3
7719546	CR	0.6
7719589	D1	< 0.3
7719532	D1	0.7
7719511	D10	2.4
7719518	D11	1.8
7719530	D3	1
7719577	D4	< 0.3
7719512	D5	< 0.3
7719516	D6	0.7
7719515	D7	1
7719586	D9	0.6
7719597	GH	< 0.3
7719598	GH2	1.2
7719599	GH3	1.2
7719590	HE	0.7
7719504	KIT	0.5
7719519	KIT	< 0.3
7719501	KO	0.8

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knoll School		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7719536	MWR	0.9
7719571	NURSE OFFICE	0.7
7719583	PEO	< 0.3
7719514	PRC	0.8
7719526	PRI	< 0.3
7719528	SD	< 0.3
7719517	VW	1.1
7719600	WORK ROOM	1.1
7719596	WR	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Stephen Knoll School		
Test Period: 01/04/16-01/07/16		
Kit Number	QC Type	Result
7719579	D (A1)	< 0.3
7719572	D (A8)	1
7719508	D (B5)	< 0.3
7719537	D (D9)	1.2
7719505	D (KIT)	0.6
7719588	D (WORK ROOM)	1
7719502	FB (C4)	< 0.3
7719531	FB (D3)	< 0.3
7719509	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

January 25, 2016
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**STEPHEN KNOLL SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719509	0	2016-01-04 @ 12:00 pm	2016-01-07 @ 1:00 pm	< 0.3	2016-01-11
7719527	A1	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719579	A1	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719534	A4	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719535	A4A	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719593	A4B	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719570	A4C	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719594	A4D	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.5 ± 0.3	2016-01-12
7719595	A4E	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719573	A5	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719578	A6	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719592	A7	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719576	A8	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719572	A8	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.3	2016-01-12
7719591	A9	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719544	AP	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719550	AP	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719551	AP	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719575	B1	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719574	B2	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719549	B3	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719510	B4	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.2	2016-01-11
7719507	B5	2016-01-04 @ 11:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719508	B5	2016-01-04 @ 11:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719581	B6	2016-01-04 @ 11:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719582	B7	2016-01-04 @ 11:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719520	B8	2016-01-04 @ 11:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7719587	BS	2016-01-04 @ 9:00 am	2016-01-07 @ 10:00 am	1.3 ± 0.3	2016-01-11
7719522	C1	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719521	C1	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-12
7719506	C2	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719503	C3	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719502	C4	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719546	CR	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.2	2016-01-11
7719589	D1	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719532	D1	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.2	2016-01-11
7719511	D10	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	2.4 ± 0.4	2016-01-12

January*
25,
2016

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**STEPHEN KNOLL SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719518	D11	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	1.8 ± 0.3	2016-01-11
7719530	D3	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.3	2016-01-11
7719531	D3	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719577	D4	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719512	D5	2016-01-04 @ 12:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719516	D6	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7719515	D7	2016-01-04 @ 12:00 pm	2016-01-07 @ 10:00 am	1.0 ± 0.3	2016-01-11
7719586	D9	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.6 ± 0.2	2016-01-11
7719537	D9	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	1.2 ± 0.3	2016-01-12
7719597	GH	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719598	GH2	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.2 ± 0.3	2016-01-11
7719599	GH3	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.2 ± 0.3	2016-01-11
7719590	HE	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719505	KIT	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719519	KIT	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719504	KIT	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.5 ± 0.2	2016-01-11
7719501	KO	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	0.8 ± 0.2	2016-01-11
7719536	MWR	2016-01-04 @ 12:00 pm	2016-01-07 @ 10:00 am	0.9 ± 0.3	2016-01-11
7719571	NURSE OFFICE	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719583	PEO	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719514	PRC	2016-01-04 @ 12:00 pm	2016-01-07 @ 10:00 am	0.8 ± 0.3	2016-01-12
7719526	PRI	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719528	SD	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719517	VW	2016-01-04 @ 11:00 am	2016-01-07 @ 10:00 am	1.1 ± 0.3	2016-01-11
7719588	WORK ROOM	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.3	2016-01-11
7719600	WORK ROOM	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.3	2016-01-11
7719596	WR	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11

January 15, 2016
** LABORATORY ANALYSIS REPORT **

Radon test result report for:
**MCPS PHASE 3 & 4
TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708218	TRANSIT 4	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708200	TRANSIT 1	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708190	TRANSIT 10	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708189	TRANSIT 11	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708191	TRANSIT 12	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708188	TRANSIT 13	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708197	TRANSIT 14	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708186	TRANSIT 15	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708185	TRANSIT 16	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708184	TRANSIT 17	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708182	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708187	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708199	TRANSIT 2	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708181	TRANSIT 20	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708180	TRANSIT 21	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708183	TRANSIT 22	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708178	TRANSIT 23	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708179	TRANSIT 24	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708177	TRANSIT 25	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708176	TRANSIT 26	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708174	TRANSIT 27	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708173	TRANSIT 28	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708175	TRANSIT 29	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708198	TRANSIT 3	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708172	TRANSIT 30	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708194	TRANSIT 5	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708196	TRANSIT 6	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708193	TRANSIT 7	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708192	TRANSIT 8	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708195	TRANSIT 9	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23

December
23,
2015

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7706380	101	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	25.2	2015-12-23
7706381	102	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706208	103	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	27.7	2015-12-23
7705132	104	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	28.6	2015-12-23
7706366	105	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706211	106	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.1	2015-12-23

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 KCI Technologies Inc. Job Number 173224

NOMINAL Conditions: Radon Conc 26.9 pCi/L Rel. Hum 49.6 % Temp. 69.9 F

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: _____ Date Stop: _____

Time Start: 0929 Time Stop: 0929 Time Start: _____ Time Stop: _____

Device No.'s: 7705132, 7706208, Device No.'s: _____

7706211, 7706366, _____

7706380, 7706381 _____

F3 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 IV

Name of Schools:

- | | | |
|----------------------------|----------------------------|---------------------------|
| 1. Albert Einstein HS | 12. Herbert Hoover MS | 23. Stephen Knolls School |
| 2. Bel Pre ES | 13. Kohn F. Kennedy HS | 24. Strathmore ES |
| 3. Benjamin Banneker MS | 14. Julius West MS | 25. Summit Hall ES |
| 4. Bethesda Chevy Chase HS | 15. Kensington Parkwood ES | 26. Travilah ES |
| 5. Beverly Farms ES | 16. Lakewood ES | 27. Twinbrook ES |
| 6. Cabin John MS | 17. Mill Creek ES | 28. Waters Landing ES |
| 7. Chevy Chase ES | 18. Montgomery Blair HS | 29. Watkins Mill HAS |
| 8. Farmland ES | 19. Montgomery Village MS | 30. Weller Road ES |
| 9. Forest Oak MS | 20. Northwood HS | 31. White Oak MS |
| 10. Gaithersburg HS | 21. Paint Branch ES | 32. Winston Churchill HS |
| 11. Garrett Park ES | 22. Rock Creek Forest ES | |

	Date	Initials
Radon Test Kits Deployed	1/4/16	JM
Radon Test Kits Sampled	1/7/16	JM
Radon Test Kits Shipped to Lab*	1/8/16	JM
Radon Test Kits Received by Lab*	1/11/16	JM

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

Note: tests kits deployed at Montgomery Blair HS 1/4/16 and 1/5/16, test kits sampled at Montgomery Blair HS 1/7/16 and 1/8/16