



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Silver Creek Middle 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	52
# 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: Silver Creek Middle School
3701 Saul Road
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 Silver Creek Middle School, located at 3701 Saul Rd. 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-eight (58) 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		
Silver Creek MS		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11287521	113	0.9
11287505	114	0.7
11287519	114	0.6
11287517	116	< 0.3
11287537	206	0.7
11287538	212	0.8
11287532	213	< 0.3
11287502	219	< 0.3
11287539	226	< 0.3
11287540	232	0.9
11287542	232	0.6
11287523	239	1.3
11287535	242	0.7
11287524	243	1.0
11287529	244	< 0.3
11287530	244	1.0
11287533	244	0.9
11287522	245	1.1
11287536	249	0.6
11287501	253	0.9
11287515	260	0.9
11287534	274	0.7
11287543	310	1.0
11287544	446	0.9
11285393	100A	0.5
11285399	100D	0.5
11285396	100F	< 0.3
11287511	100G	1.0
11285398	100H	< 0.3
11287503	100J	1.0
11287510	100N	1.0
11287509	100P	0.5
11287508	100Q	0.6
11287507	100R	0.5
11287506	100S	< 0.3
11287512	100S	0.9
11287513	100S	0.7
11287504	100W	2.4
11287525	111C	0.7
11287520	113C	< 0.3
11287526	ART 279	0.9
11287516	ART OFFICE	0.9

Table 1- Radon Testing Results		
Silver Creek MS		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11285383	BUILDING SERVICES OFFICE - 124	0.9
11285392	BUILDING SERVICES OFFICE - 128	0.6
11285395	CAFETERIA 101	< 0.3
11285397	CAFETERIA 101	0.6
11285389	CONFERENCE ROOM 100E	< 0.3
11287528	COUNSELING LOBBY	0.9
11287531	GYM 262	< 0.3
11287541	GYM 262	0.6
11287527	HEALTH ROOM 111	1.4
11285394	KITCHEN OFFICE 118B	0.7
11285391	MAIN OFFICE 101	0.6
11287514	MEDIA CENTER 200	< 0.3
11287518	MEDIA CENTER 200	< 0.3
11285390	PRINCIPAL'S OFFICE 100B	< 0.3
11285385	WORK ROOM 108	< 0.3
11285400	WORK ROOM 108	< 0.3

Table 2- Radon Testing Results			
Silver Creek MS			
Test Period: 01/10/23 - 01/13/23			
Kit Number	QC Type	Room / Area	Result
11287505	D	114	0.7
11287533	D	244	0.9
11287529	FB	244	< 0.3
11287512	D	100S	0.9
11287506	FB	100S	< 0.3
11285385	D	Work Room 108	< 0.3
11285162	OB	OFFICE BLANK	< 0.3
11284899	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285393	100A	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.5 ± 0.3	2023-01-16
11285399	100D	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.5 ± 0.3	2023-01-16
11285396	100F	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11287511	100G	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	1.0 ± 0.3	2023-01-16
11285398	100H	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11287503	100J	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	1.0 ± 0.3	2023-01-16
11287510	100N	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	1.0 ± 0.3	2023-01-16
11287509	100P	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.5 ± 0.3	2023-01-16
11287508	100Q	2023-01-10 @ 9:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11287507	100R	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	0.5 ± 0.3	2023-01-16
11287512	100S	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	0.9 ± 0.3	2023-01-16
11287513	100S	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	0.7 ± 0.3	2023-01-16
11287506	100S	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11287504	100W	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	2.4 ± 0.3	2023-01-16
11287525	111C	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	0.7 ± 0.3	2023-01-16
11287521	113	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287520	113C	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287519	114	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11287505	114	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	0.7 ± 0.3	2023-01-16
11287517	116	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287537	206	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.7 ± 0.3	2023-01-16
11287538	212	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.8 ± 0.3	2023-01-16
11287532	213	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287502	219	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287539	226	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287542	232	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11287540	232	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287523	239	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	1.3 ± 0.3	2023-01-16
11287535	242	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.7 ± 0.3	2023-01-16
11287524	243	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	1.0 ± 0.3	2023-01-16
11287530	244	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	1.0 ± 0.3	2023-01-16
11287533	244	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287529	244	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287522	245	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	1.1 ± 0.3	2023-01-16
11287536	249	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11287501	253	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287515	260	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16

Radon test result report for:**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287534	274	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.7 ± 0.3	2023-01-16
11287543	310	2023-01-10 @ 12:00 pm	2023-01-13 @ 10:00 am	1.0 ± 0.3	2023-01-16
11287544	446	2023-01-10 @ 12:00 pm	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287526	ART 279	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11287516	ART OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11285383	BUILDING SERVICES OFFICE - 124	2023-01-10 @ 9:00 am	2023-01-13 @ 10:00 am	0.9 ± 0.3	2023-01-16
11285392	BUILDING SERVICES OFFICE - 128	2023-01-10 @ 9:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11285395	CAFETERIA 101	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285397	CAFETERIA 101	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.6 ± 0.3	2023-01-16
11285389	CONFERENCE ROOM 100E	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11287528	COUNSELING LOBBY	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	0.9 ± 0.3	2023-01-16
11287531	GYM 262	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287541	GYM 262	2023-01-10 @ 11:00 am	2023-01-13 @ 10:00 am	0.6 ± 0.3	2023-01-16
11287527	HEALTH ROOM 111	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	1.4 ± 0.3	2023-01-16
11285394	KITCHEN OFFICE 118B	2023-01-10 @ 9:00 am	2023-01-13 @ 10:00 am	0.7 ± 0.3	2023-01-16
11285391	MAIN OFFICE 101	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.6 ± 0.3	2023-01-16
11287518	MEDIA CENTER 200	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11287514	MEDIA CENTER 200	2023-01-10 @ 10:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11285390	PRINCIPAL'S OFFICE 100B	2023-01-10 @ 9:00 am	2023-01-13 @ 10:00 am	< 0.3	2023-01-16
11285400	WORK ROOM 108	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285385	WORK ROOM 108	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 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

RADON SCREENING SURVEY – FOLLOW-UP SILVER CREEK MIDDLE SCHOOL

3701 Saul Rd Rd., Kensington, Maryland 20895

EXECUTIVE SUMMARY

Date of Test Report:	3/14/18
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	26
# Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	2.0
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) 1/4/18	Result (pCi/L) 3/14/18	Average Result (pCi/L)
102B	4.5	1.1	2.8



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Silver Creek Middle 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	26
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	2.0 pCi/L

Project Status

Current Project Status at this time: Testing Completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.



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 #1214634188

Location: Silver Creek Middle School

3701 Saul Rd.
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 Silver Creek Middle School, located at 3701 Saul Rd. 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 27, 2017 and deployed thirty (30) 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 November 30, 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:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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		
Silver Creek Middle School		
Test Period: 02/12/18-02/15/18		
Kit Number	Room / Area	Result
7986762	100	0.6
7986761	100	0.5
7986758	110	0.7
7986706	119	0.7
7986757	123	2.0
7986755	125	1.4
7986703	127	1.5
7986753	131	< 0.3
7986772	206	0.7
7986768	239	1.0
7986770	242	0.8
7986767	243	< 0.3
7986769	244	0.8
7986766	245	0.8
7986765	249	< 0.3
7986764	253	< 0.3
7986798	260	0.6
7986771	279	< 0.3
7986763	1015	0.9
7986773	102B	1.1
7986713	118B	0.6
7986704	118C	0.8
7986707	118F	0.8
7986718	118J	< 0.3
7986797	226A	0.7
7986799	GYM	< 0.3
7986800	GYM	< 0.3
7986774	KITCHEN	0.7

Table Note:

* Missing or Compromised Sample

Table 2 - Radon Testing Results		
Silver Creek Middle School		
Test Period: 02/12/18-02/15/18		
Kit Number	QC Type	Result
7986777	D (GYM)	< 0.3
7986759	FB (110)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
**SILVER CREEK MS
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7986761	100	2018-02-12 @ 12:00 pm	2018-02-15 @ 1:00 pm	0.5 ± 0.3	2018-02-19
7986762	100	2018-02-12 @ 12:00 pm	2018-02-15 @ 1:00 pm	0.6 ± 0.3	2018-02-19
7986763	1015	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.9 ± 0.3	2018-02-19
7986773	102B	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	1.1 ± 0.3	2018-02-19
7986758	110	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.7 ± 0.3	2018-02-19
7986759	110	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986713	118B	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.6 ± 0.3	2018-02-19
7986704	118C	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.8 ± 0.3	2018-02-19
7986707	118F	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.8 ± 0.3	2018-02-19
7986718	118J	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986706	119	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.7 ± 0.3	2018-02-19
7986757	123	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	2.0 ± 0.3	2018-02-19
7986755	125	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	1.4 ± 0.3	2018-02-19
7986703	127	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	1.5 ± 0.3	2018-02-19
7986753	131	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986772	206	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.7 ± 0.3	2018-02-19
7986797	226A	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.7 ± 0.3	2018-02-19
7986768	239	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	1.0 ± 0.3	2018-02-19
7986770	242	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.8 ± 0.3	2018-02-19
7986767	243	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986769	244	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.8 ± 0.3	2018-02-19
7986766	245	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.8 ± 0.3	2018-02-19
7986765	249	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986764	253	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986798	260	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	0.6 ± 0.3	2018-02-19
7986771	279	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986799	GYM	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986800	GYM	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986777	GYM	2018-02-12 @ 2:00 pm	2018-02-15 @ 1:00 pm	< 0.3	2018-02-19
7986774	KITCHEN	2018-02-12 @ 1:00 pm	2018-02-15 @ 1:00 pm	0.7 ± 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	Silver Creek Middle School
Date of Report	January 4, 2018
Round of Testing	Initial Testing Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	51
# Rooms ≥ 4.0 pCi/L	1
Lowest Value	< 0.3 pCi/L
Highest Value	4.5 pCi/L

Rooms with results ≥ 4.0 pCi/L: 102B (4.5 pCi/L)

Current Project Status at this time: Testing Completed; retesting needed for results ≥ 4.0 pCi/L.

Missing or compromised samples need re-test.



January 4, 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: Silver Creek Middle School

3701 Saul Rd.
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 Silver Creek Middle School, located at 3701 Saul Rd. 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 27, 2017 and deployed sixty-six (66) 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 November 30, 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:

- Initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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	102B	4.5
≤4.0 pCi/L	See Attachment B	See Attachment B

Quality Control Samples	
Results of Blank Canisters:	The field blank, office blank, and lab transit blank 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 Mouldale, 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		
Silver Creek Middle School		
Test Period: 11/27/17-12/01/17		
Kit Number	Room / Area	Result
7976585	101	0.9
7976586	101	0.8
7976580	102	0.6
7976540	103	0.8
7976550	108	1.0
7976569	113	0.8
7976596	114	< 0.3
7976575	116	< 0.3
7976593	121	1.6
7976588	122	0.7
7976562	124	1.1
7976589	128	0.7
7976594	130	0.7
7976544	209	0.5
7976539	212	0.8
7976543	215	< 0.3
7976563	219	< 0.3
7976536	226	< 0.3
7976545	232	1.1
7976574	335	< 0.3
7976573	340	< 0.3
7976538	421	< 0.3
7976548	100A	0.7
7976559	100B	0.8
7976558	100D	1.0
7976553	100E	0.8
7976549	100F	0.7
7976557	100G	< 0.3
7976541	100H	< 0.3
7976551	100J	0.9
7976546	100N	0.7
7976582	100P	0.6
7976566	100Q	< 0.3
7976565	100R	0.8
7976576	100S	0.7
7976577	100T	< 0.3
7976595	100V	< 0.3
7976570	100W	0.9
7976567	100X	2.0
7976590	101A	1.1
7976599	102A	1.4
7976591	102B	4.5
7976568	111 HR	< 0.3
7976584	111C	0.6
7976598	111G	0.7
7976597	113A	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Silver Creek Middle School		
Test Period: 11/27/17-12/01/17		
Kit Number	Room / Area	Result
7976572	113B	0.7
7976600	113C	0.8
7976581	116A	< 0.3
7976587	116B	0.5
7976579	* 119 (Missing)	-
7976542	MEDIA ROOM	0.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Silver Creek Middle School		
Test Period: 11/27/17-11/30/17		
Kit Number	QC Type	Result
7976560	D (100A)	0.8
7976556	D (100D)	1.0
7976554	D (100E)	< 0.3
7976547	D (100N)	0.9
7976571	D (100W)	1.5
7976564	D (113A)	0.5
7976578	D (116)	0.9
7976592	D (130)	0.6
7976535	D (MEDIA ROOM)	0.7
7976555	FB (100A)	< 0.3
7976552	FB (100E)	< 0.3
7976583	FB (100N)	< 0.3
7976537	FB (MEDIA ROOM)	< 0.3
7976538	OB (OB)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
SILVER CREEK MS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976548	100A	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.4	2017-12-05
7976560	100A	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05
7976555	100A	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976559	100B	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05
7976556	100D	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	1.0 ± 0.3	2017-12-05
7976558	100D	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	1.0 ± 0.3	2017-12-05
7976554	100E	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976553	100E	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05
7976552	100E	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976549	100F	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.3	2017-12-05
7976557	100G	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976541	100H	2017-11-27 @ 3:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976551	100J	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.9 ± 0.4	2017-12-05
7976583	100N	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976546	100N	2017-11-27 @ 1:00 pm	2017-11-30 @ 2:00 pm	0.7 ± 0.3	2017-12-05
7976547	100N	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.9 ± 0.4	2017-12-05
7976582	100P	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.6 ± 0.3	2017-12-05
7976566	100Q	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976565	100R	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05
7976576	100S	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.3	2017-12-04
7976577	100T	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976595	100V	2017-11-27 @ 3:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976570	100W	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.9 ± 0.3	2017-12-05
7976571	100W	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	1.5 ± 0.4	2017-12-05
7976567	100X	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	2.0 ± 0.4	2017-12-05
7976585	101	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.9 ± 0.4	2017-12-05
7976586	101	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05
7976590	101A	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	1.1 ± 0.4	2017-12-05
7976580	102	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	0.6 ± 0.3	2017-12-04
7976599	102A	2017-11-27 @ 4:00 pm	2017-11-30 @ 2:00 pm	1.4 ± 0.3	2017-12-04
7976591	102B	2017-11-27 @ 4:00 pm	2017-11-30 @ 2:00 pm	4.5 ± 0.5	2017-12-05
7976540	103	2017-11-27 @ 4:00 pm	2017-11-30 @ 2:00 pm	0.8 ± 0.3	2017-12-04
7976550	108	2017-11-27 @ 1:00 pm	2017-11-30 @ 1:00 pm	1.0 ± 0.4	2017-12-05
7976568	111 HR	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976584	111C	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.6 ± 0.4	2017-12-05
7976598	111G	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.4	2017-12-05
7976569	113	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.4	2017-12-05

Radon test result report for:
SILVER CREEK MS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976597	113A	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976564	113A	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	0.5 ± 0.3	2017-12-05
7976572	113B	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	0.7 ± 0.3	2017-12-04
7976600	113C	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	0.8 ± 0.3	2017-12-04
7976596	114	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976578	116	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.9 ± 0.4	2017-12-05
7976575	116	2017-11-27 @ 2:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-05
7976581	116A	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976587	116B	2017-11-27 @ 2:00 pm	2017-11-30 @ 1:00 pm	0.5 ± 0.4	2017-12-05
7976593	121	2017-11-27 @ 3:00 pm	2017-11-30 @ 2:00 pm	1.6 ± 0.3	2017-12-04
7976588	122	2017-11-27 @ 3:00 pm	2017-11-30 @ 2:00 pm	0.7 ± 0.4	2017-12-05
7976562	124	2017-11-27 @ 4:00 pm	2017-11-30 @ 1:00 pm	1.1 ± 0.4	2017-12-05
7976589	128	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.4	2017-12-05
7976594	130	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.4	2017-12-05
7976592	130	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.6 ± 0.4	2017-12-05
7976544	209	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.5 ± 0.3	2017-12-04
7976539	212	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.3	2017-12-04
7976543	215	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976563	219	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976536	226	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976545	232	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	1.1 ± 0.4	2017-12-05
7976574	335	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976573	340	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976538	421	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05
7976537	MEDIA ROOM	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976542	MEDIA ROOM	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.6 ± 0.3	2017-12-04
7976535	MEDIA ROOM	2017-11-27 @ 3:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.4	2017-12-05
7975638	OB	2017-11-27 @ 3:00 pm	2017-11-30 @ 8:00 am	< 0.3	2017-12-05

December 21, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
SILVER CREEK MS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976579	119	@	@		

Air Chek, Inc. 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 Phase

Names of Schools:

- | | |
|--|---------------------------------------|
| 1. Montgomery Knolls Elementary School | 14. Flora Singer Elementary School |
| 2. New Hampshire Estates Elementary School | 15. Sligo Middle School |
| 3. Montgomery Blair High School | 16. Mario Loiederman Middle School |
| 4. Silver Creek Middle School | 17. Roscoe Nix Elementary School |
| 5. Sligo Creek Elementary School | 18. Sargent Shriver Elementary School |
| 6. East Silver Spring Elementary School | 19. |
| 7. Silver Spring International Middle School | 20. |
| 8. Woodlin Elementary School | 21. |
| 9. Northwood High School | 22. |
| 10. Spring Mill Center | 23. |
| 11. Westbrook Elementary School | 24. |
| 12. Westland Middle School | 25. |
| 13. Cloverly Elementary School | 26. |

	Date	Initials
Radon Test Kits Deployed	11/27/17	JM
Radon Test Kits Collected	11/30/17	JM
Radon Test Kits Shipped to Lab*	11/30/17	JM
Radon Test Kits Received by Lab*	12/04/17	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